

## Durham E-Theses

---

### *Assessing the Impact of Two Sleep Interventions on 'Normal' Children's Sleep Practices*

MEGAN ELIZABETH NEWARK

#### How to cite:

---

NEWARK, MEGAN ELIZABETH (2013) Assessing the Impact of Two Sleep Interventions on 'Normal' Children's Sleep Practices. Doctoral thesis, Durham University.

#### Use policy

---

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a <https://etheses.durham.ac.uk/id/eprint/7317/> is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full Durham E-Theses policy](#) for further details.

Assessing the Impact of Two Sleep Interventions on 'Normal' Children's Sleep Practices By Megan Elizabeth Newark

**ABSTRACT**

Insufficient sleep duration in preschool children has been associated with adverse health consequences, including increased risk of obesity; impaired reaction time, attention, memory and behaviour regulation and reduced academic performance. Very little research has been undertaken on the sleep of 'normal' children, which includes children who have not been identified with a sleep disorder but are not getting enough sleep for their individual requirements. This study aimed to implement two social marketing interventions targeting the sleep practices of 'normal' three and four year old children within Stockton-on-Tees. The thesis explores the process of designing and delivering one intervention via participatory research with parents and one intervention through collaborative working with a number of agencies. The parent intervention used posters and leaflets and was delivered via four Sure Start children's centres, one school nursery and one private nursery (n=19). The nursery intervention targeted children and delivered seven fun activities through two private nurseries and two school nurseries (n=31). A control group was recruited from five children's centres and four school nurseries (n=40). A questionnaire assessed child sleep duration and behaviour, parental beliefs and knowledge pre and post-intervention. Semi-structured interviews were carried out with parents post-intervention. Unfortunately it was not possible to evaluate the parent intervention due to lack of ongoing engagement by the pre-intervention group with the Sure Start Centres during the intervention. However, although these findings relate to a small sample and should be treated with caution, following the nursery intervention, statistically significant changes were found in children's morning waking behaviour, parental satisfaction with their children's sleep and bedtime routine, and parental knowledge ( $p < .05$ ). The difficulties encountered, and how these influenced the study is discussed, particularly with regard to power structures. The mechanisms by which the two interventions may have impacted upon parents' behaviour, beliefs and knowledge are also considered.

Assessing the Impact of Two Sleep  
Interventions on 'Normal' Children's Sleep  
Practices

By  
Megan Elizabeth Newark

Parent-Infant Sleep Laboratory & Medical Anthropology Research  
Group  
Department of Anthropology  
Durham University

2013

*Thesis submitted for the degree of Doctor of Philosophy*

## TABLE OF CONTENTS

SECTION	TITLE	PAGE NUMBER
	<b>CHAPTER 1: INTRODUCTION</b>	
<b>1.1</b>	Context	<b>1</b>
<b>1.2</b>	Aim	<b>4</b>
<b>1.3</b>	Objectives	<b>4</b>
<b>1.4</b>	Terminology	<b>5</b>
<b>1.5</b>	Thesis Outline	<b>6</b>
	<b>CHAPTER 2: LITERATURE REVIEW</b>	
<b>2.1</b>	Introduction	<b>8</b>
<b>2.2</b>	The Biology of Sleep	<b>8</b>
<b>2.3</b>	Children's Sleep and Health Outcomes	<b>10</b>
<b>2.4</b>	'Normal' Sleep	<b>13</b>
<b>2.5</b>	Measuring Sleep	<b>15</b>
<b>2.6</b>	Common Children's Sleep Issues	<b>16</b>
<b>2.6.1</b>	Bedtimes and Biological Preferences	<b>17</b>
<b>2.7</b>	Children's Sleep Culture	<b>18</b>
<b>2.8</b>	Children's Sleep and The Family	<b>22</b>
<b>2.9</b>	Parenting Behaviour	<b>23</b>
<b>2.10</b>	Children's Sleep Perspectives	<b>27</b>
<b>2.11</b>	Sleep Education	<b>28</b>
<b>2.12</b>	Sleep Interventions	<b>30</b>
<b>2.13</b>	Participatory Research	<b>31</b>
<b>2.14</b>	Social Marketing	<b>32</b>
<b>2.15</b>	Conclusion	<b>36</b>
	<b>CHAPTER 3: SYSTEMATIC REVIEW</b>	
<b>3.1</b>	Introduction	<b>38</b>
<b>3.2</b>	The Systematic Review	<b>39</b>
<b>3.2.1</b>	Research Questions	<b>40</b>
<b>3.2.2</b>	Inclusion Criteria	<b>41</b>
<b>3.2.3</b>	Exclusion criteria	<b>41</b>
<b>3.2.4</b>	Search Protocol	<b>41</b>
<b>3.2.5</b>	Outcome measures	<b>42</b>
<b>3.3</b>	Summary of Studies	<b>43</b>
<b>3.4</b>	Consulting with Families	<b>47</b>
<b>3.4.1</b>	Design and Delivery of Sleep Interventions	<b>47</b>
<b>3.4.2</b>	Evaluation of Sleep Interventions	<b>51</b>
<b>3.5</b>	Measuring Treatment Fidelity	<b>54</b>
<b>3.6</b>	Factors Contributing to Attrition	<b>56</b>
<b>3.7</b>	Behavioural Sleep Interventions for the General Paediatric Population	<b>59</b>
<b>3.8</b>	Results	<b>60</b>
<b>3.9</b>	Conclusion	<b>63</b>

	<b>CHAPTER 4: GENERAL METHODS</b>	
<b>4.1</b>	Introduction	<b>66</b>
<b>4.2</b>	Study Location	<b>66</b>
<b>4.2.1</b>	Stockton-on-Tees	<b>66</b>
<b>4.2.2</b>	Sure Start Children’s Centres	<b>67</b>
<b>4.2.3</b>	Nurseries	<b>68</b>
<b>4.3</b>	Study Design and Timescale	<b>69</b>
<b>4.3.1</b>	Steering Group	<b>70</b>
<b>4.3.2</b>	Control Group	<b>70</b>
<b>4.3.3</b>	Sampling Children’s Centres and Nurseries	<b>71</b>
<b>4.3.4</b>	Sampling Parent Respondents	<b>73</b>
<b>4.3.5</b>	Inclusion and Exclusion Criteria	<b>74</b>
<b>4.3.6</b>	Measuring Children’s Sleep	<b>74</b>
<b>4.4</b>	Questionnaires	<b>75</b>
<b>4.4.1</b>	Designing the Pre-intervention Questionnaire	<b>75</b>
<b>4.4.2</b>	Delivering the Pre-intervention Questionnaire	<b>78</b>
<b>4.4.3</b>	Incentives for Completion	<b>79</b>
<b>4.4.4</b>	Piloting the Questionnaire	<b>80</b>
<b>4.4.5</b>	Designing the Post-Intervention Questionnaire	<b>81</b>
<b>4.4.6</b>	Delivering the Post-Intervention Questionnaire	<b>82</b>
<b>4.5</b>	Interviews	<b>83</b>
<b>4.5.1</b>	Semi-Structured Interviews with Parent Respondents	<b>83</b>
<b>4.5.2</b>	Unstructured Interviews with Staff Respondents	<b>84</b>
<b>4.6</b>	Focus Groups	<b>85</b>
<b>4.6.1</b>	Use of Audio Equipment	<b>87</b>
<b>4.7</b>	Timeframe for Data Collection	<b>87</b>
<b>4.8</b>	Combining Quantitative and Qualitative Research	<b>89</b>
<b>4.9</b>	Analysing Data	<b>89</b>
<b>4.10</b>	Ethical Considerations	<b>91</b>
<b>4.10.1</b>	ASA Ethical Guidelines	<b>91</b>
<b>4.10.2</b>	Information Sheet and Consent Form	<b>92</b>
<b>4.10.3</b>	Recruiting Participants	<b>93</b>
	<b>CHAPTER 5: PARENT INTERVENTION: METHODS, RESULTS &amp; REFLECTIONS</b>	
<b>5.1</b>	Introduction	<b>94</b>
<b>5.2</b>	Participatory Research	<b>94</b>
<b>5.2.1</b>	Recruiting Participants	<b>95</b>
<b>5.2.2</b>	The Participatory Research Group	<b>98</b>
<b>5.2.3</b>	Addressing Power Imbalances	<b>99</b>
<b>5.2.4</b>	Knowledge Construction, Relationship Building and Power	<b>101</b>
<b>5.3</b>	Designing and Implementing The Parent Intervention	<b>102</b>
<b>5.3.1</b>	Personal and Social Transformation	<b>115</b>
<b>5.4</b>	Evaluating The Success of The Parent Intervention	<b>116</b>

5.4.1	Reflections on the Process of Participatory Research	116
5.4.2	Participatory Research Groups' Semi-Structured Parent Interviews	117
5.4.3	Post-Intervention Semi-Structured Interviews	119
5.4.4	Focus Groups and Interviews with Sure Start and Nursery Staff	122
5.5	Conclusion	126
	<b>CHAPTER 6: NURSERY INTERVENTION: METHODS, RESULTS AND REFLECTIONS</b>	
6.1	Introduction	128
6.2	Researching Children	128
6.3	The Early Years Foundation Stage	131
6.4	The Nursery Intervention	132
6.4.1	Designing the Nursery Intervention	132
6.4.2	The Nurseries	135
6.4.3	Evaluating the Activities With Children	138
6.4.4	The Activities and Researcher's Reflections	140
6.4.5	Collaborative Working	162
6.5	Post Intervention Semi-Structured Interviews	164
6.5.1	Interviews with Parents	164
6.5.2	Interviews with Nursery Staff	169
6.6	Conclusion	174
	<b>CHAPTER 7: COMPARATIVE RESULTS</b>	
7.1	Introduction	176
7.2	Description Of The Overall Sample	176
7.2.1	Respondents' Characteristics	177
7.2.2	Children's Sleep Environment	179
7.3	Regulating Children's Bedtimes and Wake Times and Sleep Duration	181
7.3.1	Parental Satisfaction with Children's Sleep and Routine	182
7.3.2	Parental Knowledge of Healthy Sleep Practices	184
7.4	Description of Sub Sample	185
7.4.1	Control Group & Nursery Intervention Sub Sample Respondents' Characteristics	186
7.4.2	Control Group & Nursery Intervention Sub Sample Children's Sleep Environment	188
7.4.3	How representative are the sub sample groups?	189
7.5	Regular Bedtimes, Wake Times and Sleep Duration	192
7.6	Composite Scores	195
	<b>CHAPTER 8: DISCUSSION</b>	
8.1	Introduction	199
8.2	Changing Children's Sleep Practices	199
8.3	Mechanisms of Change	200
8.3.1	Nursery Intervention	200
8.3.2	Parent Intervention	205
8.4	The Process of Developing Interventions	208

<b>8.4.1</b>	The Process of Developing the Nursery Intervention	<b>208</b>
<b>8.4.2</b>	Issues of Power Impacting Upon the Nursery Intervention	<b>213</b>
<b>8.4.3</b>	The Process of Developing the Parent Intervention	<b>214</b>
<b>8.4.4</b>	Issues of Power Impacting Upon the Parent Intervention	<b>219</b>
<b>8.5</b>	Study Limitations	<b>223</b>
<b>8.6</b>	Conclusion	<b>226</b>
	<b>APPENDICES</b>	
<b>A</b>	Pre-Intervention Questionnaire	<b>229</b>
<b>B</b>	Post-Intervention Questionnaire	
<b>B1</b>	Parent Intervention	<b>232</b>
<b>B2</b>	Nursery Intervention	<b>235</b>
<b>C</b>	Sample Letter for Post-Intervention Questionnaire	<b>238</b>
<b>D</b>	Interview Guide for Staff	<b>239</b>
<b>E</b>	Information Sheet for Participants	
<b>E1</b>	Parent Intervention	<b>240</b>
<b>E2</b>	Nursery Intervention	<b>241</b>
<b>E3</b>	Control Group	<b>242</b>
<b>F</b>	Consent Form	
<b>F1</b>	Parent Intervention & Control Group	<b>243</b>
<b>F2</b>	Nursery Intervention	<b>244</b>
<b>G</b>	Poster to Recruit Participatory Research Group	<b>245</b>
<b>H</b>	Participatory Research Information Sheet	<b>246</b>
<b>I</b>	Sleep Solutionz Leaflets	
<b>I1</b>	Everything you need to know for a blissful bedtime for you and your child	<b>247</b>
<b>I2</b>	Dealing with Night Waking: Young Children & Babies	<b>249</b>
<b>I3</b>	Handy Hints for Your Child's Development	<b>251</b>
<b>I4</b>	Sleep, Eat & Exercise	<b>253</b>
<b>I5</b>	Sharing Our Stories	<b>255</b>
<b>J</b>	Participatory Research Semi-Structured Interview Guide	<b>257</b>
<b>K</b>	Children's Super Sleeper Certificate	<b>259</b>
<b>L</b>	Example of a Nursery Intervention Project Booklet	<b>260</b>
<b>M</b>	Weightings of Composite Scores	<b>268</b>

## LIST OF TABLES

TABLE	TITLE	PAGE NUMBER
	<b>CHAPTER 3: SYSTEMATIC REVIEW</b>	
<b>1</b>	Summary of Identified Studies	<b>44</b>
<b>2</b>	The Involvement of Families in the Design and Evaluation of Sleep Interventions	<b>53</b>
<b>3</b>	The Factors For Attrition in Sleep Interventions	<b>58</b>
	<b>CHAPTER 4: GENERAL METHODS</b>	
<b>4</b>	Participating Sure Start Centres and Nurseries	<b>72</b>
<b>5</b>	Timeframe for Data Collection	<b>88</b>
	<b>CHAPTER 5: PARENT INTERVENTION</b>	
<b>6</b>	Responses from Participatory Research Group Interviews with a Convenience Sample of Parents	<b>118</b>
	<b>CHAPTER 6: NURSERY INTERVENTION</b>	
<b>7</b>	Nursery Activities and Learning Outcomes	<b>134</b>
	<b>CHAPTER 7: COMPARATIVE RESULTS</b>	
<b>8</b>	Respondents' Characteristics for Pre-intervention Questionnaire	<b>177</b>
<b>9</b>	Children's Sleep Environment for Pre-intervention Questionnaire	<b>180</b>
<b>10</b>	Parental Satisfaction with Children's Sleep and Routine by Respondent Category for Pre-intervention Questionnaire	<b>183</b>
<b>11</b>	Parental Knowledge of Recommended Sleep Practices by Respondent Category for Pre-intervention Questionnaire	<b>185</b>
<b>12</b>	Control Group and Nursery Intervention Sub Sample Respondents' Characteristics from Pre-intervention Questionnaire	<b>187</b>
<b>13</b>	Control Group and Nursery Intervention Sub Sample Children's Sleep Environment for Pre-intervention Questionnaire	<b>188</b>
<b>14</b>	Mann-Whitney U Tests to Explore Differences between Respondents from the Pre-intervention Only and Pre and Post-Intervention in the Control Group and Nursery Intervention Sample	<b>190</b>
<b>15</b>	Fischer's Exact Test to Explore Differences between Respondents Participating Pre-intervention Only and Pre and Post-intervention in the Control Group and Nursery Intervention Sub-Sample	<b>191</b>
<b>16</b>	McNemar Test Results for Regular Bedtimes and Wake Times for the Control Group and Nursery Intervention Sub-Sample	<b>193</b>
<b>17</b>	Wilcoxon Signed Rank Tests for Weekday and Weekend Sleep Duration	<b>194</b>
<b>18</b>	Wilcoxon Signed Rank Tests for Composite Scores	<b>197</b>

## LIST OF FIGURES

<b>FIGURE</b>	<b>TITLE</b>	<b>PAGE NUMBER</b>
	<b>CHAPTER 5: PARENT INTERVENTION</b>	
<b>1</b>	An Original Sleep Solutionz Notice Board and a Revamped Notice Board	<b>114</b>
	<b>CHAPTER 6: NURSERY INTERVENTION</b>	
<b>2</b>	Reading 'Tigers love to say Goodnight'	<b>141</b>
<b>3</b>	Identifying Animals and Their Sleeping Places	<b>145</b>
<b>4</b>	Role Playing Getting Ready For Bed	<b>148</b>
<b>5</b>	Role Play at Redhill Nursery in the 'Child's Bedroom'	<b>151</b>
<b>6</b>	Making Dream Catchers	<b>152</b>
<b>7</b>	Making Dens	<b>154</b>
<b>8</b>	Making a Rocket to Take to the Moon at Footsteps Nursery	<b>157</b>
<b>9</b>	Pyjama Day	<b>158</b>
<b>10</b>	Children's Photographs of their Bedtimes	<b>161</b>

## **Declaration**

---

I declare that this thesis is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due acknowledgement has been made in the text. I confirm that no part of the material presented in this thesis has previously been submitted by me or any other person for a degree in this or any other institution.

## **Statement of Copyright**

---

The copyright of this thesis rests with the author. No quotation from it should be published without the prior written consent and information derived from it should be acknowledged.

Signed:

Date:

## **ACKNOWLEDGEMENTS**

I would like to thank Professor Helen Ball for her support, encouragement and guidance throughout my time at Durham University. I have found Helen a wealth of expertise and inspiration. I would like to express my gratitude to Doctor Peter Collins for his advice on my written work. I also thank Professor Carolyn Summerbell for her early input into the study.

I gratefully acknowledge the ESRC CASE studentship with Stockton Sure Start. I would like to thank Stockton Sure Start children's centres and staff, in particular Barbara Brookes for her guidance, and Janet Seddon. I would also like to thank the nurseries that took part in the study and made me feel very welcome during the time I spent there. I would like to thank the parents and children who participated. I would like to extend special thanks to the participatory research group: Stacey Ferguson, Sarah Cummins, Linda Cross, Karen Barclay and Anne-Marie Swales.

Thank you also to the Parent Infant Sleep Lab for being such a supportive team, with special mention to Caroline Jones, Catherine Taylor and Dawn Mee for your help and friendship.

I would like to express gratitude to my Mum and Dad and husband, Dan, for their pride in me and encouragement throughout the PhD process. I am especially grateful to my Mum for the time she has so generously given up to look after my daughter, Beatrix, allowing me to write up, and for proofreading. Finally, I would like to thank Dan for listening, helping, and make me smile!

## **CHAPTER 1: INTRODUCTION**

### **1.1 CONTEXT**

The duration of children's sleep and the bedtime practices parents establish in relation to children's sleep is a popular area of interest and a well established field of inquiry. Social historians have suggested that children's sleep was 'less contested and less orchestrated' in the nineteenth century (Stearns, Rowland, & Giarnella, 1996:346). However, in the 1890s advice emerged that parents should limit interactions with their children during the night and that children should sleep alone. This advice signaled the instigation of a movement toward children learning self-sufficiency at night, which resulted in children's sleep being given more significance in manuals and magazines (Stearns, et al., 1996). By the 1920s, the importance of 'quiet time' before bed and the regulation of sleep habits by parents, such as fixed nap times and bedtimes were being promoted. For children to become good sleepers, which was essential to their adult health, parents needed to provide sleep training (Stearns, et al., 1996). This belief still resonates in modern parenting; a primary parenting landmark is when a child begins to sleep independently through the night (Davis, Parker, & Montgomery, 2004b). Parents receive an abundance of advice on how to establish a good sleep routine for their child, starting as early as antenatal classes and pregnancy books. Advice about children's sleep is part of popular parenting culture, featuring in the news, women's magazines, baby manuals, celebrity baby books, television programmes and websites, as well as being a subject of discussion between family and friends. However, advice is often at odds and lacking in scientific vigour. For example, Ramos and Youngclarke (2006) examined 40 parenting books that concerned 'cry it out' sleep training and cosleeping and concluded that the advice given was often directly contradictory, and strong guidance was dispensed even where scientific evidence was lacking. The characteristics of the authors were reported: 73% of first authors had never published academic literature, 43% of authors had no professional credentials, whilst 40% of authors were medical professionals, mostly doctors.

Advice regarding children's sleep duration led to age specific recommendations being proffered to parents. In a review of children's sleep recommendations dating as far back as 1897, Matricciani, Olds, Blunden, Rigney and Williams (2012) reported that recommendations were based on very little empirical evidence. The review found that both children's sleep recommendations and actual sleep duration had declined over the period with a consistent disparity of approximately 37 minutes separating them: children's sleep recommendations consistently exceeded children's actual sleep, suggesting that there is a customary trend to believe that children require more sleep than they are getting. However, the review corroborates the findings of other studies reporting that children's sleep duration is decreasing. For example, a longitudinal study by Iglowstein, Jenni, Molinari and Largo (2003) of a Swedish population from birth to 16 years of age found that between 1974 and 1993 young children's sleep duration shortened due to later bedtimes and constant wake times. Children aged two years old in 1974 were sleeping for 14.2 hours, which reduced to 13.5 hours by 1986 (Iglowstein, et al., 2003). A study by Sadeh, Gruber and Raviv (2003) found in a study of school aged children that restricting and extending sleep by as little as half an hour effected their neurobehavioural functioning. Studies have also found that parents report sleepiness in their young children, for example the National Sleep Foundation's (NSF) 2004 poll of children's sleep in the United States (US) stated that 26% of preschoolers exhibit sleepy or over tired symptoms during the day. A study involving older children in the US self reporting sleep duration found that 92% of respondents did not attain the recommended amount of sleep for their age. Respondents identified lack of sleep as contributing to: feeling tired during the day (94%), struggling to pay attention (84%), attaining lower grades (61%), experiencing increased stress (59%) and having problems getting along with others (58%) (Noland, Price, Dake, & Telljohann, 2009). A study of teachers in the UK found that nine out of ten teachers complained that children are so tired they struggle to pay attention in class, 38% of teachers believed that not enough sleep was a daily problem amongst children and

24% of primary teachers stated that they resort to letting children who are overtired sleep in the corner of the room (The Sleep Council, 2012).

The issue of whether children are getting enough sleep is one that Wiggs (2007) highlights can be addressed at both the societal and individual level, as opinions about children's sleep are shaped by time and culture. The question is of concern and relevance as children's sleep problems can be detrimental to the family, society and the economy. At an individual level, short sleep duration and poor quality sleep in children has been associated with inferior cognitive functioning (Sadeh, Gruber, & Raviv, 2003) and higher injury rates (Owens, Fernando, & Mc Guinn, 2005). Parents of children with sleep disorders have been found to experience decreased sleep duration and sleep quality and increased stress and fatigue (Dahl & El-Sheikh, 2007), issues that have been reported to be a contributory factor to the breakdown of marriages (Chavin & Tinson, 1980). On a wider scale, children's sleep disorders have been linked to behavioural problems (Yokomaku et al., 2008) and impaired academic performance (Dewald, Meijer, Oort, Kerkhof, & Bogels, 2010), which can lead to classroom disruption and lower educational attainment. At a societal level, research has found that parental report of sleep problems in preschool children identified by maternal report predict early use of alcohol and illegal substances such as marijuana, as well as occasional or regular smoking by ages 12 to 14 years (Wong, Brower, Fitzgerald, & Zucker, 2004). The adverse health outcomes associated with children's poor sleeping habits can also be costly. Short sleep duration has been demonstrated to be associated with childhood obesity (Reilly et al., 2005). The total cost of treating obesity and the health conditions directly associated with being obese was £3340–3724 million in England in 2001/02, which increased to £6.6–7.4 billion if the cost of being overweight was also included (McCormick, Stone, & Team, 2007). Other repercussions of an obese society include economic costs, such as absence from employment and unemployment.

Researchers have proposed that negative health outcomes associated with children's sleep, with particular reference to childhood obesity, might be addressed via

interventions addressing sleep duration and quality in young children (Gupta, Mueller, Chan, & Meininger, 2002; Taheri, 2006). It has also been argued that children, parents and educators should receive sleep education to gain a better understanding of recommended sleep practices and why sleep is important (Mindell, Owens, et al., 2011). In a study by Jones (2011) of children's sleep within Stockton-on-Tees, it was found that parents' sleep education was limited despite an abundance of advice. The majority of sleep interventions concern sleep disorders, as identified by parents, and very little research has been undertaken on 'normal' children's sleep. This includes children who have not been identified with a sleep disorder but are not getting enough sleep for their individual requirements. Whilst there is a large body of evidence linking short sleep duration to a range of health and behavioural problems there is no evidence to suggest that there are any adverse consequences associated with extended sleep duration in young children.

## **1.2 AIM**

This exploratory study aimed to develop, deliver and evaluate two community based social marketing interventions and examine their effect on preschool children's sleep and the sleep practices parents establish for their children. The project aimed to investigate whether these interventions stimulated a change in parental beliefs about their children's sleep, and increased knowledge of recommended sleep practices for preschool children. It aimed to examine whether the interventions impacted upon parents' and children's behaviour in comparison with a control group.

## **1.3 OBJECTIVES**

Overall objectives for the study:

- Examine whether it is possible to increase parental knowledge regarding recommended sleep practices via social marketing interventions
- Investigate whether exposure to social marketing interventions impacts upon parents' beliefs about children's sleep practices

- Assess whether parents make any changes to bedtime practices following contact with one of the social marketing interventions
- Assess whether preschool children's sleep duration is affected following exposure to social marketing interventions
- Reflect on the development of interventions
- Reflect on possible mechanisms of change for interventions

Specific objectives for the parent intervention are as follows:

- Establish a participatory research group that will design a social marketing intervention
- Produce an intervention that encourages parents to think about their child's sleep and bedtime
- Increase parents' self efficacy in changing their child's sleep practices

Specific objectives for the nursery intervention are as follows:

- Design an intervention that encourages children to think about their sleep and bedtime
- Increase communication between parents and children on the topic of sleep
- Influence parents via their children to make changes to their child's sleep and bedtime

#### **1.4 TERMINOLOGY**

The term 'social marketing intervention' is being used in the place of 'social marketing campaign'. Social marketing is an appropriate intervention technique as it concerns the behaviour of individuals that impacts upon society as a whole (Kotler et al, 2002). However, the use of the word 'campaign' seems inappropriate in terms of an anthropological study, since it has the connotation that a campaign is an aggressive tactical intrusion and that parents and children are being coerced into making changes. The social marketing interventions implemented in this study are

based on understanding of children's sleep culture and the choices that parents face in determining their children's sleep practices.

## **1.5 THESIS OUTLINE**

Chapter 2 will review literature on young children's sleep, beginning with the biology of sleep and a discussion of 'normal' and problematic sleep, indicate how sleep can be measured, and identify health outcomes related to sleep. It progresses to examine the effect that cultural norms, families and parenting behaviour have upon children's sleep. Sleep interventions are discussed.

Chapter 3 is a systematic review examining the involvement of families in the design, delivery and evaluation of behavioural sleep interventions for preschool children. It explores whether there is any difference in treatment fidelity and attrition rate between the identified studies.

Chapter 4 explains the general methodology, including the study setting, the sample, and quantitative and qualitative data collection techniques.

Chapter 5 provides details on the design, delivery and qualitative evaluation of an intervention targeting the parents of preschool children. The issues encountered when establishing a participatory research group are discussed in detail.

Chapter 6 describes the design, delivery and qualitative evaluation of an intervention targeting preschool children in nurseries. Reflections on the delivery of the intervention and process of working with young children and nurseries are discussed.

Chapter 7 presents data on the pre and post-intervention samples, and analyses contrasting the nursery intervention and control group samples post-intervention.

Chapter 8 is a discussion about the mechanisms of change that might have influenced the two interventions. The development of the interventions is discussed in detail, particularly with regard to problems that arose such as power imbalances. The limitations of the study are discussed and the conclusion provides a summary of the findings.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 INTRODUCTION**

This chapter describes the biology of sleep, health outcomes relating to children's sleep and what constitutes 'normal' and 'problem' sleep in children. Children's sleep culture is discussed in a global context before focusing upon the family, environment and parental behaviour in the Western world. The chapter considers evidence for young children's sleep education and behavioural interventions, and provides evidence for the use of participatory research and social marketing in sleep interventions.

### **2.2 THE BIOLOGY OF SLEEP**

Sleep is a child's principal activity, occupying more time than all wakeful activities combined by three years of age, suggesting that it is essential for development (Dahl, 1998). Adequate sleep is also considered as a necessary prerequisite for optimal health (Davis, Parker, & Montgomery, 2004a). However, the exact purpose of sleep has yet to be clarified (Wiggs, 2007). Sleep is regarded as a restful time with limited awareness of the external environment, whilst there is considerable neurological and physiological activity (Zee, 1999).

Sleep is regulated by two processes: the circadian process and the homeostatic process. The circadian process is an internal clock, which is driven by light and dark and determines wakefulness and sleep but is not mitigated by sleep and waking (Borbely & Achermann, 1999). The suprachiasmatic nucleus (SCN) of the hypothalamus, a mass of approximately 10,000 neurons positioned above the optic chiasm, receives information about illumination through the eyes. It encodes this information and passes it to the pineal gland in the centre of the brain. Here melatonin is secreted, an endogenous hormone that both promotes sleep onset and manages the sleeping cycle. For melatonin to be effectual at both reducing

sleepiness during early waking hours and inducting sleep in the evening it is important to be subjected to natural daylight upon waking, (as artificial light is not as effective at suppressing melatonin), and darkness in the evening. Circadian rhythm sleep disorders (CRSDs), which might be mediated by melatonin, include seasonal affective disorder, jet lag and shift-work disorder (Pandi-Perumal et al., 2008). Changes in the external environment, such as bright lights, television viewing, meal times, noise and temperature can also transiently affect the circadian rhythm (Davis, et al., 2004a). Circadian rhythms are becoming established by the time infants are six months of age with sleep patterns having a 24 hour cycle of nocturnal sleep and daytime naps. Children of six years and above are generally only sleeping at night (Armour & Paton, 2004). The homeostatic process is governed by prior sleep and wakefulness (Taillard, Philip, Coste, Sagaspe, & Bioulac, 2003) and is a physical requirement for sleep that increases during wakefulness and can eventually only be mitigated by sleep (Davis, et al., 2004a). Homeostatic sleep pressure accumulates more slowly with increasing age, which enables children to stay awake for longer periods during the day (Jenni & LeBourgeois, 2006).

There are two forms of alternating sleep: nonrapid eye movement (NREM) and rapid eye movement (REM). NREM sleep encompasses four stages: stage one; a light sleep with easy arousal, graduating to stage four; a deep sleep with low arousal (Zee, 1999). Stage two NREM sleep is considered sleep onset for adults, whilst babies begin sleep with REM. REM sleep comprises muscle paralysis and dreaming as the brain functions at a higher state, similar to wakefulness. REM sleep enables the storing of learnt information and new experiences (Adair & Bauchner, 1993). Infants spend approximately 55% of their sleep in REM (active) sleep compared to children aged five years who spend between 20% to 25% in REM sleep state (Anders, Sadeh, & Appareddy, 1995).

### **2.3 CHILDREN'S SLEEP AND HEALTH OUTCOMES**

Sleep is a crucial function in regulating children's development, the human growth hormone being released during sleep (Underwood, Azumi, Voina, & Vanwyk, 1971). Conditions that disrupt the amount of sleep a child may routinely obtain include sleep disordered breathing conditions (e.g. snoring and obstructive sleep apnea), which may increase the risk of growth failure (Bolyard & Cavins, 2008; Bonuck, Parikh, & Bassila, 2006). However, recent studies examining parent reported sleep duration and growth variables have not supported an association between the two in healthy children, and it remains unclear whether sleep disorders inhibit growth in this population (Jenni, Molinari, Caflisch, & Largo, 2007).

Sleep duration appears to be a predictor of coexisting and future obesity, especially in young children (Nixon et al., 2008; Patel & Hu, 2008; Reilly, et al., 2005; Snell, Adam, & Duncan, 2007). Recent studies have demonstrated that the prevalence of obesity is reduced by increased duration of sleep and these findings are independent of other socio-economic factors (Lumeng et al., 2007; von Kries, Toschke, Wurmser, Sauerwald, & Koletzko, 2002). One possible reason for this association is the effect sleep has on the appetite regulatory hormones, leptin and ghrelin (Lumeng, et al., 2007). Short sleep duration reduces leptin and increases ghrelin, which results in an increased appetite and an increased desire for energy dense foods. It is also possible that night sleep reduces children's exposure to obesity risk factors, such as evening food intake (Taheri, Lin, Austin, Young, & Mignot, 2004).

Overweight children have been found to sleep on average 30 minutes less than non-overweight children (Reilly, et al., 2005). Sleeping for 11.5 hours or more on a daily basis at five or six years of age reduced the risk of excessive body fat mass and obesity to less than a half (Agras, Hammer, McNicholas, & Kraemer, 2004). The sleep obesity relationship has been described as a dose-response relationship between late bedtime or short sleeping hours and obesity (von Kries, et al., 2002). Interventions concentrating on changing individuals' food choices and calorie intake

and increasing physical activity in a bid to prevent obesity are difficult to evaluate but have been found to have made little difference in preventing weight gain, although they may have contributed to individuals living healthier lives (Summerbell et al., 2005). Ensuring adequate sleep duration and improving the quality of sleep is considered to be a potential novel intervention in preventing obesity in children (Gupta, et al., 2002; Taheri, 2006).

Sleep is an essential element of children's day to day functioning (Snell, et al., 2007) and has been found to have behavioural impacts upon neurocognitive function (O'Brien & Gozal, 2004). A slight reduction in a night's sleep duration can considerably impair cognitive and behaviour functioning the next day, whilst lengthening school aged children's sleep duration by as little as 30 minutes a day for three days can have a significantly positive effect on children's neurobehavioural functioning (Sadeh, et al., 2003). By this means sleep also affects academic performance. A recent meta-analysis examining sleep quality, sleep duration and sleepiness concluded that associations were stronger between younger children than older children, and that neurobehavioural functioning was more strongly coupled with sleep quality for younger participants (Sekine et al., 2002).

Adjustment to new experiences such as entering preschool can be impaired by inadequate sleep (Bates, Viken, Alexander, Beyers, & Stockton, 2002). Sleep problems during the school transition phase, moving from preschool to full time school, have also been demonstrated to predict poor parent reported health related quality of life, and language, parent and teacher reported behaviour, and teacher reported learning scores (Dewald, et al., 2010). Indeed, behavioural problems are more likely to be experienced by preschool children, who are late risers, late sleepers, or irregular in their rising and sleeping, as measured by the Child Behaviour Checklist (CBCL) (Yokomaku, et al., 2008). A study in Finland by Paavonen, Porkka-Heiskanen and Lahikainen (2009) examined sleep duration and psychiatric symptoms in 500 children aged five and six years old. Using the Sleep Disturbance Scale for Children (SDSC), CBCL and Teachers Report Form (TRF)

the study demonstrated that both short sleep duration and sleep disturbance was significantly associated with behavioural problems. The study concludes that further research is needed to establish whether lengthening sleep duration or improving sleep quality would result in an improvement in children's behaviour. Zuckerman, Stevenson and Bailey (1987) found that children with persistent sleep problems were more likely to throw tantrums and parents were more likely to experience difficulty managing their child's behaviour than children without sleep problems.

Sleep problems and short sleep duration have been found to result in an increased prevalence in injury rates and injury prone behaviours amongst children aged three to seven years old (Quach, Hiscock, Canterford, & Wake, 2009). Short sleep duration in preschool children has also been associated with unhealthy behaviours, such as early use of alcohol, cigarettes and illegal substances (Owens, Fernando et al, 2005). Chen, Wang and Jeng (2006) found a significant negative relationship between adolescents who attained less than the recommended amount of sleep for their age and various health related behaviours, such as physical exercise, a healthy diet, taking responsibility for health, effective stress management and life appreciation. A study by Liu (2004) found an association between short sleep duration and nightmares and suicide behaviour.

It is interesting to note that whilst children's health outcomes relating to inadequate sleep have been a popular topic of research in latter years, an under researched area is children's health outcomes from prolonged sleep duration (Wong, et al., 2004). This raises questions regarding the appropriateness of sleep interventions aimed at increasing sleep duration for children who are not experiencing a physiological or behavioural sleep problem, for example, the children of parents who would like them to sleep for longer. These children fall within the 'normal' paediatric population. The interventions proposed in this study involve all these groups and sleep duration and sleep practices will be examined for the whole cohort, not just those with sleep disorders.

## 2.4 'NORMAL' SLEEP

It is not possible to classify 'normal sleep' as limited data are available on the normal sleep patterns of preschool children (Acebo et al., 2005) and normative data on children's sleep duration by chronological age does not exist (Iglowstein, et al., 2003). This means that the question of whether there is an adequate or optimal duration of sleep period for this age group remains unresolved (Davis, et al., 2004a), and scholars have highlighted the importance of more research on children's sleep to provide better guidelines for parents and health professionals (Snell, et al., 2007).

However, child sleep studies have concluded that individual differences make it impossible to prescribe an ideal duration of daily sleep for age groups (Horne, 1992; Klackenberg, 1982). For example, Nixon et al (2008) examined the sleep of over 500 seven year old children in Australia and found that their sleep duration varied considerably and was affected by weekday, the season and whether or not they had younger siblings. A longitudinal study in Sweden by Klackenberg (1982) also illustrated that sleep requirements differed considerably amongst cohorts of children the same age. Wiggs (2007) argues that the question of optimal sleep duration is best answered by examining children's day time functioning; if a child is functioning optimally then their sleep duration is likely to be sufficient, but this raises issues around the definition of 'optimal functioning.' One suggestion raised by Jenni et al (2007) is that if a child does not exhibit sleepy behaviour during the day but does behave in an age appropriate manner and wakes up spontaneously then they are not in need of clinical aid.

Guidance from specialist sleep clinics, such as the Millpond Children's Sleep Clinic, as used by the UK National Health Service (NHS), and the American National Sleep Foundation (NSF) propose as a general guideline that children aged 2-5 years should typically be sleeping between 11 and 13 hours over a 24 hour period (NHS, 2010). Percentile curves have been identified as an appropriate means of identifying short or prolonged sleep duration contrasted against the normal population (Jenni, et al.,

2007). Most research undertaken on young children's sleep is based upon parental report of a child's bedtime, wake time and night wakings, rather than objective measures (Nixon, et al., 2008), so the accuracy of these data cannot be validated.

Several authors have provided findings to demonstrate that the sleep duration of preschool children has consistently decreased since the 1970s (Dollman, Ridley, Olds, & Lowe, 2007; Iglowstein, et al., 2003). A recent study by Matricciani, Olds and Petkov (2012) is the most comprehensive to date examining secular trends in the sleep of children and adolescents. The study finds that sleep has decreased by 0.75 minutes per year over the last 100 years. Secular declines were noted in the United States of America (USA), Canada, and Asia, with Europe demonstrating the largest decline, although interestingly not the UK or Scandinavia, both countries instead showing small increases. Significant differences are demonstrated between regions, sexes, age groups, and different days of the week. The study supports Iglowstein et al's (2003) theory that the decline in children's sleep duration may be attributed to later bedtimes whilst waking times remain constant. It suggests that children may potentially be more sleep deprived than their parents or grandparents. A poll by the NSF (2004) demonstrated that 22% of preschool children surveyed in the USA slept for less than ten hours in a 24 hour period, and the quality of sleep was often considered to be compromised (Buckhalt, El-Sheikh, & Keller, 2007). It was found, based on parental reports that 52% of preschool children stall about going to bed, 26% exhibit sleepy or overtired symptoms during the day and 19% have problems waking in the morning on at least a few days of the week.

A potential explanation for a decrease in children's sleep between infancy and five years of age is reduction in napping. The longitudinal study of children's sleep in Sweden by Iglowstein et al (2003) and the Avon Longitudinal Study of Parents and Children (ALSPAC) in the UK demonstrated that daytime sleep dramatically reduces between 18 months and five to six years of age (Taheri et al., 2006). Research has found that as long as children are provided with the opportunity to nap they continue to do so (Ward, Gay, Anders, Alkon, & Lee, 2008; Weissbluth, 1995).

The phasing out of naps may be at the detriment of a child's physiologic sleep need and it is important that any disparity is matched by additional nighttime sleep (Davis, et al., 2004a).

## **2.5 MEASURING SLEEP**

Sleep is generally examined in terms of duration and quality. Subjective measures include sleep diaries and sleep questionnaires, for example the Children's Sleep Habits Questionnaire (CSHQ). These measures are completed by parents and include the time a child went to sleep, number and duration of night wakings and the time a child woke in the morning. They might also reveal lifestyle issues that are impacting upon a child's sleep, for example, poor sleep practices (watching the television before bed etc.). Objective measures of sleep are provided by a polysomnography (PSG); a multi-parametric test that examines biophysiological changes during sleep. This records eye movement (electrooculography: EOG), brain activity (electroencephalogram: EEG), heart rhythm (electrocardiogram: ECG), skeletal muscle activation (electromyography: EMG), airflow, respiration and oxygen saturation. It can be performed in a sleep laboratory or in the home. Actigraphy is another common sleep measurement, often preferred to PSG, as it enables 24 hour recording for a number of days, weeks or months (Ancoli-Israel et al., 2003). Actigraphs are generally worn on the wrist or ankle and record movement via an accelerometer. Computer packages analyse periods of movement and inactivity, rhythm parameters and sleep/wake parameters such as sleep duration and number of wakings. Videosomnography is often used in the home or lab in combination with PSG or actigraphy to film sleep patterns to enable further interpretation of results and night wakings. Objective sleep measures are particularly useful in assessing the effectiveness of treatments, as they are more sensitive measures than sleep logs (Ancoli-Israel, et al., 2003), however, they are not necessarily more accurate when documenting 'normal' or non-problematic sleep.

## 2.6 COMMON CHILDREN'S SLEEP ISSUES

Approximately a quarter of all parents will at some point experience a problem with their child's sleep, whether that be a short-term behavioural issue, such as difficulty falling asleep or night waking, or a more serious sleep disorder, such as sleep apnea (Owens, 2008). Some sleep problems are associated with medical, psychiatric and neurodevelopmental conditions (Wiggs, 2007) such as epilepsy, Attention Deficit Hyperactivity Disorder (ADHD) and asthma.

There are 84 types of sleep disorders listed in the International Classification of Sleep Disorders (ICSD) (American Academy of Sleep Medicine, 2005). Sleep disorders are varied in nature and include obstructive sleep apnoea; the interruption of breathing during sleep, restless legs syndrome; limb movements that disturb sleep, narcolepsy; excessive daytime sleepiness, and parasomnias; a range of issues incorporating sleep walking, night terrors and enuresis (bed wetting), and behavioural sleep disorders include difficulty falling asleep and maintaining sleep (waking and not being able to return to sleep). Most children's behavioural sleep disorders manifest in bedtime resistance, difficulty falling asleep, difficulty maintaining sleep and excessive daytime sleepiness (Jodi A. Mindell & Meltzer, 2008).

Defining a behavioural sleep disorder is almost as contentious as defining 'normal' levels of sleep. Minde (1999) highlights the issue that timing can play in determining a sleep disorder. For example, an infant that sleeps for seven continuous hours from 10.30pm to 5.30am could be categorised a 'good sleeper', whilst an infant that sleeps from 7.00pm until 2.00am might be considered a 'night waker.' Night waking is commonly experienced by parents of infants and preschool children. Night waking tends to occur toward the end of a sleep cycle and is generally not a problem if children find their environment unchanged from when they initiated sleep. However, if the environment is different, for example, a light

turned out, the absence of a parent or tangible comforter, such as a dummy, children are likely to proceed to full wakefulness (Adair & Bauchner, 1993).

A longitudinal study found that children who are short sleepers continue to be short sleepers throughout their childhood and the same is true of long sleepers (Iglowstein, et al., 2003). A number of studies have shown that sleep disorders continue from infancy into childhood. For example, a study by Zuckerman et al (1987) demonstrated that 41% of infants with a sleep problem at eight months of age would still have a sleep problem at three years of age, compared to 26% of children at three years of age with a sleep problem who did not have an issue at eight months of age. Pollock (1994) found significant associations between poor sleep at six months of age and five years of age, and at five years of age and ten years of age. Nightwakings are also more likely during childhood if they were experienced during infancy (Thome & Skuladottir, 2005). This suggests that it is important to address sleep disorders in their early period to prevent them becoming an issue throughout childhood and possibly adulthood.

### ***2.6.1 Bedtimes and Biological Preferences***

Bedtimes play a crucial role in sleep duration; Klackenberg (1968) found that bedtime is often the enabler for a child to sleep for longer, as children who are late to bed are not necessarily late risers. It has also been found that children may take up to an hour to fall asleep in the evening, and those children going to bed later require a longer presleep period (Healy, 1972). Jenni and O'Connor (2005) contend that individuals often exert a biological preference for bedtimes, falling into 'larks', where people find it difficult to remain awake past their usual bedtime and awake early in the morning, or 'owls', where people keep later night time hours and often struggle to rise in the morning. This research has predominantly concerned adults but the authors argue that it is likely that children also exhibit such preferences (Jenni & O'Connor, 2005), which may not be acknowledged in the routines determined by their parents. Night waking is also a biologically normal aspect of

the human sleep cycle, but a common cultural sleep viewpoint is that children should learn to reinitiate sleep without assistance. Therefore, night waking is generally considered problematic if it involves ‘signaling’ wakefulness to parents (Acebo, et al., 2005).

## **2.7 CHILDREN’S SLEEP CULTURE**

Sleep is a biologically driven need of a child, and as discussed above, children may have biological preferences as to when they sleep. However, children have limited control over their own sleep choices; children’s sleep is ‘interpreted by cultural values and beliefs of the parents’ (Jenni & O’Connor, 2005:205). Wiggs (2007) argues that subtle social changes in Western society can in time lead to changes in accepted children’s sleep ‘norms.’ A parent and child’s judgement of sleep duration and practices will be influenced by both societal norms and personal values, which are susceptible to variations across generations and cultures. Over the last few decades, children’s sleep has been influenced by changes in parental lifestyles, attitudes to sleep and expectations of children’s sleep (Acebo, et al., 2005). Giannotti and Cortesi (2009) identify three levels of cultural influence on children’s sleep: intrapersonal development, family socialisation, and interaction within a larger societal framework.

Information about children’s sleep culture is scant; mostly relating to co-sleeping and bedtime ritual (Jenni & O’Connor, 2005). Separate rooms for children in Western countries, such as the USA, Germany and Britain, is understood to reflect these societies’ value of autonomy (Wolf, 1996), and is viewed as a form of ‘independence training’ (Morelli, Oppenheim, Rogoff, & Goldsmith, 1992). It is only in industrialised Western society that sleep is viewed as a ‘private’ affair and co-sleeping is generally considered indicative of sleep problems. However, this is not always the case and high rates of co-sleeping, more than 60% of children, can be found in the highly industrialised and modern Sweden (Giannotti & Cortesi, 2009). In the USA, up to 70% of African American children, 21% of Latino children and

less than 10% of middle class Caucasian children co-sleep, illustrating considerable variation in custom between ethnicity and geographic area (Giannotti & Cortesi, 2009). Co-sleeping is a common practice in Japan, Italy, and African-American families and has been found to reflect society's value of interpersonal independency (Caudill & Plath, 1966; Jenni & O'Connor, 2005), and provide physical proximity and emotional closeness (Giannotti & Cortesi, 2009). For example, a study in the USA, in relation to White Americans, African Americans and Latino Americans, concluded that differences in sleep location might reveal culturally guided parental practices, as opposed to different sleep cultures being employed to meet parents' child development goals or sleep location being determined by socio-economic conditions. Parent-child relationships are highly valued in Latino culture and by cosleeping with children parents are able to transmit this value system across generations. Likewise, the relationship between African American siblings is greatly esteemed; room sharing between siblings is provided as an explanation as one way in which African American mothers can encourage the bond between siblings (Mindell, Sadeh, Wiegand, How, & Goh, 2010).

The consistency of bedtime rituals or routines in Western societies is also regarded as a facilitator of children's developing ability for self-governance. Bedtime rituals provide parent-child interaction at bedtime and are designed to provide children with reassurance, such as having a bath, going to bed and reading a story whilst holding a transitional object, leading to a gradual attenuation of external stimuli in the environment (Giannotti & Cortesi, 2009). A recent multinational study found that parents in the UK were most likely to implement a bedtime routine most evenings at 80%, which compared to parents in India who were least likely at 40% (Milan, Snow, & Belay, 2007). Bedtimes varied in the sample by almost three hours and total sleep duration by 101 minutes, revealing the degree of variation in cultural children's sleep practices.

Cultural norms determine what is 'problematic sleep behaviour' and what is 'normal sleep behaviour' (Jenni & O'Connor, 2005) by influencing parental and healthcare

providers' expectations of children's sleep and perceptions of sleep problems (Mindell, Sadeh, Wiegand, et al., 2010). In a study of cross-cultural differences in the first three years of a child's sleep in predominantly-Caucasian countries (including the UK) and predominantly-Asian countries, parentally perceived sleep problems were present in all 17 countries, ranging from 10.1% in Vietnam to 75.9% in China. Parents of children in predominantly-Asian countries were almost twice as likely to consider their child to have a sleep problem as those from predominantly-Caucasian countries, 51.9% compared to 26.3%. It is not possible to ascertain whether reported differences in perceived problems reflect actual differences in children's sleep problems (Mindell, Sadeh, Wiegand, et al., 2010). Children who slept in their own room had a faster sleep onset, obtained more sleep, demonstrated less night waking behaviours and were considered by their parents to have less sleep problems than children who shared a room or a bed. The reason for this might be explained by parental behaviour rather than the sleep location of children, such as parental presence when falling asleep (Mindell, Sadeh, Wiegand, et al., 2010) and reduced parental awareness when the child is in another room. A study of parental perceived sleep problems in the USA found that White American mothers were more likely to perceive a sleep problem with their child than African American or Latino mothers (Mindell, Sadeh, Kohyama, & How, 2010). A possible explanation for differences in parental perception in both of the above studies is variation in cultural expectations of children's sleep and mismatched parental expectations and child sleep behaviour. This might be particularly true where expectations for self-regulation and independence are high (Milan, et al., 2007). Research has found that as children become older, parental expectations are higher and parents are less tolerant of sleep disturbances. For example, a study by Gaylor, Burnham, Goodlin-Jones and Anders (2005) found that parents were generally correct (there was a high level of agreement between parents' observations and research criteria) when reporting that children did not have a sleep problem. However, parents of children aged three and four years were more likely than those of infants to suggest that there was a sleep problem with their child's sleep when the research criteria suggested that the observed behaviour was within the proposed normal range of sleep-wake

behaviours. Research suggests that most paediatric sleep problems, such as bedtime resistance, daytime sleepiness, sleep deficit and night time waking, are common to both Western and Eastern cultures (Owens, 2005), regardless of whether cultures employ sleep hygiene.

Western and Eastern sleep cultures have many differences but both have been affected by technological changes, such as television, computers, video games and electronic media devices. For example, a recent review of 36 studies across both Western and Eastern countries relating to the sleep of children aged five to 17 years concluded that delayed bedtime and shorter sleep duration were associated with the use of media devices, especially where children have access to media devices in their bedrooms (Cain & Gradisar, 2010). The means by which media devices disrupt children's sleep may be numerous; such as lessening other healthy sleep practices, and causing psychological arousal that affects the circadian rhythm and melatonin levels through exposure to bright lights (Cain & Gradisar, 2010). A study by Owens and colleagues (1999) found that television watching at bedtime caused a number of sleep issues in young children, such as bedtime resistance, delayed sleep onset, sleep anxiety and short sleep duration. The study concludes that a television in the bedroom may be a significant contributor to children's sleep problems.

Both Western and Eastern cultures have seen an increase in competition for academic achievement, school and work places, which has emerged as a common reason for insufficient sleep, providing 'some degree of 'homogenization' across cultures, especially in urban areas' (Milan, et al., 2007:202). It can also be argued that most cultures have experienced a change in family structures and lifestyles, and that divorce, step-families, lone families, and working parents has impacted upon children's sleep practices (Williams, Lowe, & Griffiths, 2007).

## 2.8 CHILDREN'S SLEEP AND THE FAMILY

Sleep has been described as 'an embodied state of vulnerability...closely bound up with issues of privacy and trust, intimacy and taboo' (Williams, et al., 2007:12), illustrating the close family nature of sleep. From an evolutionary perspective, 'safety' was a necessary requirement for sleep onset when ancestral humans were under threat from nocturnal hunting carnivores. Social and family bonds were essential fundamentals in the evolution of sleep patterns and enabling long night sleep duration without vigilance (Owens, 2005). It can be argued that families' sleeping arrangements continue to influence social bonds and that children's sleep is affected by the family context, such as the emotional climate (Dahl & El-Sheikh, 2007).

Parental warmth has been found to reinforce young children's feelings of safety, thereby promoting sleep onset. It has also been found to result in longer sleep duration in young children (Dahl & El-Sheikh, 2007). On the counter side, parental stress has been found to have a negative impact upon children's sleep (Dahl & El-Sheikh, 2007; Milan, et al., 2007; Williams, et al., 2007; Worthman & Brown, 2007), which can have additional negative impacts upon children's wellbeing. For example, a study of children in the USA found that sleep duration and quality was disrupted by a child's insecurity regarding marital conflict in the home, which in turn impinged upon academic performance in American children aged eight and nine years old, with particular reference to low SES children and African American children (Adam, Snell, & Pendry, 2007). A Swedish longitudinal study of children at the age of four, eight, 12 and 16 years also found that children who experienced sleep disturbances had a higher incidence of marital stress in the home, which often ended in divorce, or a parent with nervous or mental health problems, or alcoholism (Klackenberg, 1982). A study in Australia found an association between disturbed maternal sleep during pregnancy and later childhood sleep problems. It also relates maternal distress and depression as causative factors in children's sleep problems (Armstrong, O'Donnell, McCallum, & Dadds, 1998). Similarly a sample of 6,000

twins in the USA concluded that maternal depression was linked to sleep problems in preschool children. The study also measured family disorganisation, via the Chaotic Hubbub and Order Scale (CHAOS) comprising six items such as ‘we are usually able stay on top of things’ (1 = definitely untrue, 5 = definitely true), and found that a high level of family disorganisation was strongly correlated with poor sleep and anxiety in preschool children (Gregory, Eley, O'Connor, Rijdsdijk, & Plomin, 2005).

It is difficult to surmise whether problems such as maternal depression is influenced by a child’s sleeping problem or whether maternal depression influences the mothers’ behaviour toward the child triggering the sleep problem (Zuckerman, et al., 1987). It is also possible that depression affects the mothers’ perception of their child’s sleep. It can certainly be argued that a child’s sleep can negatively impact upon the family context. For example, a child’s sleep problem can result in a reduction of maternal and paternal sleep duration and quality, increasing stress and fatigue (Dahl & El-Sheikh, 2007), depression and feelings of isolation (Swinburne, 2005). Children’s sleep can also have a detrimental effect on parents’ relationships. One study exploring children aged eight to 36 months found that 37% of parents interviewed had experienced serious arguments about their child’s sleep, whilst 2% of parents felt that their child’s sleep had primarily contributed to their separation (Chavin & Tinson, 1980). Parental violence has also been associated with children’s sleep problems (Kerr & Jowett, 1994).

## **2.9 PARENTING BEHAVIOUR**

Parents determine a number of sleep choices for their child. These are often governed by various environmental factors, such as family size, available space and climatic conditions (Jenni & O'Connor, 2005), but they are also entrenched in a set of childrearing behaviours that reflect parents’ values of ‘good parenting’ (Wolf, 1996:377). Parents believe that certain sleep choices provide their child with a better opportunity to succeed in the socio-cultural niche in which they were born by

practicing 'normal' sleep (El-Sheikh, Buckhalt, Keller, Cummings, & Acebo, 2007). For example, sleeping primarily at night. Parental beliefs are frequently shaped by culturally embedded books on child rearing, which may not contain accurate or up-to-date information regarding children's sleep (Milan, et al., 2007).

Parental characteristics have also been found to impact upon young children's sleep. For example, the socio-economic background of parents has been found to influence attitudes toward children's sleep. Children of parents from higher socio-economic backgrounds have less variability in their sleep routines being more likely to have a set bedtime and wake time (Acebo, et al., 2005). However, these children may not have the opportunity to extend their sleep duration to meet their sleep requirement, as they have a fixed schedule, which may include a later bedtime and an earlier rise time if both parents work (Swinburne, 2005). Children from lower socio-economic backgrounds have been found to spend longer periods of time in bed, but experience shorter continuous sleep bouts, have more nocturnal wakes and lower sleep efficiency (Acebo, et al., 2005). Later bedtimes for children and less sleep has been found to be loosely associated with less parental education and income variables (Owens, 2005). Bedtime behavioural problems are more likely to be found in children from lower socio-economic backgrounds (Crabtree et al., 2005). It is thought likely that poorer sleep efficiency and behavioural issues relate to crowded sleep conditions and a lack of sleep education and sleep hygiene (Acebo, et al., 2005).

A study by Adam et al (2007) found that higher levels of parental control related to more desirable child sleep behaviours. This impact was greater during weekdays than on weekends, which may be due to parents providing children with greater autonomy over their sleep at weekends. School start time and the distance travelled to school had a large effect size on weekday sleep due to earlier rise times with no adjustment to bedtimes, suggesting the importance of parental regulation of early bedtimes on weekdays. Time spent at meals was found to relate to greater weekday sleep, which may be due to a higher level of structure in the home and the important

social function of mealtimes for families, 'serving communicative, symbolic and affective functions within the family' (Adam, et al., 2007:17). Iglowstein (2003) proposes that a decline in children's sleep duration since the 1970s in a Swiss longitudinal study is due to a 'more liberal parental attitude towards evening bedtimes', whilst wake times remain fairly constant (Iglowstein, et al., 2003:306). Davis, Parker and Montgomery (2004b) argues that sleep problems in preschool children are often found to be a consequence of poor limit setting on the behalf of parents, such as inconsistent bedtimes or requests for another story or television programme.

As discussed in point 2.7, parents are often responsible for determining whether their child's sleep behaviour is 'normal' or 'problematic,' which is related to expectations of their child's sleep. Armstrong et al (1998) argue that two factors contribute to problems with a child's sleep pattern: the actual sleep of the child, and the family's reaction to their sleep behaviour. Parental behaviour, such as limit setting, is considered a key factor in infant and children's sleep problems (Ferber, 1994). A study by Johnson and McMahon (2008) investigated whether parental hardiness would promote preschool children's self-regulation over bedtime routines and nightwaking, including when faced with opposition, thereby encouraging optimal sleep. A parent that is less hardy may submit to their child's resistance to reduce stress. Hardiness is described as 'an individual's ability to manage challenges effectively by transforming stressful experiences into opportunities for learning and personal development despite anxiety' (N. Johnson & McMahon, 2008:766). The study concludes that less parental hardiness is indicative of problematic sleep related cognitions and child sleep behaviour. A positive relationship also exists between bedtime interactions and child sleep behaviour, suggesting that the more interactive a parent is at bedtime the more likely a child is to experience sleep problems. Parental sleep related cognitions and behaviour are found to be determinant of problematic children's sleep, rather than a child's temperament. The authors argue that sleep interventions should target negative perceptions of control and efficacy to promote more effective parenting.

A parenting style that encouraged responsibility in children in terms of daily routines and their bedtime was also found to result in healthier sleep behaviour (earlier bedtimes, less sleep variation and greater sleep duration) in a study of school children aged eight to eleven years in the US by Spilsbury et al (2005). The authors conclude that paediatricians should encourage parents to promote maturity and self regulation at bedtime whilst enforcing family rules.

Hale and Hale (2010) make a case that behavioural and pharmacological sleep interventions are a 'quick fix' for sleep issues and that restricted autonomy is a primary cause of poor sleep. Autonomy is defined as having control over aspects of one's life and having life projects that provide a purpose to sleep, such as succeeding in family life or a career. The sleep of individuals possessing a low level of autonomy is often impacted upon by external or heteronomous factors, such as stress, lack of space and family disorganisation. Sleep is interpreted as 'a consequence of something other than choice' (Hale & Hale, 2010:3). For sleep interventions to be effective they argue that more than general advice on sleep hygiene is needed, as such recommendations treat sleep as an active choice, addressing the symptoms rather than the causes of poor sleep and poor health, often synonymous. Potential interventions should promote autonomy and engage and empower individuals. This debate concerns adult sleep, but is an interesting argument that could also be applied to parenting behaviour and children's sleep. As asserted by Johnson and McMahon (2008), hardy parents that maintained control at bedtime and provided children with autonomy over their own sleep were more likely to have children who did not experience sleep problems than parents without hardiness. An intervention targeting children's sleep might be more successful if it addresses more than simply what constitutes recommended sleep practices, but empowers parents, providing them with a range of parenting behaviour techniques and the self efficacy to accomplish them in order to implement recommended sleep practices. Children might also benefit from having a greater sense of self regulation over their own sleep and bedtime practices. When children are provided with

autonomy over their sleep they will not necessarily make recommended sleep choices, as discussed by Adam et al (2007) above in relation to weekend sleep. If an intervention targeted children directly and educated them with regard to recommended sleep practices they may instigate these as sleep choices. If children are determining their own sleep practices from a young age there may also be less opposition between parent and child at bedtime. In addition, it could be hypothesised that children who learn to make recommended sleep choices might be more likely to continue to do so as they mature and their bedtime behaviour is no longer influenced by a parent.

## **2.10 CHILDREN'S SLEEP PERSPECTIVES**

There are very few data relating to children's own perspectives on sleep but a study by Williams, Lowe and Griffiths (2007) amongst children aged five to 15 years old identified a number of common themes with regard to sleep. Children identified staying up late as a reward for 'good behaviour' and associated being sent to bed early as a consequence of 'bad behaviour'. One possible reason for this association is that going to bed 'is a cessation of opportunity for pleasurable activities enjoyed during wakefulness and, further, remaining awake for longer may also be construed as a sign of maturity' (Wiggs, 2007). This might result in the tradeoff; inadequate sleep, being viewed by children as a worthwhile sacrifice. Sleep aids were found to be most common when sleeping in a less familiar environment, acting as 'transitional objects' (Winnicott, 1958) between sleep and wakefulness, promoting a feeling of safety. Examples were provided by children of evening discussions concerning staying up later at bedtime. Williams et al conclude that 'children are active constructors and negotiators of their sleeping as well as their waking lives within families, including the when, where, what and with whom of sleep' (Williams, et al., 2007:12). Owens (2005) also argues that children's individual characteristics, social relatedness and understanding of their own individual culture will influence their sleep practices.

A study in the UK by the BBC programme Newsround surveyed 1,000 children aged nine to 11 years and found that half of the sample reported that they would like more sleep and were tired on a daily basis. More than half of the sample had a television in their bedroom, and watching television and playing computer games was cited by the children as their reason for not going to bed earlier (Cavendish, 2010).

Parents influence many aspects of a child's sleep but children are not passive and contribute to shaping their own sleep practices and environment. Despite this, preschool and primary aged children in the UK have yet to be part of an education intervention or social marketing intervention concerning sleep practices.

### **2.11 SLEEP EDUCATION**

In 2009 the Sleep Council raised a 'Teach Sleep' petition for 10 Downing Street calling for sleep education to be taught in schools. The petition was supported by findings from a Sleep Council study that 73% of parents surveyed thought that importance of getting a good night's sleep should be covered by schools. The Sleep Council highlight that the Government's Change 4 Life social marketing campaign concerning healthier living launched in 2009 does not incorporate any mention of sleep (The Sleep Council, 2009)

Eight leading paediatric sleep researchers recently published an editorial in Sleep Medicine Journal entitled 'Give children and adolescents the gift of a good night's sleep: A call to action' (Adam, et al., 2007). Here they argue that sleep education on recommended sleep practices and sleep disorders should be provided to 'children, their parents, health care providers, educators, economic leaders...and public policy makers' (Mindell, Owens, et al., 2011:203). This would improve sleep now and in the future, preventing the development of sleep problems and resulting in early treatment. They contend that sleep should be incorporated into school curriculum.

It has been argued that all children should receive sleep education that identifies good sleep hygiene for the range of health benefits associated with sleep duration as discussed earlier (Crabtree, et al., 2005; Davis, et al., 2004a). The importance of sleep for school performance has also been raised as a subject that should be publicised to schools, teachers, parents and children (Mindell, Owens, et al., 2011). Sleep Scotland launched a ‘Sound Sleep’ teaching pack for teenagers following a successful pilot of the project. It provides information on the importance of recommended sleep practices, such as having a quiet bedtime routine and a set bedtime and avoiding using electronic devices, such as the television and mobile phones before bed (Sleep Scotland, 2012). Another recent initiative included moving school start time from 9am to 10am in a Tyneside comprehensive school, which has demonstrated promising preliminary academic results as well as being favourably received by students (BBC News, 2010). This followed the success of a study in Rhode Island, where a half an hour delay in school start time resulted in increased sleep duration, and significantly improved self reported alertness, mood and health (Dewald, et al., 2010).

There have been a number of social marketing interventions in the USA to provide parents and children with sleep education, the largest being the National Heart Lung and Blood Institute’s (NHLBI) ‘Sleep Well, Do Well’ with Garfield the Cat, which was launched in 2002 and ran until 2009. This was aimed at educators, parents and children aged seven to 11 years, and highlighted the importance of children in this age group getting at least nine hours sleep a night. It was supported by an internet site with games, an activity book and competitions, providing children with the opportunity to become a ‘Star Sleeper.’ Findings are not publicly available for this intervention. Sleep education interventions for adults have been implemented in a number of countries but their success has been difficult to measure.

## 2.12 SLEEP INTERVENTIONS

This chapter has established the important role parents play in determining their child's sleep environment and practices as influenced by their cultural norms. Sleep interventions designed to address children's sleep issues need to consider cross-cultural findings about differences in perceived parental sleep problems (Owens, Belon, & Moss, 2010). Studies have suggested that sleep interventions shouldn't focus solely on children's sleep but should incorporate interventions with parents regarding the nature and meaning of their concerns for their children's sleep as well as providing education on typical alterations in children's sleep biology (Mindell, Sadeh, Wiegand, et al., 2010). Parenting behaviours that impact upon the duration and quality of children's sleep, such as parental presence during sleep onset, could also be addressed via parental interventions (Milan, et al., 2007).

Nearly all studies determining the success of behavioural interventions have concerned some form of sleep disorder; very few studies to date have involved sleep practices in the 'normal' paediatric population. This study is primarily concerned with the 'normal' paediatric population, but is alert that a proportion of this (roughly 25% - Owens, 2008) will be preschool children experiencing some kind of sleep disorder. Therefore, an intervention must incorporate relevant information and behavioural interventions for both the general population and children with sleep issues.

Owens, Palermo and Rosen (2002) reviewed behavioural management strategies of children's sleep problems. They highlight the important role parents play in the success of interventions both to reduce drop out rates and to ensure that interventions are implemented consistently; otherwise their effectiveness will be diminished. Four reasons are cited for low parental compliance: parental exhaustion or sleep deprivation, parental depression or mental illness, lack of parental acceptance of an intervention, and lack of parental understanding of an intervention. It is difficult for a behavioural intervention to address the first two points but there is

potential to resolve the second two points. Parental acceptance of an intervention is necessary if the intervention is to be initiated and adhered to. Numerous studies have reported low levels of parental acceptance in relation to extinction based interventions, where parents are required not to respond to their child (C. M. Johnson, 1991; Rickert & Johnson, 1988). Lack of parental understanding of an intervention can result in it not being implemented properly or consistently, which can in turn exacerbate a sleep disorder. Both of these issues could be addressed by involving parents in the design of interventions. This would ensure that parents are both comfortable with the behavioural strategy required of them during an intervention and that they fully understand it. Parental involvement at each stage of the design of the intervention would resolve any potential issues as they arose and help devise the most effective communication strategy to ensure parental comprehension. One way of involving parents in each stage of designing and evaluating an intervention in a group is participatory research.

### **2.13 PARTICIPATORY RESEARCH**

Participatory research has three main characteristics; it involves co-construction of knowledge between the researcher and participants, the formation of relationships between the researcher and participants during the design, execution and dissemination of a project, and should result in individual, collective and/or social change through a process of self-critical awareness and reflection (McIntyre, 2008). Participatory research provides a methodology that enables the development and assessment of a community health intervention with the community's involvement, thereby empowering the community to create social change (Kelly, 2005). In short, participatory research is 'knowledge for action' (Scott & Shore, 1979).

Participatory research projects are very variable and there is no given structure for their design, implementation or evaluation, and equally participatory research is not influenced by one theoretical framework but incorporates a number of them (McIntyre, 2008). Not all participatory research includes the implementation or

evaluation of projects; it is possible for participatory research to be a consultative process in the planning stages of a project, for example, policy recommendation within a concerned group (Kelly, 2005). This is partly due to the time consuming nature of a participatory research project; ‘goals of empowerment and action can’t always be obtained on a set schedule’ (Kelly, 2005:70).

Participatory research will enable formative research with parents, and parents will actively design, implement and evaluate interventions, addressing many of the cultural issues discussed above and ensuring that interventions are appropriate, comprehensive, understandable and appealing to the local community. Participatory research will be employed in this study to design two social marketing interventions to target parents and children. Issues arising from the application of participatory research will be discussed in full in Chapter 5.

## **2.14 SOCIAL MARKETING**

Social marketing is the design, implementation, and control of programmes seeking to increase the acceptability of a social idea or message in target groups, which will ultimately lead to a change in behaviour (P. Kotler, 1982). Social marketing arose in the 1960s combining knowledge gained in social science disciplines, such as anthropology and psychology, with commercial marketing techniques (P. Kotler & Zaltman, 1971). Social marketing is a more comprehensive alternative to technologies seeking behaviour change, such as health promotion, health education, social advertising and public communications to name a few. Social marketing combines the alternatives these approaches offer; the education approach, the persuasion approach, the behavioural modification approach and the social influence approach (Andreasen, 1995).

Social marketing is a key component of the Government’s 2004 White Paper on Public Health, which suggests that social marketing is employed to both reduce the attractiveness of unhealthy recommended behaviour and to increase the appeal of

healthy behaviour (Department of Health, 2004). One issue concerning social marketing is classifying which interventions qualify as a social marketing campaign. The National Social Marketing Centre (NSMC) states that interventions have to satisfy six criteria; behaviour change, consumer research, segmentation and targeting (of the audience), incorporate the four 'p's (product – the idea/problem being marketed, price – what must be done to address the idea/problem, which may involve a tangible or intangible cost to the individual, place – where the idea/product reaches the individual, for example, the use of doctor's surgeries and community centres to distribute materials and promotion – the use of advertising and the media to promote the idea/product) exchange (one behaviour must be being replaced by another), and competition (addressing the alternative behaviour strategies) (Gordon, 2006).

Social marketing is an appropriate method for changing behaviour when there are numerous voices or messages. Children's sleep is a subject upon which there is a wealth of information and opinions are provided to parents from most sources: family, friends, media, celebrities and professionals, considerable amounts of this information are contradictory. A social marketing intervention can provide one source of independent, consistent and factual information to motivate behaviour change.

Social marketing has been chosen over straight forward sleep education interventions for this study as education primarily concerns promotion and does not provide the same focus on maintaining a behaviour change (P. Kotler, Roberto, N., & Lee, N., 2002). Education is most effective when it requires one small change in behaviour, where the benefit is apparent and the effort is minor, or a behaviour that can be directly exchanged for another with no additional cost to an individual (Grier & Bryant, 2005). For example, the Sudden Infant Death (SIDS) campaign that educated parents to place a child to sleep on their back rather than their front. Practising recommended sleep requires effort and involves costs. For example, a parent might have to sacrifice a proportion of their time to establish a bedtime

routine, and it may be difficult to implement the routine if the child is resistant. A child might have to give up watching a favourite television show or playing with older siblings in order to establish a bedtime routine and have an earlier bedtime. Examples of social marketing campaigns include breastfeeding promotion, smoking cessation and healthy lifestyles, for example, diet and physical activity. Such campaigns require a close study of the socio-cultural context of change and the people whose behaviours are being targeted for change, highlighting the important contribution anthropology can make (Van Willigen, 2002).

Social and medical anthropology can provide a social, cultural and historical perspective that promotes understanding of how and why people live as they do (Cameron, Frazer, Rampton, & Kay, 1992), what kinds of new action will make sense to them, and how these can be made more appealing. Social marketing requires a 'strong commitment to the native viewpoint, and an appreciation of respecting people's values, norms and beliefs' (Van Willigen, 2002:142). An underpinning philosophy of social marketing is that individuals only change behaviour when they believe that it is in their interests to do so (Andreasen, 1995).

Social marketing recognises that behaviour change originates from the individual and is often a slow development, so may originally focus on non-behavioural objectives, such as increasing knowledge or attitude change (Andreasen, 1995). A review of social marketing interventions intended to increase physical activity found that all studies included behaviour change as an outcome, whilst only a small number incorporated knowledge or psychosocial outcomes (Gordon, 2006). The review concludes that initiating behaviour change in the course of one campaign is a difficult thing to achieve and demonstrate, but such interventions can change levels of knowledge and attitudes and perceptions regarding the subject, even when a behaviour change is not present. A social marketing campaign can make people more disposed to change, which a follow up intervention can build upon (Gordon, 2006). It may be particularly important to measure knowledge, self efficacy and behaviour with regard to sleep, as data demonstrating the relationship between sleep

knowledge, sleep practices and sleep quality is not as clear as might be expected. A sleep education study with adults in Australia found a relationship between sleep knowledge and sleep practices in the general population, but not for those experiencing disturbed sleep. It also demonstrated a relationship between sleep practices and sleep quality for the entire sample. Knowledge of recommended sleep behaviour related to sleep quality, but not significantly once controlling for age and gender (Gallasch & Gradisar, 2007). This suggests that knowledge of recommended sleep practices does not always result in their implementation and therefore better quality sleep. The authors conclude that further research into implementing the knowledge of recommended sleep practices is needed to further evaluate the impact of sleep education. This study will endeavour to ascertain parents' knowledge of recommended sleep practices, the sleep practices they implement for their children and how they subjectively assess their child's sleep.

A problem associated with the evaluation of social marketing interventions is that they are often multi-component, for example, an intervention concerning obesity prevalence amongst African-American girls 6-8 years of age took place as an after school club and targets both the girls and their parents, and physical activity and diet, via different materials and messages (Story et al., 2003). This makes it almost impossible to determine levels of success for each strand of the programme or to assess if messages were lost when competing against one another via different audiences or components (Gordon, 2006). This study will attend to this issue by addressing two target audiences: parents and young children separately, concerning a concise and clearly defined topic, recommended sleep practices.

The duration of social marketing interventions has been variable. Evidence suggests that the longer time period an intervention runs for, the more opportunity there is for it to take effect, although campaign duration ranges greatly depending on the topic area (Andreasen, 1995; Gordon, 2006). Follow up periods for social marketing interventions involving physical activity ranged from one month to two years (Gordon, 2006). Due to the time constraints of this study, including the initial

participatory research regarding the social marketing interventions, the maximum feasible duration for an intervention was six months, with a follow up period of six months. This would provide the target audience with the opportunity to become familiar with the intervention materials and allow sufficient time for the intervention messages to have penetrated parents' consciousness and aroused their interest.

There are certain models that social marketing interventions may follow that are designed to lead the target audience from unawareness to behaviour change. A transtheoretical model concerns intrapersonal (individual characteristics that influence behaviour, such as knowledge, attitudes, beliefs and personality traits) intentional behaviour change and is currently the most utilised (Horwath, 1999). It leads the audience through five key stages; pre-contemplation (unaware or under informed on issue), contemplation (aware of benefits and drawbacks, a stage of behavioural procrastination), preparation (intending to take action), action (overt modifications to behaviour) and maintenance (working to continue the action). Andreasen (1995) highlights four elements in the contemplation stage, he terms the 'BCOS factors': benefits (motivators), costs (demotivators), others (either motivators or demotivators) and self-assurance (perceptions of opportunity and ability). Social cognitive theory at the interpersonal level (including family, friends and peers that provide social identity, support and role definition) states that there are three main factors that affect the likelihood of a person modifying a health behaviour, which are self-efficacy, goals and outcome expectancies. It was likely to be necessary for the intervention's success to address these issues. However, the formation of interventions and messages was determined by participatory research with parents, which is discussed in detail in Chapter 5.

## **2.15 CONCLUSION**

This chapter has examined the physiology and behaviour of preschool children's sleep and placed it in a cultural context, debating the role of the family, parent and child in making sleep choices. The health outcomes associated with short sleep

duration have been discussed, in relation to both the child and the family. Common children's sleep problems, both behavioural and biological, have been examined and the following chapter will go on to discuss behavioural sleep interventions in more detail via a systematic review.

## **CHAPTER 3: SYSTEMATIC REVIEW**

### **3.1 INTRODUCTION**

Behavioural sleep interventions have been designed to address young children's sleep disorders and therefore increase sleep duration as discussed in the previous chapter. A number of reviews have concentrated on children's sleep disorders, the choice of children's behavioural sleep interventions and their efficacy (see Kerr & Jowett, 1994; Kuhn & Elliott, 2003; Kuhn & Weidinger, 2000; Meltzer & Mindell, 2004; Mindell, 1999; Mindell et al., 2006; Mindell & Meltzer, 2008; Moturi & Avis, 2010; Ramchandani, Wiggs, Webb, & Stores, 2000; Tikotzky & Sadeh, 2010).

Mindell et al (2006) identified 52 studies in their systematic literature review that focused solely on behavioural treatments in children under five years old without a primary medical or psychiatric condition. The review found that 94% of studies had been successful in improving bedtime problems and reducing night waking, 80% of which were still effective at a three to six months follow-up. Ramchandani et al (2000) included nine studies in their systematic literature review of settling problems and night waking in children aged five years or under. The studies were randomised controlled trials with a placebo, waiting list or other intervention as a control, which were not focused on children with learning or physical disabilities. Four of the studies were pharmacological, four were behavioural and one was a non-directive educational approach. The behavioural studies included positive routines, extinction or systematic ignoring, modified extinction, graduated extinction, scheduled awakening, an educational booklet and sleep programmes (individually tailored behavioural programmes). All behavioural treatments were found to be more effective than no treatment, whilst extinction was found to produce clinically useful effects quickly. All of the behavioural interventions were still effective at a six-week follow-up. The review concludes that no single behavioural intervention was more effective than the others and choice of treatment should be based on 'individual families' preferences and circumstances, as these will affect their

willingness and ability to adhere to the chosen treatment' (Ramchandani et al, 2000: 212).

### **3.2 THE SYSTEMATIC REVIEW**

The previous chapter highlighted the importance of both parents and children in determining sleep culture. Families are central in the success of sleep interventions, as nearly every intervention depends upon changes being implemented in the home. As argued by Ramchandani et al (2000), the efficacy of a given treatment depends on how well that treatment fits into a family's sleep culture. Therefore, a logical step to maximise treatment fidelity and minimise attrition would be to consult with families prior to, and during, the design and delivery of any sleep intervention. The involvement of parents would help to ensure that interventions are clear, appropriate and appealing to other families. If it is not possible to engage families in the design of interventions then a study could include an evaluative component with the sample to drive the methodology of future studies. Previous reviews have not reported on the role families have played in the design phase of behavioural sleep interventions. The primary aim of this review therefore is to assess the extent to which families have been consulted during the development of behavioural sleep interventions for preschool children.

Treatment fidelity, which for the purpose of this review is interchangeable in definition with treatment integrity, or treatment compliance, measures how accurately an intervention is reproduced, which ensures that outcome data are the result of an intervention and not by chance or some other occurrence. It is therefore a critical measure of internal validity. A review by Owens, France and Wiggs (1999) of behavioural and cognitive-behavioural interventions for sleep disorders in infants and children highlighted that future research on all interventions addressing children's sleep disorders should incorporate a measure of parental compliance. I argue that this recommendation should be extended for any intervention that

concerns sleep duration. The second goal of this review is to examine whether treatment fidelity is measured in children's sleep interventions.

Recording attrition in interventions and the explanation for participants' withdrawal from studies is also of great importance to understand the factors affecting participation of families in behavioural sleep intervention studies. This review will explore rates of attrition in behavioural sleep intervention studies for preschool children and the reasons for attrition.

Reviews to date focus on children with problematic sleep. A final area of interest is whether there are any sleep interventions that concern the 'normal' paediatric population, ie. that are not specific in targeting children identified as having problematic sleep.

The systematic review described in this chapter was undertaken in January 2012 and addresses the following research questions.

### ***3.2.1 Research Questions***

1. To what extent are families consulted with regard to the design, delivery and evaluation of behavioural sleep interventions for preschool children?
2. Is treatment fidelity measured during preschool child behavioural sleep interventions, and how?
3. What factors impact upon attrition in preschool children's behavioural sleep interventions?
4. Are there any behavioural sleep interventions that concern the 'normal' population, rather than targeting preschool children with problematic sleep?

### ***3.2.2 Inclusion Criteria***

Behavioural intervention or education studies that aimed to increase preschool children's sleep duration were included. Studies concerning developmentally normal children aged two to five years were eligible for inclusion, also those relating to children with an identified behavioural sleep disorder, such as night waking, and those who had not been identified with a sleep disorder. Studies must have been published in the English language in the period between 1990 and 2011.

The systematic review incorporated both experimental studies, such as randomized control trials (RCTs) and non-RCTs, and non-experimental studies, such as cohort, case-control and cross sectional studies. Qualitative studies were also included.

### ***3.2.3 Exclusion criteria***

Studies concerning children with a developmental disorder (behavioural, medical, or physical) were excluded, or with a non-behavioural sleep disorder, such as parasomnias or nightmares. Pharmacological interventions were excluded from the review. Studies involving fewer than five children were not included.

### ***3.2.4 Search Protocol***

A search of Ovid Medline, CINAHL, the Cochrane Library, Embase, EBM Reviews, Pubmed Central and Web of Science using the following terms: (1) "toddler, infant, reception, playgroup, child\*, early years, kindergarten, nursery" AND (2) "sleep\*, nap" AND (3) "duration, length, amount, bedtime, bed-time, bed time" AND (4) "intervention, treatment, trial and RCT". An initial search of Pubmed Central incorporated wider search terms, including waking, bout, episode, period, assessment, therapy, program and evaluation. The search terms selected for the systematic review were the ones that most frequently returned relevant articles; removal of other search terms helped filter irrelevant articles. As stated in 3.2.2

Inclusion Criteria, the systematic review wished to identify studies that concerned the lengthening of preschool children's sleep duration and the search terms reflect this. Sleeplessness, settling, night waking or wakefulness were not incorporated as search terms as the systematic review was not concerned with identifying articles that addressed preschool children's sleep issues but rather the 'normal' preschool population. However, many of these studies were included in the search results because they also related to an increase in sleep duration or change in bedtime. The search strategy also ensured that a large number of studies related to sudden infant death syndrome were excluded by incorporating the term NOT (5) "sudden infant death syndrome, SIDS, cot death" in the search string. The search was restricted to papers published from January 1990 onwards as it was considered that a 21 year period would capture all relevant current interventions. English language was specified due to a lack of translation resources. Available abstracts were reviewed and papers retrieved or requested where the abstract was inadequate to make a judgement. The review incorporated studies involving a wider age range of children than two to five years as long as a study included at least one preschool aged child. This decision was made because the review primarily concerns the design, delivery and evaluation of studies that are appropriate for preschool children, not the efficacy of studies for preschool children. Where there was not enough information regarding the design, delivery and evaluation of interventions the authors were contacted to request further details. A study and design data extraction sheet was completed for all relevant studies tabulating related data. An extensive search of references and grey literature was not possible due to limited time and resources.

### ***3.2.5 Outcome measures***

- Parent consultation prior to, during and following the implementation of intervention
- Compliance with study treatment
- Attrition rate
- Duration of intervention

- Delivery method and by whom
- Cost of intervention

### **3.3 SUMMARY OF STUDIES**

Systematic searching and the retrieval of relevant full articles found 11 papers that matched criteria. Two papers relate to the same study, one of which is a one-year follow-up (Mindell, Du Mond, et al., 2011a: Efficacy of an Internet-Based Intervention for Infant and Toddler Sleep Disturbances; 2011b: Long-term Efficacy of an Internet-Based Intervention for Infant and Toddler Sleep Disturbances: One Year Follow-Up). Eight of the studies were based in the US, one study was based in Sweden and one in Australia. Table 1 illustrates key details of studies.

**TABLE 1: Summary of Identified Studies**

Lead Author	Year	Country	Age of Sample (years)	Size of Sample	Sleep Int. Type	Control Group	Int. Duration (Days)	Paid for Participation
Blunden	2011	Australia	0.5 - 5	33	Sleep Treatment Programme	No	35	No
Eckerberg	2004	Sweden	1.5 - 3	28	Graduated Extinction	Yes	28	No
High	1998	US	2 - 3	25	Reading as part of bedtime routine	Yes	1 yr	No
Martin	2011	US	0 - 3	1,850	Parenting Services	Yes	3 yrs	\$5
Mindell	2009	US	1.5 - 3	199	Bedtime Routine	Yes	14	\$150-\$200
Mindell	2011	US	0.5 - 3	264	Customised Sleep Programme (CSP) & Bedtime Routine	Yes	14	\$90-\$175
Mindell	2011	US	0.5 - 3	171	1 yr follow up to above	N/A	N/A	\$5
Mindell & Durand	1993	US	1.5 - 4	6	Graduated Extinction	No	49	No
Moore	2007	US	3 - 6	19	Bedtime Pass & Graduated Extinction	Yes	9	No
Reid	1999	US	1 - 4	49	Graduated & Standard Extinction	Yes	21	No
Wade	2005	US	4 - 5	5	Graduated Extinction	No	28	\$150

The ten studies include a number of different behavioural sleep interventions: graduated extinction (2), bedtime routine + graduated extinction (1), bedtime routine (1), bedtime pass program + graduated extinction (1), standard ignoring vs. graduated ignoring (1), internet based customised sleep programme (CSP) vs. CSP + three step bedtime routine (1), sleep treatment programme (1), parenting services (1) and reading as part of a bedtime routine (1). Seven of the studies involved a control group, the size of one was calculated via power analysis and four of which were age and gender matched.

The most frequently used measure of problematic sleep for participation in studies was parental identification of one or more adverse sleep behaviours occurring on three or more nights of the week, such as night waking, bedtime resistance or parental presence required in order to initiate sleep. One of the studies identified participants as presenting with Behavioural Insomnia of Childhood (BIC) (Blunden, 2011). Two studies concerned the 'normal' population where children had not been identified by their parents as having problematic sleep (High, Hopmann, LaGasse, & Linn, 1998; A. Martin, Barajas, Brooks-Gunn, & Hale, 2011). One study required mothers to identify children as having a sleep problem ranging from "small" to "severe," but not an apparent disorder, which was defined as more than three night wakings per night or being awake more than 60 minutes per night (Mindell, Telofski, Wiegand, & Kurtz, 2009). The study by Reid, Walter and O'Leary (1999) stated that whilst cases were self-referred on the basis of parental dissatisfaction, these same behaviours may be tolerable to many parents and therefore treatment would not be necessary.

The majority of studies are not specific to preschool children but are inclusive of a younger age band, particularly those with a large sample size. Preschool aged children are not as accessible as infants regularly attending clinics or children enrolled at school and therefore more diverse means of recruitment may be necessary. Two studies involved recruitment of children when accessing infant services: Martin et al (2011), a longitudinal study of parenting services that recruited children at birth and followed them for three years, and High et al (1998), a study distributing books via well-child visits concerning children aged 12 to 38 months. Four studies actively recruited participants by advertising in paediatricians' offices, distributing flyers, targeting local day care facilities and parent groups, and advertising in the press and parenting magazines. Two large studies recruited participants through the use of an independent market research firm utilising contact lists of parents of young children (Mindell et al, 2009; Mindell et al, 2011). Two studies involved the parents of children receiving referrals to a sleep clinic (Blunden, 2011; Eckerberg, 2004).

The most common outcome measure used in these studies was one or more sleep behaviours (eg. number and length of night wakings) via a sleep diary, a sleep questionnaire or an interview completed with parents. Other outcomes included children's behaviour, parenting scale and measures of parental health, such as, stress, depression, dyadic adjustment, marital satisfaction, mood status, well-being, sleep behaviours and additional changes identified following the intervention. Treatment fidelity and satisfaction were measured by a number of studies. Two studies provided objective measures of data collection: one study used audio recording and another video recording.

Interventions ranged in length from one week to three years, with a one week to four week baseline, and where applicable, a post-intervention follow-up ranging from four weeks to one year post-intervention. The study concerning parenting services (Martin et al, 2011) is a longitudinal study of children recruited at birth so did not incorporate a baseline or follow-up but gathered data at a number of points during the first three years of the participants' lives. The study by High et al (1998) on reading as part of a bedtime routine included comparison with a control group, where data were collected pre-intervention, rather than a baseline, and did not incorporate a follow-up. One other study involving a three-step bedtime routine by Mindell et al (2009) did not include a follow-up element.

The delivery of intervention instructions or information was chiefly through meetings between therapists or researchers and parents. A number of studies included role playing scenarios that might occur during the delivery of the intervention in order to prepare parents and build their confidence. In all of the reviewed studies it was the responsibility of parents to deliver the intervention independently in the home. Interventions were supported by written materials, such as handouts and treatment manuals for parents to take home and revisit. Five of the studies stated that therapists contacted parents or met with them again during the delivery of the intervention to discuss any problems or questions they might have

(Eckerberg, 2004; Reid et al, 1999; Blunden et al, 2011; Mindell & Durand, 1992; Wade et al, 2007).

All of the studies provided participants with the necessary materials to complete the study, such as bath time products for the three step bedtime routine and books for reading as part of a bedtime routine. One study paid parents \$150 (Wade, Ortiz, & Gorman, 2007), another \$200 (Mindell et al, 2009), and another between \$90 and \$175 for participation dependent on the number of visits parents made to the study site (Mindell et al, 2011). \$5 was paid for participation in a follow-up interview for reading as part of a bedtime routine (High et al, 1998), and \$5 was paid to parents participating in the one year follow-up for the internet based CSP (Mindell et al, 2011). One study states that parents were paying for treatment at a private sleep clinic (Blunden et al, 2011), whilst most of the other studies concerning problematic sleep provided free treatment in exchange for participation. Two studies were funded by the Johnson and Johnson Corporation and involved use of their products (Mindell et al, 2009; Mindell et al, 2011).

### **3.4 CONSULTING WITH FAMILIES**

#### ***3.4.1 Design and Delivery of Sleep Interventions***

From the ten identified studies, one was a sleep programme designed via a collaborative process between therapist and parent, which had the flexibility to be revised throughout the duration of the intervention (Blunden, 2011). This programme encouraged solitary sleeping in preschool children and was flexible in its implementation, providing parents with the leeway to attend their child as they wished with no restriction on picking up or comforting their child, as long as interactive behaviours gradually reduced over time. Parents were actively encouraged not to try and ignore their child's cries but to respond before parent or child became upset. The clinician discussed the criteria for 'upset' with each family, and barriers to success. The clinician met with the family three times over three

weeks prior to the commencement of the intervention. The third session included an individually written programme established around families' choices from the second session.

The designs of the majority of studies identified were established on previous research findings and researchers' expertise. For example, the recommendations to improve children's sleep provided by the customised sleep program (CSP) internet based study (Mindell et al, 2011) were founded upon empirical interventions that satisfy the American Academy of Sleep Medicine (AASM) practice parameters, and the authors' many years of clinical practice. The three step bedtime routine element of the CSP study also built upon the author's previous study, also included in the review, on bedtime routines, which did not involve parents in its design, delivery or evaluation (Mindell et al, 2009). A predetermined design still incorporated some consultation with parents during the delivery of interventions to provide customised recommendations or additional treatment. Mindell and Durand (1993) implemented a graduated extinction intervention that individualised sleep treatment programmes to match the needs of children within a family, for example, whether a child was rocked to sleep or fed to sleep, and whether a child was sleeping in a crib or a bed, and each family determined a bedtime they considered appropriate for their child. Parents were encouraged to identify and resolve any problems regarding the delivery of interventions. For one boy the treatment was not wholly successful for night wakings and therefore another intervention was implemented. Eckerberg (2004) also provided parents with advice on how to apply graduated extinction techniques with regard to specific family situations. Both of these studies illustrate how predetermined interventions can be adapted to the sleep culture of families without families becoming involved in their overall design.

The predetermined nature of a study design does not necessarily limit the contact between therapists and families during the delivery of an intervention. For example, whilst the studies by Mindell and Durand (1993), Eckerberg (2004), Reid et al (1999) and Wade et al (2007) provided parents with clear instructions on the

delivery of interventions from which parents were not to deviate, parents also received support and encouragement from therapists and researchers in the form of meetings and telephone calls. This close contact enabled parents to ask questions and seek further explanation or direction when required. Reid et al (1999) stated that the majority of parents in the study comparing standard and graduated ignoring procedures had previously received advice from their paediatrician to implement one of these treatments but had been unable to do so without the support of a clinician. The study of a two session parent group which delivered training to alleviate bedtime noncompliance in head start preschoolers by Wade et al (2007) was the only study identified in which therapists worked with groups of families to distribute information about intervention delivery, as opposed to families on an individual basis. The groups included strategies for resisting children's protests and role-playing likely scenarios to boost parents' confidence and enable them to feel part of a shared experience.

One area that parents could make a significant and unique contribution to is in the development of materials used to support an intervention. The majority of studies identified in this review provided parents with written information on delivering interventions. Therapists or researchers reviewed written materials with parents at initial appointments to ensure clarity and answer any questions. However, the materials were predominantly designed by the researcher, therapist or experts in the field (who may also have been parents). For example, the CSP internet based study by Mindell et al (2011) was a large study examining the use of the Internet to provide individualised recommendations for children's sleep following parents' completion of the Brief Screening Questionnaire for Infant Sleep Problems (BISQ). The guidance was provided on-screen and emailed to families for future reference. The size and nature of the study meant that a two-way dialogue between researcher and parent was not viable: parents could not seek further clarification or modification of issued guidance. The written recommendations provided by the CSP were not piloted with families to ensure their understanding. Indeed, not one of the studies reviewed included parents from the target sample in the design of written

information, and only one study reported (through communications with the author) having used software to ensure an appropriate literacy level and having piloted their handout. This study was High et al (1998) which provided developmentally appropriate advice about reading with children and bedtime routines. A developmental psycholinguist and a developmental behavioural paediatrician created handouts, with support from other professional colleagues. Software ensured that the literacy level required for comprehension was not higher than fourth to fifth grade and a primary care paediatrician who was also bilingual and a native Spanish speaker translated handouts into Spanish as almost half of the sample only spoke Spanish in the home. This hand out was piloted in a paediatric primary care practice.

One study involved the bedtime pass (BP) (Moore, Friman, Fruzzetti, & MacAleese, 2007), an extinction based procedure for treating bedtime resistance. The BP can be surrendered by a child in exchange for one visit out of the bedroom, for example, to get a drink. Following this, if the child left the bedroom they would be escorted back by a parent with the minimum amount of interaction. These studies did not involve families in their design but did provide clear guidelines and motivation for the children in the sample. The study by Reid et al (1999), which also implemented graduated extinction, reported that parents were asked to use the written information with which they were supplied to explain the treatment to their children and to reinforce successful nights with praise and small rewards.

Two studies targeted sleep in the general population (Martin et al, 2011; High et al, 1998). The design and delivery of these theory driven studies was different from those previously discussed: parents were not recruited to the study due to their wish to address a specific sleep problem being experienced by their child, and the study incorporated only a sample of the wider population receiving the intervention. Neither study involved parents in their design or delivery.

### *3.4.2 Evaluation of Sleep Interventions*

Where studies were evaluated, this was usually in the form of a score or scale rating treatment acceptability or satisfaction. Reid et al (1999) found no significant group differences in mothers' satisfaction ratings between graduated (GrdI) and standard (StdI) extinction. Overall, both groups of mothers' ratings of the treatment on a seven-point scale indicated satisfaction with the treatment (StdI: M=5.9, SD=1.7; GrdI: M=6.6, SD=0.9) and mothers indicated that they would recommend the treatment to a friend (StdI: M=6.9, SD=0.4; GrdI: M=7.0, SD=0). Treatment satisfaction with a graduated extinction method was also evaluated in Mindell and Durand's study (1993), post-intervention and at the one-month follow-up. The average score awarded to the success of the treatment in addressing children's sleep problems was 4.50 out of a possible 5. Parents would recommend the treatment to a friend (4.63) and considered the therapist helpful (4.63). Mothers were more satisfied with treatment than fathers (4.88 compared to 4.29). Wade et al (2007) measured client satisfaction with their graduated extinction treatment by the Therapy Attitude Inventory (TAI) and parents awarded it an average score of 46.5 from a possible 50 (SD=3.87). Families participating in the graduated extinction treatment by Eckerberg (2004) did not directly rate the treatment but did assess children as showing no detrimental effects caused by the intervention, with improvements in emotion and behaviour.

The BP study by Moore et al (2007) with 19 children aged three to six years measured parent acceptability of the treatment for the first time using the Treatment Evaluation Inventory (TEI) and found it to be high (M=34.1, SD=2.5, total=40). Parental acceptability indicated that all parents considered their child not to have experienced discomfort as a result of the treatment, whilst 92% of parents reported that they did not experience discomfort as a result of the treatment.

The recommendations provided by the CSP (Mindell et al, 2011) were rated as "helpful" by 90% of all participants, 45.6% indicating that they were "very helpful."

Most parents intended to carry on applying the recommendations after the study was complete (93.3%, with 74.4% indicating very likely), and 94% of mothers in the internet and routine group stated that they were likely to continue using the prescribed routine and products (75% very likely). This study was followed-up one year later and included additional questions on maternal perception of the CSP. When asked again to report how helpful they found the individualised recommendations 67.5% indicated helpful (16.2% very helpful).

The sleep treatment programme (Blunden et al, 2011) undertook anonymous, voluntary evaluation of the method by questionnaire (communications with author). This involved all parents attending the sleep clinic in the last two years who completed the five week sleep treatment programme (n=292), only a proportion of this sample was included in the study reported by Blunden et al, (2011) (n=33). Parents were asked to rate their level of satisfaction with the method from the scale of one (not at all satisfied) to five (extremely satisfied). The average score from 73 parents (25% response rate) was 4.3 (SD 0.8 – range 2-5). Parents were also invited to provide open-ended comments on the programme that were thematically analysed. The method was deemed inclusive of parents (24%) and child friendly with no controlled crying (15%). Three parents indicated that the method was difficult and time consuming to implement. A number of parents (n=8) also described an increase in confidence and the self-efficacy to apply the new skills they had learnt across other child development areas. There were no data regarding family evaluation of the parenting service study by Martin et al (2011) and the reading and bedtime routine study by High et al (1998). See Table 2 for a break down of studies' design and evaluation approaches.

**TABLE 2: The Involvement of Families in the Design and Evaluation of Sleep Interventions**

<b>Lead Author</b>	<b>Year</b>	<b>Age of Sample (years)</b>	<b>Size of Sample</b>	<b>Sleep Intervention Type</b>	<b>Customised Intervention</b>	<b>Family Consulted in Design</b>	<b>Evaluation Method</b>
Blunden	2011	0.5 - 5	33	Sleep Treatment Programme	Yes	Yes	Questionnaire
Eckerberg	2004	1.5 - 3	28	Graduated Extinction	Yes	No	Questionnaire
High	1998	2 - 3	25	Reading as part of bedtime routine	No	No	N/A
Martin	2011	0 - 3	1,850	Parenting Services	No	No	N/A
Mindell	2009	1.5 - 3	199	Bedtime Routine	No	No	N/A
Mindell	2011	0.5 - 3	264	CSP & Bedtime Routine	Yes	No	Questionnaire
Mindell	2011	0.5 - 3	171	1 yr follow up to above	N/A	N/A	Questionnaire
Mindell & Durand	1993	1.5 - 4	6	Graduated Extinction	Yes	No	Treatment satisfaction rating
Moore	2007	3 - 6	19	Bedtime Pass & Graduated Extinction	No	No	Treatment Evaluation Inventory (TEI)
Reid	1999	1 - 4	49	Graduated & Standard Extinction	No	No	Treatment satisfaction rating
Wade	2005	4 - 5	5	Graduated Extinction	Yes	No	Therapy Attitude Inventory (TAI)

### 3.5 MEASURING TREATMENT FIDELITY

Standard extinction, where upon a child is left to “cry it out,” has been found stressful for parents and therefore to incur poorer treatment fidelity and a larger attrition rate than other behavioural interventions (Mindell et al, 2006; Kuhn et al, 2003). Graduated extinction was developed as a more gentle form of extinction, enabling parents to check on their child at standard intervals or incrementally increasing intervals (eg. five minutes, then ten minutes, then 15 minutes). Five of the interventions involving children with problematic sleep identified in this review (ie. out of eight studies) utilised some form of extinction, a number of which aimed to implement graduated extinction in an altered format that encouraged children to exhibit independence and reward desired behaviour, which, in turn, might be less stressful for parents to implement.

The largest study of extinction was by Eckerberg (2004) involving 95 children. This study employed a two step graduated extinction programme where children were initially taught to fall asleep on their own at bedtime, and then to learn to fall asleep independently following a night waking. No measure of treatment fidelity was included in the study. At the follow-up to Eckerberg’s (2004) study, two parents reported that since the intervention they had reverted to assisting their child in falling to sleep at bed-time. The graduated extinction study by Wade et al (2007) measured treatment compliance and found that on more than 90% of nights during treatment and follow-up there was complete compliance as measured by a nightly score awarded by a research assistant based on a series of structured questions. The graduated extinction study by Mindell and Durand (1993) incorporated three home visits (baseline, treatment and follow-up) that videotaped children from 30 minutes before bedtime until 30 minutes after the child had fallen asleep, or one hour after the child’s bedtime. These data helped determine the integrity of the implementation of the intervention by parents and showed them to be compliant in all cases at treatment and follow-up, on the nights that were videotaped. Parents were contacted by telephone two to three days after a treatment session to discuss

any problems, assess treatment integrity and encourage compliance. Parents reported having little trouble understanding the treatment and very few problems implementing it. The BP evaluated by Moore et al (2007) with 19 children aged three to six years did not measure treatment fidelity but did measure parent acceptability of the treatment for the first time using the Treatment Evaluation Inventory (TEI) and found it to be high ( $M=34.1$ ,  $SD=2.5$ ,  $total=40$ ). The authors argue that high levels of treatment acceptability usually indicate high levels of treatment compliance, citing a study by Rapoff (1999) as evidence.

The study by Reid et al (1999) directly compared sample groups of standard (StdI) and graduated (GrdI) ignoring and a control group in 49 children aged between 16 and 48 months old who had been matched on age and sex and randomly assigned to one of the three groups. Mothers were asked to rate on seven point scales both their anticipated success at implementing the intervention treatment and the change they expected it to have upon their child's behaviour. Therapists also independently rated expected success and overall outcome. Mothers in the GrdI group reported less confidence in their ability to comply with treatment than the StdI group. However, in practice compliance was high in both groups and there were no significant between group differences in bedtime compliance, although night time compliance was significantly higher in the GrdI group than the StdI group during week two. There was no difference between groups in bedtime stress but night time stress was lower in the GrdI group during week two and week three. Within participant comparisons indicated that GrdI mothers reported significantly less stress both at bedtime and night time in week three than week one.

Treatment fidelity was not measured in a three step bedtime routine intervention in the home; bath, massage and quiet activities (Mindell et al, 2009). The internet based CSP, which provided customised recommendations for children's sleep by Mindell et al (2011) also did not record treatment fidelity although parents did provide feedback described above on the usefulness of the recommendations and their likelihood to continue using them. At the one year follow-up, over half the

parents in both intervention groups continued to employ the recommendations provided in the original study (57.2%, 12.8% always), whilst 87.3% of mothers in the Internet and routine group used the products at least half of the time.

The sleep treatment programme undertaken by Blunden (2011) did not record treatment fidelity during the intervention. However, all parents who had completed the sleep treatment programme in the last two years (n=292) were asked post-intervention to provide comments on the programme as detailed in the evaluation section above (n=73, 25% response rate). Overall the comments relating to fidelity were positive; only one respondent stated that whilst the programme had worked initially they had been unable to sustain it.

Treatment fidelity was also not measured in the study by Martin et al (2011) on parenting services although parents did report which services they had accessed during interview at three points during the first three years of their child's life. The sample was limited to families who had participated in the 26 month post enrolment interview and the three year home visit. It was also not possible to measure treatment fidelity in the study by High et al (1998), the only measure being whether parents received the intervention (ie. free books and developmentally appropriate information about reading and bedtime routine).

### **3.6 FACTORS CONTRIBUTING TO ATTRITION**

The study with the largest attrition rate was a graduated extinction intervention by Wade et al (2007), which invited 15 parents to participate and six declined. Four participants were then excluded, one for medical reasons, two for failing to attend the first workshop and one parent for fabricating data, leaving only a third of the original number. The study paid participants \$150 for completing assessment materials. Standard and graduated extinction was compared by Reid et al (1999) and also experienced a high rate of attrition, with 82% of 49 families completing treatment (n=43). Five participants withdrew within three days of treatment visits as

they were not prepared to leave their child to cry. One family withdrew due to complications with a second pregnancy. Of the completing participants 88.4% completed the post treatment assessment (n=38). The graduated extinction intervention by Eckerberg (2004) invited 108 parents to participate and excluded 13 families: three as their child's sleep problem was resolved via another treatment and 10 because they failed to complete more than a few sleep diaries (88.0% complete data). The reason for the failure to complete data is unknown. At a one and three month follow-up, 18 of the remaining 95 families did not provide data citing 'too many papers' as their reason, as in too much paperwork to complete.

Attrition from the three-step bedtime routine study (Mindell et al, 2009) was 11 from 199 toddlers (97.1% complete data). This study paid participants between \$150 and \$200 for participation. The internet based CSP study (Mindell et al, 2011) lost eight participants, reducing from 272 to 264 (97.1% complete data). Participants were paid between \$90 and \$175 dependent on the number of occasions they visited the treatment site. The one year follow up to this study had 171 participants (64.8% complete data) and paid participants \$5. The original number of participants for the sleep treatment study by Blunden (2011) was 72 families but 12 families cancelled in advance of the first session due to the sleep problem having resolved itself (n=4), been resolved with basic sleep hygiene information (n=1), the family successfully implementing graduated extinction with the help of a book (n=1), or the family not being in a position to address their child's sleep problem due to a change in circumstances (n=6). This is the only study where families were funding their treatment at a private clinic. Sixty families were invited to participate in the evaluation and consent to their data being used for this purpose, of which 39 provided pre and post treatment data. Six of these had to be excluded as the child was over five years of age (45.8% complete data). The findings are summarised in Table 3 below.

**TABLE 3: The Factors for Attrition in Sleep Interventions**

<b>Lead Author</b>	<b>Year</b>	<b>Age of Sample (years)</b>	<b>Sample size</b>	<b>Sleep Intervention Type</b>	<b>Treatment Fidelity Measured</b>	<b>Factors for Attrition</b>
Blunden	2011	0.5 - 5	33	Sleep Treatment Programme	No	Sleep problems resolved via alternative intervention (2) or no intervention (4), personal reasons (6), incomplete data (21), child over 5 years (6)
Eckerberg	2004	1.5 - 3	28	Graduated Extinction	Yes	Failing to complete paperwork (10) & sleep problems resolved via alternative intervention (3)
High	1998	2 - 3	25	Reading as part of bedtime routine	No	Refusal to participate in interview (out of 100 - including infants) (1)
Martin	2011	0 - 3	1,850	Parenting Services	No	N/A
Mindell	2009	1.5 - 3	199	Bedtime Routine	No	Not recorded (11)
Mindell	2011	0.5 - 3	264	CSP & Bedtime Routine	No	Not recorded (8)
Mindell	2011	0.5 - 3	171	1 yr follow up to above	No	N/A
Mindell & Durand	1993	1.5 - 4	6	Graduated Extinction	No	N/A
Moore	2007	3 - 6	19	Bedtime Pass & Graduated Extinction	No	N/A

<b>Lead Author</b>	<b>Year</b>	<b>Age of Sample (years)</b>	<b>Sample size</b>	<b>Sleep Intervention Type</b>	<b>Treatment Fidelity Measured</b>	<b>Factors for Attrition</b>
Reid	1999	1 - 4	49	Graduated & Standard Extinction	Yes	Intervention type (5), personal reasons (1)
Wade	2005	4 - 5	5	Graduated Extinction	Yes	Intervention type (6), failing to attend workshops (2), data fabrication (1) & child mental health (1)

### **3.7 BEHAVIOURAL SLEEP INTERVENTIONS FOR THE GENERAL PAEDIATRIC POPULATION**

Two US based studies targeted parents accessing parent and child services for inclusion in wider paediatric behavioural sleep interventions. The study by Martin et al (2011) concerns parents of at-risk infants and toddlers accessing parenting services via Early Head Start (EHS), a state funded community based programme. The study was longitudinal, following children from birth to three years of age. Interviews for the study were conducted at key points: six, 15 and 26 months after enrolment, and these addressed whether parents had accessed one or more of the five parenting services available to them: case management, home visiting, parent-child groups, parenting classes and parenting support groups. There are a number of limitations acknowledged by the authors: the services were not explicitly designed to address sleep behaviours, it is unknown whether services were led by professionals or para-professionals, the format and content of each service varied across sites, there is no record of whether or how sleep was addressed, and no control group. However, the study does report some statistically significant findings, three services being found to impact positively upon a child having a regular bedtime at three years

of age: a parent-child group, a parenting class, and receipt of case management. Attendance at a parent-child group was also found to impact upon having a regular bedtime routine by three years of age. An interesting finding from the study is that post 19 months of age participation in any service did not impact upon a child having a regular bedtime or a bedtime routine. This suggests that whilst parenting services may impact upon the sleep choices parents make for at-risk infants, it is not an effective behavioural intervention for pre-school children's sleep.

The second sleep intervention targeting the wider population distributed books with age appropriate developmental information about reading, and reading as part of a bedtime routine, at routine well-child visits (High et al, 1998). This study also involved low income parents, who were primarily single unemployed mothers, almost half of whom spoke multiple languages or only Spanish in the home. Data for this study are based on interviews conducted with parents post-intervention. There are no pre-intervention data for this study and instead the sample is compared to a historical control group (their data were collected prior to the intervention). There were no significant differences in long-lasting bedtime struggles, co-sleeping, night waking, and how children fell asleep between the intervention and control group. These sleep behaviours were also not found to be associated with the frequency of bedtime book sharing or the presence of bedtime routines. The authors conclude that the intervention would need stronger emphasis on children learning to fall asleep independently and for this to begin when children are aged around four to six months and parents are starting to adopt a routine. The findings from this study indicate that an intervention providing information about reading as part of a bedtime routine and the distribution of free books is not enough to directly influence the bedtime or bedtime behaviour of pre-school children.

### **3.8 RESULTS**

Only one study, which was a sleep treatment programme for which parents had paid, actively involved families in the design stage of the intervention (Blunden, 2011).

However, a number of studies endeavoured to provide individualised treatment plans for participating families prior to, or during, intervention delivery. This was not limited to studies where families had direct contact with therapists but also via the internet based CSP (Mindell et al, 2011). Where there was direct contact, therapists and researchers provided an additional role supplying families with ongoing guidance and encouragement.

The majority of studies provided families with written guidance on interventions, which was often used by therapists to lead parents through the intervention at the first session, allowing any queries to be raised. However, in the case of the CSP the only recommendations parents received were written. It was surprising that parents were not involved in the design of any written materials, which would have ensured that guidance was appropriate, unambiguous and appealing. Only one study piloted the written information they supplied to families (High et al, 1998).

Overall, nearly all the interventions identified in the review incorporated some evaluative element, two of which used established measures; the Treatment Evaluation Inventory (TEI) and the Treatment Attitude Inventory (TAI). The remainder established their own questions or statements for parents to rate or score. Only one study incorporated qualitative feedback, which enabled parents to provide unstructured comments on the interventions and may have brought new factors to light (Blunden, 2011). The majority of studies favoured the mother for completion of evaluation materials, although separate feedback on treatment satisfaction was sought from both mothers and fathers in one study to enable comparison of their experiences (Mindell & Durand, 1993). Children's opinions were not included in the evaluation of studies although a number of studies tried to ascertain parents' opinions of their children's experiences. For example, parents undertaking graduated extinction in one study reported that their children had shown no detrimental effects as a result of the intervention, only positive changes (Eckerberg, 2004), but these are subjective parental impressions. Interestingly, the BP, another form of graduated extinction, reported that 100% of parents did not believe the

intervention to have caused their child any discomfort, but 92% of parents did experience discomfort during the intervention (Moore, 2007). Overall, the feedback for all interventions with completing participants was very positive, but obtaining feedback from children should be a priority for future studies. There was no feedback from respondents who did not complete.

Surprisingly, only three studies incorporated a measure of treatment fidelity during the delivery of interventions. Only one of these included objective observations by video taping at baseline, intervention and follow-up (Mindell & Durand, 1993), and this was only on one occasion at each intervention phase and may in itself have biased compliance on the observed nights. The other two studies measured treatment fidelity by asking parents a series of questions on a daily basis that were allocated a score by research assistants (Reid et al, 1999, Wade et al, 2007).

The data on attrition summarised above illustrates that withdrawals can be a problem where families find aspects of the intervention objectionable, as in the case of graduated extinction (Wade et al, 2007) and standard and graduated extinction (Reid et al, 1999). It also suggests that maintaining records on an intervention, especially the completion of paperwork, is considered off putting and a reason for withdrawal (Eckerberg, 2004). A number of studies report attrition data but are unable to provide the reason for this as either the families were not pursued for a reason or no response was received (Mindell et al, 2009; Mindell et al, 2011). Attrition can also be a problem at the follow-up stage of studies (Eckerberg, 2004). One possible reason for this may be because once families have successfully resolved their child's sleeping problem they disengage from the intervention. It is interesting that the only study that incorporated paying clients had a high rate of attrition (Blunden, 2011). This suggests that the transaction between families receiving free treatment and providing data for studies is an important factor in minimising attrition. The provision of free materials in order to conduct an intervention, the reimbursement for visits to treatment sites, and payment for participation in studies may also aid response. However, whilst payment for participation may promote the completion

of paperwork, it is unlikely to induce families to participate if they are not committed to the intervention (Wade et al, 2007).

Two studies were identified that targeted sleep practices in the wider preschool population, although these specifically targeted low income parents (Martin et al, 2011; High et al, 1999). Whilst the study by Martin et al (2011) found statistically significant findings where parents had accessed a number of parenting services, these were not found to have an impact once the child was beyond 19 months of age, suggesting that this is not an appropriate intervention for pre-school children. The study by High et al (1999), which distributed free books and age appropriate developmental advice on children's bedtimes and routines, was found not to have had any impact on bedtime practices.

### **3.9 CONCLUSION**

In studies conducted to date, families play a very small role in the design and delivery of preschool children's sleep interventions. When researchers and therapists do seek information from families this generally relates to their home sleep culture so that interventions can be tailored for their circumstances. Written information is produced to support interventions by researchers and therapists without input from families, despite the important role families could play in ensuring accessibility, and in nearly all cases, without piloting amongst an appropriate audience to ensure materials are comprehensible to the target group. Evaluation is sought, with preference from the mother, but this is very limited and structured in format. In a small number of cases a measure with proven validity is utilised, such as the TEI or TAI. The majority of evaluation measures relate to treatment acceptability and satisfaction; families do not have the opportunity to provide general opinions on interventions, or indeed, to make suggestions for improvements to any aspect. Children are not involved in any aspect of an intervention's design, delivery or evaluation. The opportunity for families to

influence the design and delivery of future studies through evaluation is therefore very limited.

Treatment fidelity is not routinely measured in studies of preschool children's behavioural sleep interventions, only three of the ten studies included a measure and only one of these incorporated an objective measure of treatment fidelity, using video recording equipment. The validity of the studies reviewed would have been considerably strengthened by incorporating a measure of treatment fidelity.

Two factors appeared most influential in attrition from preschool children's behavioural sleep interventions: acceptability to parents of an intervention technique and the completion of large amounts of paperwork. As described above, most studies now attempt to record treatment acceptability and parent satisfaction, particularly those that incorporate a form of extinction. However, the evaluation is taken with families who complete the study, and little information, if any, is gleaned from those families that withdraw. One possibility to address the burden parents experience with paperwork is via innovative approaches to data collection that utilise advances in technology. For example, applications for mobile phones that would minimise the amount of time parents spend on maintaining paper records and perhaps enhance the appeal of record keeping. Personal factors also affect families' willingness to participate in interventions, for example, where there is a change in circumstances, such as a second pregnancy.

Communication plays a vital role in many of the studies discussed. Where there was regular contact between researcher or therapist and family, there was likely to be more discussion of the design and delivery of an intervention, and an evaluative component. Sufficient and regular communication ensures that interventions are understandable and predictable for families, whilst providing them with encouragement to adhere to the treatment guidelines and continue participation in the intervention. As Reid et al (1999) noted, all of their participants had previously received advice from a paediatrician to implement extinction but had been

unsuccessful without the support of a clinician. However, personal communication is not always essential, the Internet based CSP study by Mindell et al (2011) demonstrated that the Internet affords an effective tool for a preschool children's behavioural sleep study. The study had low rate of attrition, although families did receive payment for participation.

The review found two US based studies that targeted preschool children's sleep in the wider population, aiming to establish set bedtimes and healthy sleep practices. Both of these studies concerned low income parents, one study targeting at-risk preschool children and the other involving a large proportion of multiple-language or Spanish speakers in the home, so they cannot be said to be representative of the general population. Neither of these interventions contributed to any statistically significant changes in sleep amongst preschool aged children. Due to the time and cost of delivering interventions for children with problematic sleep, a preventative intervention promoting recommended sleep practices amongst the 'normal' preschool population is likely to be more beneficial.

## **CHAPTER 4: GENERAL METHODS**

### **4.1 INTRODUCTION**

This chapter begins with an overview of the field site (Stockton-on-Tees). The setting of the interventions, Sure Start children's centres and local nurseries within Stockton on Tees, is described in this chapter. The design and timescale of the study and the methods used to communicate information about the study and to recruit respondents is explained. Information about how respondents were sampled, including inclusion and exclusion criteria, is provided. Measurement of children's sleep is discussed. The chapter presents in detail the selection, design and delivery of data collection techniques employed: questionnaires, semi-structured interviews and focus groups. Finally, ethical considerations raised by the research are discussed.

### **4.2 STUDY LOCATION**

#### ***4.2.1 Stockton-on-Tees***

Stockton-on-Tees was the chosen location for this study owing to the study's funding via an ESRC CASE studentship involving partnership with Stockton Sure Start children's centres. Stockton-on-Tees is the largest borough in the Tees Valley with a population in mid-2009 of 192,900 individuals. Of these, 11,900 were children aged under 5 years. Stockton-on-Tees is an area that includes pockets of high wealth and areas of high deprivation. The proportion of working age adults who have been unemployed for over a year is 17.3%, greater than the average for England at 16.6%. The index of multiple deprivation in 2007 ranked Stockton-on-Tees (based on average ward scores with one being most deprived) at 98 out of 354 English districts (Tees Valley Unlimited, 2010). In 2007, 27.2% of the population in Stockton-on-Tees was living within one of the most deprived areas in England, a considerably higher proportion than in England overall at 19.9%. The proportion of

children classified in 2007 as living in poverty based on families receiving means-tested benefits was 22.5%, similar to the England average at 22.4% (Association of Public Health Observatories, 2010).

Health based statistics demonstrate some notable differences between Stockton-on-Tees and England overall. The percentage of mothers smoking during pregnancy was higher in 2008/2009 in Stockton-on-Tees at 20.3% than the England average at 14.6%. Teenage pregnancy (under 18 years) between 2006 and 2008 was 52.8 per 1,000 conceptions in Stockton-on-Tees, compared to 40.9 per 1,000 conceptions in England. The infant death rate between 2006 and 2008 per 1,000 live births was also greater in Stockton-on-Tees at 5.34, contrasted with the England average at 4.84. There was a higher prevalence of childhood obesity in 2008/09 with 10.5% of children in reception year in Stockton-on-Tees being classified as obese compared with the England average at 9.6%. However, children were found to be more physically active in Stockton-on-Tees when compared to the England average. In 2008/09 53.1% of pupils in Stockton-on-Tees in years 1-13 spent a minimum of three hours per week on physical education and school sport compared to the England average at 49.6 (Association of Public Health Observatories, 2010).

#### ***4.2.2 Sure Start Children's Centres***

Sure Start local programmes were established by the Labour Government in 1997 and became Sure Start children's centres after the launch of the 'Every Child Matters' framework in 2003, a reform programme for children's services. Sure Start children's centres provide services for families with children aged five years and below centred on child and family health, including support from midwives, health visitors and home visitors, family activities to develop early learning, parenting advice, childcare, opportunities for study and help with issues such as managing finance.

Children's centres target areas of socio-economic deprivation and there are over 3,600 centres in England based in easily accessible locations. The purpose of children's centres is to 'contribute to improving outcomes for children, young people and families' (Department for Education and Skills, 2007) Recent research by the Centre for Evaluation and Monitoring (CEM) at Durham University has found that despite considerable investment in early years education there is no evidence to suggest the support offered through initiatives like Sure Start has impacted upon children's education, such as literacy and numeracy (Merrell & Tymms, 2010). During the lifetime of this project, Sure Start underwent various organisational changes, which included becoming part of the Local Authority in 2008 and falling into the remit for Ofsted inspections.

At the time of this research been undertaken, children's centres within Stockton-on-Tees were divided into four centre areas: Billingham, Central Stockton, Stockton North and Stockton South. In total there were 21 venues in Stockton-on-Tees where parents could access children's centre services, although some of these were small outreach centres, or only offered services one morning or afternoon a week. Each centre area had its own area manager.

#### ***4.2.3 Nurseries***

Nurseries provide preschool education for children aged three and four years old. Most school nurseries provide five half-days each week during school time. Private nurseries are day nurseries that provide full or part-time childcare from birth to five years of age. Day nurseries have to be registered, are required to meet National Standards, and are subject to Ofsted inspections, as are school nurseries. A notable difference between school and private nurseries is that school nursery staff operate on a ratio of one adult to 13 children. In private nurseries the ratio varies depending on the age of children but is generally: one staff member to three children for those aged from birth to one year, one staff member to four children for two to three years, and one staff member to eight children for three to five years. Day nurseries also

have their own child protection regulations, which often include nursery staff accompanying a visitor working with children at all times.

### **4.3 STUDY DESIGN AND TIMESCALE**

The study had a basic experimental design; an alternative treatment design with pretest-posttest. A baseline, or pre-intervention measure, was taken from three groups. Two of the groups then received interventions, whilst the control group received no contact. The three groups were then reassessed post-intervention. Two interventions, one with parents and one with nursery children were each originally planned to take six months. However, after consultation with nursery managers this was reassessed and nursery interventions were delivered over four months. This was so that sessions with the children could be delivered every one to two weeks, which would be frequent enough for children to remember the activities from one week to the next and to help the researcher form relationships with the children. The timescale also allowed for school holidays. The parent intervention was delivered over a six month period as originally intended.

I aimed to gather pre-intervention data during October 2009, which would ensure that I would be able to reach the same cohort of respondents in an academic year pre and post-intervention. This also meant that data on sleep would be collected during autumn and spring where seasonal differences would not be as diverse as during summer and winter. Sure Start requested me to undertake data collection earlier than this as they were issuing a service satisfaction questionnaire in October 2009 and were concerned about overloading parents. It proved possible to collect data from children's centres during September and October 2009 for the parent intervention group and the children's centres participating in the control group. Pre-intervention data for the nursery intervention group and the nurseries participating in the control group were assembled during November and December 2009. This was due to nurseries being slow to respond to invitations to participate and requesting a later contact date to allow them to get underway with the academic year. The parent

intervention went ahead as planned, running from November 2009 to April 2010. The nursery intervention was delivered between January and May 2010, averaging four months in each nursery. Evaluation of both interventions took place predominantly during May and June 2010 but some post-intervention data were still being accumulated in July and August 2010, where multiple attempts at contact had been made.

#### ***4.3.1 Steering Group***

Sure Start children's centre managers were keen to be kept abreast of the study's developments and felt that a steering group would also enable them to more adequately support the delivery of the intervention in their centres. A steering group was established in May 2009 consisting of a private nursery manager and the following Sure Start staff: two centre managers, one crèche team leader and one home visitor. The group met for one hour on a bi-monthly basis throughout the planning and implementation of the interventions.

#### ***4.3.2 Control Group***

The use of a control group allowed for the two interventions to be evaluated against a group where no intervention was administered, which also meant that comparison of the two interventions would be more effective. The control group provided a standard measure that determined whether changes in intervention group data were due to the interventions. Where a control group is not used, the internal reliability of a study can be questioned. For example, were changes really the result of an intervention, or could they be attributed to the maturation of the children affecting their sleep behaviour, or media interest around children's sleep. However, there is no way to determine whether taking part in the control group in the study had an effect on participants. The 'pretest - posttest control group design does not control for the possible effects of testing and retesting' (Rubin & Babbie, 2007). It is possible that involvement in a study during the pretest stage may have a 'Hawthorne

effect' on respondents and lead them to consider their children's sleep afresh and even to influence respondents to change their child's sleep practices.

#### ***4.3.3 Sampling Children's Centres and Nurseries***

The three sub samples in the study were a parent intervention group, nursery intervention group and control group. Sampling took place within each centre area. Parents were only entitled to access children's centres in their centre area, which prevented any contamination between sample groups. It was logical to also divide nurseries by centre area as this provided a clear line of division and reduced the likelihood of me approaching the same respondents for both the parent and nursery intervention. Children's centre managers guided me in which centre area would be most appropriate for each intervention; this was predominantly based upon managers' own interest in whether their centre area played an active role in the study. The remaining two centre areas were used for the control area.

The parent intervention group was mostly recruited through Sure Start children's centres. I also approached three nurseries for the parent intervention group: two school nurseries and one private nursery. I selected the two school nurseries in the area as the remainder had participated or declined to participate in another PhD sleep study one year earlier. I felt that it was inappropriate to approach the school nurseries that had recently been invited to participate in a sleep study, I also might have captured some of the same children and families who participated in the earlier study and whose awareness around sleep would have been heightened, which would have biased the sample. Of the two school nurseries approached, one was disinterested and the other was eager to participate: Thornaby Church of England school nursery. I was also successful in recruiting one private nursery, Little People, a Montessori nursery based within a Sure Start children's centre.

A number of institutions were approached to participate in the nursery intervention. Five school nurseries were invited to be involved and two agreed: Norton Primary

School and Frederick Nattrass Primary School nurseries. One of the nurseries that declined to take part stated that they had too small a cohort of children, another indicated that they were too busy, and the head teacher of one school was on long term sick leave and no decision about participation was reached after a number of attempts to follow up on the invitation. I approached one private nursery that was happy to be involved, Redhill nursery, based within a Sure Start children’s centre whose manager informed me that another nursery, Footsteps nursery, based within the control area, was also eager to participate. After meeting with the manager of this nursery I determined to include it in the nursery intervention. The inclusion of Footsteps nursery, which was smaller than Redhill nursery, meant that I would be able to compare the success of the nursery intervention between two school nurseries and two private nurseries. The control group comprised a further five Sure Start children’s centres in the control area, and four school nurseries. Participation is detailed in the Table 4 below.

**TABLE 4: Participating Sure Start Centres and Nurseries**

<b>Group</b>	<b>Sure Start Children’s Centres</b>	<b>School Nurseries</b>	<b>Private Nurseries</b>
<b>Parent Intervention</b>	High Flyers	Thornaby Church of England	Little People
	Riverbank		
	The Family Centre		
	Barley Fields		
<b>Nursery Intervention</b>		Norton Primary	Redhill
		Frederick Nattrass	Footsteps
<b>Control Group</b>	Footsteps	Billingham South	
	New Life	Tilery	
	New Town	St Bede	
	Star	Oxbridge Lane	
	Sunrise		

#### ***4.3.4 Sampling Parent Respondents***

The sample used in this study was not recruited at random, but by means of systematic, non-probabilistic sampling. Respondents possessing certain characteristics were invited to take part; parents of children aged three and four years, living within the setting of the study, and utilising participating Sure Start children's centres and nurseries. This enabled a straightforward selection of relevant informants (Mays & Pope, 1995) and avoided contamination of groups.

Respondents were recruited in Sure Start children's centres via activity sessions and midwife appointments. Every parent was approached during the recruitment period and asked if they had any children aged three or four years. If parents answered affirmatively they were then provided with information on the study and invited to participate. If parents did not have any children of this age they were thanked for their time. This proved a successful recruitment strategy with all applicable parents consenting to participate, although a large number of parents approached had younger children and were therefore not eligible. Recruitment took place in children's centres during four weeks in September for the parent intervention group and two weeks in October for the control group (one week in each of control group centre area).

The majority of respondents from nurseries were recruited via letters and information sheets sent home to parents via their children in November and December 2009. This approach was most successful in school nurseries. Private nurseries had a lower response rate, with the exception of one nursery where I attended a parents' evening and spoke to parents directly. Recruitment in nurseries took place over a two month period. I aimed to recruit sixty respondents in each intervention group as I felt that reinitiating contact with respondents post-intervention, after a six to eight month time lapse, would be difficult and result in a considerable loss of respondents and so aimed to over recruit at the outset.

#### ***4.3.5 Inclusion and Exclusion Criteria***

Parents of children aged three and four years at the time of the pre-intervention measure, utilising one or more of the participating children's centres, school nurseries or private nurseries within Stockton-on-Tees were invited to participate in the study. This also included parents residing outside of Stockton-on-Tees in the case of some private nursery respondents. The only exclusion criterion was if children were receiving medical treatment for a sleep problem at the time of the pre-intervention measure.

#### ***4.3.6 Measuring Children's Sleep***

Originally I planned to seek consent for a sub-sample of children, ten from each intervention group, to wear an actigraphic monitor for one night, such as an actiwatch that records sleep and wake activity. This was to validate that parent reports of their child's sleep duration was accurate and to provide additional data, such as sleep quality. However, I decided against this for a number of reasons. Dr Caroline Jones recently validated the accuracy of parent reported sleep duration in Stockton-on-Tees in her PhD study by means of comparing sleep diaries and actiwatch data. Dr Jones' sample of three year old children were reluctant to wear actiwatches for the stated period of four days, which led to some incomplete data (Jones, 2011). I was also concerned that whilst it would be possible to undertake this research with children in nurseries where present each weekday, it would be much more difficult to do so with the children of parents recruited through children's centres where attendance at activity sessions tends to be periodical. It is likely that I would have experienced difficulties with the return of actiwatches. Children's sleep duration was instead measured by means of parent reported bedtime and wake time via a questionnaire.

## 4.4 QUESTIONNAIRES

### *4.4.1 Designing the Pre-intervention Questionnaire*

The study aimed to collect data on children's bedroom environments and the bedtime practices implemented by parents in Stockton-on-Tees. I wanted to gather data on children's behaviour at bedtime, during the night, upon waking, and during the day. Parental satisfaction with children's sleep and parental knowledge about recommended sleep practices was also to be investigated. I decided that a questionnaire would be the most convenient and effective data collection tool to reach a large number of people across a range of different locations during a short time period. A questionnaire presented a suitable tool to gather the relevant data, offering '...an objective means of collecting information about people's knowledge, beliefs, attitudes and behaviour' (Boynton & Greenhalgh, 2004). It was also a respondent appropriate data collection tool. It was possible that busy parents would not have the time to participate in an interview but would be able to spare ten minutes at their convenience to complete a questionnaire.

There are many advantages to using a previously validated questionnaire. For instance, the data would be valid, reliable and relevant, and could be compared to findings from other studies. Validated questionnaires can also save resources such as time and money (Boynton, 2004). I found a guide to publicly available sleep data resources, which included information about sleep questionnaires and scales (National Institutes of Health; National Heart, Lung, and Blood Institute; National Center on Sleep Disorders Research, 2006). However, these measures were predominantly concerned with sleep disorders, such as snoring and restless leg syndrome, and most related to adults, adolescents and infants and were not appropriate for preschool children. I searched journal articles and the Internet and again found that most validated children's sleep questionnaires were intended to identify sleep problems, such as the Child Sleep Habits Questionnaire (CSHQ), developed by Dr. Judith Owens for children aged four to 12 years. However, I was

able to adapt a number of questions from the abbreviated version of this questionnaire to suit my purposes. These included questions regarding whether a child falls asleep within 20 minutes, the sleep location of a child, whether a child resists going to bed or needs a parent in the room to fall asleep, or wakes during the night. The CSHQ asks parents to record the frequency of children's sleep habits (the figures in brackets denote the number of days of the week): always (7), usually (5-6), sometimes (2-4), rarely (1) or never (0).

I was unable to find a questionnaire that measured general parental beliefs about preschool children's sleep and knowledge about healthy sleep practices. I based questions relating to parental knowledge on information about healthy sleep practices for preschool children collated from published articles. Questions relating to parental beliefs about children's sleep derived from qualitative research undertaken with parents and health professionals for my MA dissertation in 2008, as formative qualitative research can inform questionnaire design (Boynton, 2004).

The questionnaire included only structured closed questions to ensure quantitative and comparable answers. A Likert scale, a widely used scaling procedure in social research (Punch, 2003:67), was provided for responses to questions relating to parental beliefs and satisfaction with their child's sleep. Responses included strongly agree, agree, disagree and strongly disagree. This design ensured that respondents made a decision in one direction or the other, even if they were apathetic with regard to the response, to provide data that could be re-categorised into two categories: satisfied or unsatisfied. Questions relating to parental knowledge applied the same scale but also included an 'unsure' option. This was because when measuring knowledge I did not want respondents to make a guess. I also re-categorised this data into two categories: 'correct answer' or 'no correct answer'. The use of four and five point Likert scales gave respondents more choice in their answer. However, re-categorising answers meant that a changed response could be clearly identified via analysis of pre and post-intervention data, although the ability to assess the degree of change within a single category was lost.

The use of closed questions meant that the effort required by respondents in completing the questionnaire was minimised; respondents did not have to form any answers independently, but simply select from the available options. However, a potential limitation of closed questions is whether respondents therefore put less effort into reading or listening to the question and determining their answer, or whether they just apply a heuristic approach which allows them to complete quickly (Peterson, 2000). Another possibility is that of 'position effect', respondents being more likely to select answers based upon their position amongst other answers, regardless of content. In order to combat this I rotated the position of answers so that respondents were unlikely to want to agree with every answer. This does not prevent such an error from occurring but evens out its impact (Peterson, 2000).

I avoided the use of complex routing instructions, such as, if yes, go to question 2, if no, go to question 5. These have been found to decrease motivation and result in haphazard selection of responses (Boynton, 2004). However, I did include a small number of follow up questions relating to whether respondents' children had regular bedtimes and wake times (yes/no answer), which respondents were asked to answer if they responded 'yes.' These questions posed a problem when coding data as respondents may have indicated a regular bedtime but not specified the bedtime, or they may have provided a bedtime but not specified whether this was regular.

I gathered information on the sample demographics, such as age, socio-economic status and ethnicity. I placed these questions at the very end of the questionnaire, emphasising that the information was only required to describe the sample and that it would not be shared with any other party. This minimised anxiety in relation to what might be perceived as threatening by respondents (Boynton, 2004). It has been suggested that this technique encourages completion of classification questions that people sometimes dislike answering, as the effort of completing the questionnaire has already been made (Moser and Kalton, 2001). This also maintained the focus of the questionnaire and prevented earlier pages being overshadowed by personal

questions. An information box at the beginning of the questionnaire assured respondents that the data they provided was confidential and would only be used to investigate preschool children's sleep practices. This ensured respondents of their protected privacy; encouraging participation, a representative sample and improved the quality and honesty of responses.

Questions on areas such as parental satisfaction related to respondents' opinions and 'a person's opinion on virtually any issue is many-sided' (Moser, 2001:317). The answer provided depends greatly upon the respondent's frame of mind which can be influenced by the layout of a questionnaire, the wording of a question, or the context created by preceding questions (Punch, 2003). I arranged the design of the questionnaire to ensure that there was enough space between questions and answers, including only questions I deemed to be essential. I used black 'Arial' font on a plain white background to maximise readability. The questionnaire was restricted to four sides of A4 paper.

This questionnaire was intended to elicit a fast response, I did not want respondents to analyse or brood over questions, as Punch notes, it's important not to 'get into an 'it depends' style of thinking' (Punch, 2003:61). To ensure that this was the case, questions were kept as short as possible and carried only one idea per question, whilst the language used was clear, unambiguous, non technical, relevant and unbiased. All questions were transparent in their direct focus on the topic. The final item on the questionnaire asked respondents to check a box if they were willing to take part further in the on going study.

#### ***4.4.2 Delivering the Pre-intervention Questionnaire***

One consideration for the design of the questionnaire was whether it should be self administered or interviewer administered. Self completion of questionnaires would avoid interview errors, such as reporting errors and interviewer and interviewee bias. For example, 'researchers can subtly influence responses by inflections of the voice,

facial expressions or gestures' (Boynton, 2004:1434). I was also concerned that my presence would influence responses to questions that may be considered to have 'good parenting' kudos (Wolf, 1996:377), such as having a regular bedtime or routine. To administer questionnaires would be very time consuming but was likely to generate a higher response rate than handing out questionnaires for self completion (Boynton & Greenhalgh, 2004). It also meant I would be on hand to provide answers to any questions from respondents.

I determined that, when and where possible, questionnaires would be interviewer administered by myself but that a joint approach was likely to be necessary due to issues surrounding sampling respondents from different locations at different times. Parents approached in Sure Start children's centres to participate in the study were likely to have their children present, especially if participating in an activity session. It was improbable that they would be able to complete a questionnaire and mind their child at the same time. Attendance at children's centres can be very variable so if parents took questionnaires home with them they might not have the opportunity or drive to return them. This made interviewer-administered questionnaires for children's centres appropriate. Parents utilising nurseries were unlikely to be willing to spend time completing an interviewer administered questionnaire if they were on their way to or from work, and their regular presence at nursery made a self completion questionnaire most suitable. This use of self completion questionnaires meant that it was crucial that respondents would understand both what was required of them, and the questions in the questionnaire without assistance (Moser and Kalton, 2001:260).

#### ***4.4.3 Incentives for Completion***

To encourage participation, respondents were informed that they would receive an oral health pack for their child for completion of a pre-intervention questionnaire, comprising toothbrush, toothpaste, a drinking cup and information about good dental health. These were provided by the oral health promotion co-ordinator from the

North Tees Teaching Primary Care Trust. I undertook oral health training with the co-ordinator so that I was able to provide guidance to parents if necessary. The packs were an appropriate 'thank you' gift as they complemented the Sure Start oral health initiative and brushing teeth is part of a recommended bedtime routine.

Respondents were also given the opportunity to be entered into a free draw for 12 £5 Boots vouchers upon completing the questionnaire. In order to take part respondents had to provide their home address, and/or email address, and/or a contact telephone number. Respondents were informed that if they indicated that they were willing to take part in the post-intervention measure they would be contacted using these details. However, if respondents elected not to take part in the post-intervention they would receive no further contact unless they were successful in the draw. The draw was made by randomly selecting participant numbers using a computer application.

Providing incentives for completion has been demonstrated to influence response rates (Boynton, Wood, & Greenhalgh, 2004). Anonymity has not been established as an influencing factor in the response rate or response quality (McColl et al., 2001), therefore ascertaining names and addresses was not perceived as having a negative bearing on data collection.

#### ***4.4.4 Piloting the Questionnaire***

The questionnaire was piloted with two groups of parents, representative of the sample population, in two different centre areas. One group comprised ten parents and the other six parents. Respondents were given a brief introduction to the purpose of the questionnaire and the pilot exercise and provided with a copy for self completion. The piloting of the questionnaire ensured that questions were not considered ambiguous, offensive, boring or poorly laid out (Boynton, 2004) I anticipated that questionnaires would be quick to complete, estimating between five and ten minutes. However, I found that the completion of questionnaires took most

participants between ten and fifteen minutes, and I advised subsequent participants in the study that this was the anticipated completion time. No respondents had any queries that demonstrated any lack of understanding of questions and respondents were in agreement that the length of the questionnaire was appropriate and they had found completion straight forward.

With regard to the design of the questionnaire, a number of respondents found the large print and spacious layout over four sides of A4 disconcerting. They recommended reducing the font size and spacing between questions to fit the questionnaire on to three sides of A4, and I followed this advice. I found that whilst this might have made the questionnaire more aesthetically pleasing and given the appearance of a shorter questionnaire, it may have resulted in some accidentally omitted responses where questions were tightly packed together.

Respondents suggested having fewer categories from which to respond to, and stated that they couldn't really see the difference between sometimes and rarely. Two respondents also felt that always should be 6-7 days of the week as routines were upset by illness, special occasions and children spending the night elsewhere. I removed the option of rarely and asked parents to select from a four point scale: always (6-7), often (3-5), occasionally (1-2) and never (0).

One respondent proposed the inclusion of two questions, relating to whether respondents had ever considered their own health to have suffered as a result of their child's sleep, and whether they had ever sought medical advice for a sleep issue for their child. These questions were incorporated into the questionnaire and generated interesting findings. The finished questionnaire can be seen in Appendix A.

#### ***4.4.5 Designing the Post-Intervention Questionnaire***

The post-intervention measure was required to gather the same data as the pre-intervention questionnaire so that a valid comparison between the two could be

made. Therefore the questionnaire was implemented again and remained the same with the exception of the omission of questions relating to personal information, this having already been gathered. This meant that the questionnaire could be condensed into two sides of A4 paper for the control group. The two intervention groups received one additional page of questions relating to the intervention, employing open ended questions, therefore questionnaires were again three sides of A4 (see Appendices B1 and B2). At the end of the questionnaire, respondents from the intervention groups were given the opportunity to provide any additional comments. This provided respondents with the opportunity to freely express themselves on any issue, unrestricted by a question and answer framework.

#### ***4.4.6 Delivering the Post-Intervention Questionnaire***

I determined that where possible I would contact respondents and administer questionnaires as an interviewer on the telephone. I hoped that this would increase the response rate and provide the opportunity to conduct questions on the interventions as semi-structured interviews. An attempt at contacting each respondent was made at least three times by telephone, on different days and at different times. If I had been unable to reach respondents and there was an opportunity to leave a message I did so. Respondents were asked to contact me to arrange the phone interview at their convenience, which two respondents followed up on. If I was unable to establish telephone contact and the respondent had provided an email address I sent an email explaining that I was trying to make contact, explaining the purpose of the study and asking them to reply by email providing a convenient time for me to try them again. This resulted in five successful responses. Where no response was obtained I sent respondents personalised letters and questionnaires where I had a contact address. Letters thanked respondents for their participation in the study so far and asked them to aid the study further if convenient by returning questionnaires in the stamped addressed envelopes enclosed (see Appendix C for a sample letter). Issuing reminders or reissuing questionnaires has also been identified as a promising technique to

increase response rate (Edwards et al., 2002; Nakash, Hutton, Jorstad-Stein, Gates, & Lamb, 2006). I made the decision not to attempt to reinitiate contact with respondents subsequent to mailing questionnaires as I did not want to be perceived as harassing respondents to participate.

## **4.5 INTERVIEWS**

### ***4.5.1 Semi-Structured Interviews with Parent Respondents***

The principal questions covered during semi-structured interviews were those used in the post-intervention questionnaire. However, semi-structured interviews provided a greater wealth of data on the interventions than that ascertained by open ended questions on a questionnaire. They enabled flexibility in interviews; I was able to follow up respondents' answers with additional questions when required and gain a richer quality of data, respondents were able to seek further clarification as to the meaning of questions and whether certain things that their child had mentioned had been part of interventions. Questions could also be 'reformulated' by myself and respondents by means of negotiation until we reached a shared level of agreement (Mishler, 1986:52).

As interviewer I would be the research instrument (Kvale, 2007:49), which meant that the findings would, to a large extent, be dependent on my ability as a knowledgeable, encouraging and understanding interviewer, who would know when to speak and when to listen. I tried not to impose my own structures and assumptions on respondents and to be open to unexpected findings from interviews (Britten, 1995). Semi-structured interviews with parents averaged an extra five minutes of talking from the structured interview administered questionnaire, but in some cases were considerably longer to ensure that respondents had been provided with enough time to explain their meaning (Britten, 1995).

Parent interviews were conducted on the telephone. I tried to maintain control of interviews by providing respondents with verbal feedback and retaining the focus of the interview if respondents had become sidetracked. The main difficulty I experienced was outside of my influence; interruptions and distractions for the respondent within the home, particularly children (Britten, 1995). However, this was not a problem I could easily address as interviews were undertaken at respondents' convenience, which often coincided with having collected their child from nursery.

#### ***4.5.2 Unstructured Interviews with Staff Respondents***

Staff respondents were recruited post-intervention by means of purposive sampling of appropriate roles. I wished to gain insight into staff opinion on the design, delivery and success of interventions. The staff recruited included crèche workers, childcare facilitators, customer services assistants, and nursery staff. Their roles include daily interaction with parents and they would therefore be able to provide data based on observation and discussion with parents. Health visitors and home visitors' opinions were sought as they are responsible for supporting parents of children experiencing difficulties, including sleep issues. I wished to discover if the parent intervention had been of any assistance to them.

Structured interviews are considered to be invaluable when the researcher is aware of the main issues and can determine appropriate questions and have a good idea of the responses that these might generate. Unstructured interviews provide a 'flexible strategy of discovery' (Lofland, 1971:198). It can be argued that no interview is wholly lacking in structure, otherwise the data collected might not be fitting to the research question (Britten, 1995). I had an idea of the topics I wished to cover during interviews with staff members but was uncertain of the responses that questions would elicit. I required a method that would be adaptable and deemed unstructured interviews to be most appropriate.

Unstructured interviews were conducted with individual members of staff: three nursery managers, two nursery teachers, one nursery worker and two Sure Start children's centres customer services assistants. Unstructured interviews have been referred to as 'conversations with a purpose' (Burgess, 1996:36). Allowing researchers to explore attitudes, values, experiences and opinions, the open ended nature of unstructured interviews would also generate more considered responses (Bryne, 2004). Unstructured interviews are 'based on a clear plan that you keep constantly in mind, but are also characterised by a minimum of control over the people's responses' (Bernard, 2006:211). Respondents are not restricted to set predetermined answers (Ryan & Weisner, 1996:58) and it is within respondents' power to introduce the components that they consider most important to the theme of inquiry (Kvale, 2007:12). The use of unstructured interviews would allow me to probe deeply and achieve depth and complexity.

I strived not to be directive when interviewing staff, but made encouraging noises, reflected on their responses and probed deeper into their meaning providing 'reinforcement and feedback' (Patton, 1990:329). I tried not to fill in silences but to respect them and ensure that respondents had nothing further to add (Garrett, 1970). However, at times it was necessary to introduce a new topic, to ensure that interviews covered all relevant areas (Britten, 1995). I developed an interview topic guide that I could refer to during interviews (see Appendix D) to enable me to cover the required topics with respondents if they had not already drawn upon them themselves. This meant that to some degree interviews were planned, but retained the freedom to be responsive in nature. The topic guide also assisted in assessing and analysing data.

#### **4.6 FOCUS GROUPS**

Focus groups are commonly used during the exploratory phase of a study to aid the development of quantitative measures, such as questionnaires (Barbour, 2007), and are frequently employed as a means of collecting individual level data in a group

setting (Hollander, 2004). In this instance I chose to use focus groups in the final stage of data collection to explore group level data; I wanted to evaluate different staff groups' opinions of the parent intervention, as relationships and contact with parents was quite variable across staff roles. Focus groups enable the exploration of 'group norms and dynamics around issues and topics' (May, 2001) and it has been demonstrated that focus groups can provide more critical comments than generated during interviews (Kitzinger, 1995). Homogeneity within focus groups has been recommended to 'capitalise on people's shared experiences' (Kitzinger, 1995:301), and naturally occurring groups, such as people working in the same job role, is very effective in instances where participants can relate to one another's knowledge and lives.

Four focus groups were conducted with separate groups of staff: six home visitors, six health visitors, seven crèche workers and four childcare facilitators. The focus groups were arranged with team leaders and conducted immediately after team meetings. They provided a straightforward efficient means to undertake research with busy members of staff who I had previously struggled to contact individually.

Participants in focus groups are able to voice their opinions 'in their own vocabulary, generating their own questions and pursuing their own priorities' (Kitzinger, 1995:299). Data can be generated via lively discussion and debate and participants can act as co-moderators by encouraging one another's responses and clarifying remarks (Barbour, 2007:113). This can provide data on how participants' think and why they feel a certain way, rather than examining only what they think. I chose not to use a focus group protocol as I wished to introduce the parent intervention and see what issues groups raised, prior to asking questions. When questions were necessary, I asked them directly and impartially so as not to bias results (Betts, 1996). I also provided flexibility; offering participants a range of points from which they could choose to respond (Barbour, 2007). I encouraged all respondents to participate, asking for quieter respondents' opinions when they did not contribute to discussion. Each focus group was distinct and able to provide

different insights based on their roles. I followed topic prompts as used in unstructured staff interviews to ensure that all relevant topics were covered.

At the end of focus groups I summed up respondents' views about the intervention to confirm that these were the main issues raised and to provide respondents with the opportunity to clarify or expand on points. This also insured that I knew what was of importance, and what was of interest to the group, aware that the two of which could differ substantially (Morgan, 1997).

#### ***4.6.1 Use of Audio Equipment***

Interviews and focus groups were digitally recorded and it is possible that some respondents might have found this off putting initially (Schostak, 2006). However, the digital recorder is unobtrusive and recording increased accuracy, allowing me to be more attentive to respondents, and prevented any subsequent misinterpretation of what was said and how it was said (Patton, 1990). I was able to transcribe interviews and focus groups for analysis.

### **4.7 TIMEFRAME FOR DATA COLLECTION**

The following table illustrates the timeframe over which data was collected from each group participating in the study and the number completed. Postal post-intervention questionnaires were issued in June 2010 but were often not returned until July or August 2010. It was not possible to arrange focus groups with Sure Start members of staff until after the summer holidays due to their time commitments.

**TABLE 5: Timeframe for Data Collection**

Data Collection	Time Period receiving completed data	Number completed
Parent intervention pre-intervention questionnaires	September – October 2009	39
Nursery intervention pre-intervention questionnaires	November – December 2009	51
Control group pre-intervention questionnaires	November – December 2009	118
Parent intervention post-intervention telephone interviews	May – June 2010	11
Parent intervention post-intervention postal questionnaires	June – August 2010	8
Nursery intervention post-intervention telephone interviews	May – June 2010	21
Nursery intervention post-intervention postal questionnaires	June – August 2010	10
Control group post-intervention interviews	May – June 2010	28
Control group post-intervention questionnaires	June – August 2010	12
Parent intervention staff interviews	June 2010	3 nursery managers 2 customer services assistants
Parent intervention focus groups	September 2010	1 group of 6 home visitors 1 group of 6 health visitors 1 group of 7 crèche workers 1 group of 4 childcare facilitators
Nursery intervention staff interviews	June 2010	2 nursery teachers 1 nursery assistant

## **4.8 COMBINING QUANTITATIVE AND QUALITATIVE RESEARCH**

This study adopted a deductive approach toward research, which is appropriate for both quantitative and qualitative research when methods are matched to the research question (Pope & Mays, 1995). Qualitative and quantitative methods are often portrayed as fundamentally different, with separate issues surrounding the validity and reliability of findings (Mays & Pope, 1995). Quantitative research can be perceived as researcher led, whilst qualitative research offers an approach where respondents can occupy a more proactive role (Betts, 1996). Using multiple methods; questionnaires, interviews and focus groups ‘reflects an attempt to secure an in-depth understanding of the phenomenon in question’ (Denzin & Lincoln, 2008) by adding rigour, breadth and depth to a study. I also sought the opinions of a range of different respondents; parents, teachers, nursery managers and customer services staff, thereby attaining triangulation, a process of applying multiple perspectives to clarify meaning and provide validity to data (Stake, 2008).

In this study qualitative methods were used to support the findings of quantitative research (Pope & Mays, 1995). The use of structured questionnaires enabled quantitative analysis of a large amount of data on children’s sleep, parental beliefs and knowledge on a set number of issues. However, questionnaires or structured interviews would have been wholly inappropriate for seeking staffs’ opinions of interventions, as responses could not have been anticipated and a deeper level of understanding was required, which could only be achieved by allowing respondents to talk within their own frames of reference (May, 2001).

## **4.9 ANALYSING DATA**

Data gathered from structured questions through pre and post-intervention questionnaires was treated as quantitative data and coded and entered in SPSS, a statistical package that permits the majority of statistical analyses. SPSS enabled quantitative data to be summarised and tabulated for each sample group participating

pre-intervention only, and pre and post-intervention. Paired tests for association, such as the McNemar Test and Wilcoxon Signed Rank Test, allowed the comparison of individual respondents' data pre and post-intervention to identify whether there had been any changes, and if so, whether they were statistically significant.

Qualitative data from post-intervention interviews and focus groups was transcribed to assist analysis. These data were then subject to content analysis. I read through each transcript and identified categories from both respondents' data and the interview guide, thereby adopting a 'pragmatic version of grounded theory' in my approach to analysis (Barbour, 2007:120). I then quantified findings where possible to compress results and make them easily comprehensible (Mays & Pope, 1995). For example, nursery intervention respondents were asked if their child was more aware of sleep as a result of taking part in the project. The number of parents who answered affirmatively was quantified. The dialogue that followed this question was then examined for categories, for example, one category that emerged was children being aware of the health benefits associated with sleep, subcategories included the individual benefits identified.

I provided a number of quotes from respondents in qualitative analytical discussion to provide further elucidation, and because too much summarising of data 'is not only dry but also deprives the reader of even the indirect contact with participants that their verbatim statements provide' (Morgan, 1997:64). Focus group data was aided by 'summing up' responses at the end of sessions as described earlier. This ensured that respondents' opinions regarding what important findings had emerged focus groups was '...built into the data collection itself – not left to the analyst's post hoc speculation' (Morgan, 1997:62). Responses from different interview respondents and groups were compared and contrasted to offer a range of opinions.

## **4.10 ETHICAL CONSIDERATIONS**

### ***4.10.1 ASA Ethical Guidelines***

This thesis presents research following the ethical guidelines provided by the Association of Social Anthropologist (ASA) in the UK (2011). This included ensuring that the methods selected were appropriate for the study and would not produce misleading results, and that the limitations on findings and interpretations would be stated. Consent for the study was sought from Durham University Ethics Committee. Initial consent for participation in the study was sought via ‘gatekeepers,’ such as head teachers and nursery managers, and subsequently by consent from parents. Information sheets and consent forms were provided, as detailed below in point 4.9.2. Consent was viewed as an ongoing process; respondents who had given written consent pre-intervention to be contacted post-intervention by telephone were again provided with information on the study and asked for verbal consent before participating post-intervention. The local community were able to play an active role in the planning and execution of the research via the participatory research group. Before producing intervention materials containing personal photographs and information that would be in the public domain, the impact that this might have upon participants in the PR group, such as intrusion into their private life, was anticipated and discussed with the group. The PR group were informed that they would have the opportunity to view and provide input into any publication that included research undertaken with or by the PR group. Sure Start children’s centres had some influence over the research as they were part funding the project and much of the research was undertaken on their premises with their clients. However, all ethical decisions concerning the rights and responsibilities of research participants, Sure Start and other parties’ rights in data collected, and publications and copyright were determined by myself. In order to access children’s centres and nurseries it was a requirement that I obtained an enhanced Criminal Records Bureau (CRB) disclosure, which also enabled me to work with under 18 year olds.

All data was stored securely in accordance with the Data Protection Act 1998. Participants were allocated identification numbers and were not named in any documents.

#### ***4.10.2 Information Sheet and Consent Form***

Participants were provided with an information sheet (see Appendices E1-E3) and the opportunity to ask questions. The study aim was transparent to all participants. Participants within the control group were informed that they were part of a control group and the importance of gathering control data was explained to them. Anonymity and confidentiality were guaranteed to participants. Consent was sought from parents for digital recordings of interviews and photographs of children. The information sheet was intended to motivate completion of the questionnaire and provided additional detail on the study, the intervention, or purpose of the control group and invited participation in the post-intervention round of data collection. The information sheet addressed ethical considerations of informed consent, including informing respondents of likely benefits and outcomes of the questionnaire, explained how data would be stored, respondents' right to decline from participating or answering any question on the questionnaire, and information on who to speak to if respondents required more information (De Vaus, 2004). The information sheet notified respondents that the study had gained ethical approval from Durham University's ethical advisory committee. It also informed them of how the project was funded and which organisations were involved in the study.

The consent form (see Appendices F1-F3) requested participants to indicate whether they gave consent for them and their child to participate in the study. It verified that respondents had been provided with adequate information about the study and the opportunity to ask questions, and whether they had received satisfactory answers to these. It also stated respondents' rights to withdraw themselves and their child from the study at any time. The consent form for the nursery ascertained consent for

children to be photographed and digitally recorded. It explained how photographs and recordings would be used in the research and when presenting the study at conferences and other professional assemblies.

#### ***4.10.3 Recruiting Participants***

The use of incentives and the ethical implications of providing a potential payment for participation in research has been debated by researchers, whilst it is generally believed that the inclusion of a small non-monetary payment in a mail questionnaire, such as the oral health packs and entry into the free draw, results in a higher response rate, it could also be argued that this is a payment for participation, which also has potential to influence respondents. It is generally only goodwill or an inclination to be helpful that motivates individuals to participate in a questionnaire (Peterson, 2000).

The study endeavoured to include a variety of respondents and provide all parents wishing to take part in the study the opportunity to do so. All of the parents approached face to face by myself in Sure Start children's centres participated in the pre-intervention stage of the study. It is not possible to gain more insight into non-respondents, the parents who were invited to participate in the study and declined, because they were approached via nursery staff. No record was kept of non-respondents, partly because staff did not seek ethical approval to provide any of their details to me. I recognise that '...those who don't participate are equally important scientifically...' as respondents (Boynton, 2004). Without this information it is difficult to assess whether the study captured a fully representative sample. I have made every effort to ensure that I have represented the views of all respondents equally, with no one group being privileged over another (Schostak, 2006).

## **CHAPTER 5: PARENT INTERVENTION: METHODS, RESULTS AND REFLECTIONS**

### **5.1 INTRODUCTION**

This chapter is a discussion of the parent intervention. It examines the participatory research approach adopted to work with a group of parents to design, deliver and evaluate a sleep intervention aimed at other parents. This includes the difficulties encountered establishing a participatory group, the participants; their reasons for contributing, and the personal and social gains from participation, and the common issues that arise within participatory research; addressing power imbalances, building relationships and creating knowledge. The process of designing and implementing the intervention is described in detail. The findings from interviews conducted by the participatory research group with a convenience sample of parents are discussed. Results from semi structured interviews conducted post-intervention with respondents from the parent intervention sample group are examined in detail. Focus groups and interviews with Sure Start and nursery staff to glean their reflections of the project are also considered.

### **5.2 PARTICIPATORY RESEARCH**

Participatory research, as established in the literature review (chapter 3, point 2.13), constitutes a research philosophy rather than the application of specific methods. It is concerned with taking a ‘bottom up’ approach to social investigation, learning and action (Cornwall & Jewkes, 1995:1667).

The value of working alongside parents to establish priorities and problems with children’s sleep was recognised during the research planning stage of the parent’s sleep intervention. Children’s sleep is not only driven by biological needs, but also by the cultural values and beliefs held by parents (Jenni & O’Connor, 2005), and

research on Western sleep culture regarding pre-school aged children is negligible as discussed in Chapter three. Participatory research with parents aimed to provide detail on the cultural norms and beliefs in the local area, and help identify problems and solutions parents face when dealing with their children's sleep during this age range (three and four years old). Participatory research also aimed to inform sleep intervention materials and identify potential methods of communication with the target audience; local parents. Involving the local community in interventions has been demonstrated to improve efficiency and save resources, such as time and money (Cornwall and Jewkes, 1995).

Sure Start were especially supportive of a participatory research approach, as it meets with their own principle of listening to what parents want and responding with customer driven services. The intervention was included in Stockton-on-Tees' evidence regarding parent consultation for Sure Start children's centres' first Ofsted inspection.

### ***5.2.1 Recruiting Participants***

Sure Start children's centres provided straightforward access to parents for recruitment as discussed in the previous general methods chapter. Sure Start management advised that posters and staff publicity would be the most appropriate way to promote the opportunity for parents to participate in research involving preschool children's sleep. Posters were produced inline with other Sure Start materials; colourful, minimal text, with clip art style pictures (see Appendix G). A number of information sessions were available for parents to meet with me and find out more about the project. These were arranged on different days of the week, at different times and in different centres to maximise the opportunity for attendance. Parents could also register interest with reception if they were not able to attend a session. This approach had been successful in a different centre area when recruiting parents for Sure Start initiatives, and for a previous piece of research I conducted for my MA study. However, there was very little take up and only one

parent was successfully recruited by these means. Next I approached parents directly during various activities at the Sure Start children's centres, such as 'Stay and Play' and 'Tiny Treasures.' I explained the project to parents and provided them with a basic information sheet (see Appendix H). Almost forty parents interested in participating in the project provided me with their details. They were then contacted about attending an information meeting via phone calls and letters. One difficulty was finding a meeting date and time to which people could commit. A separate issue was childcare; a limited number of free crèche places were offered but many parents attending activity sessions had not accessed the crèche previously and were reluctant to leave their child in an unfamiliar setting. Sure Start were unwilling for us to hold a meeting with children present due to insurance liability and the emphasis on utilising crèche facilities. Time, work commitments and family pressures were also cited as reasons why parents were reluctant to involve themselves in something more than a 'one off' meeting. Two parents were recruited to regular meetings, whilst many wished to be kept informed of meeting dates and times in the hope that they would attend if they were available.

It was clear a different approach was needed to reach parents who would be more at liberty to participate and willing and able to make a commitment to the project. I arranged to access education classes being held within Sure Start children's centres. Participants on courses were already using the crèche or had other childcare arrangements in place. They were also more likely to be reliable attendees at meetings as they had already committed to regular attendance at a course. This resulted in the recruitment of seven regular participants.

One difficulty recruiting parents for the participatory research group was the lack of detail I was able to specify about the project. For example, the level of involvement that the participatory research group would have in the sleep intervention or even what the intervention itself would entail. This is a complexity of the nature of participatory research. Ideally participants will jointly construct the project with the

researcher; ‘the research design unfolds as part of the collaborative project and cannot always be specified in advance’ (Ditrano & Silverstein, 2006:359).

At the first meeting I invited participants to introduce themselves and to provide any background information on why they had decided to attend the meeting. Every participant talked about their family life and the sleep difficulties that they were experiencing with their child. One participant described sleep as their ‘primary parenting concern.’ Although I had tried hard to interest parents of all children, i.e. parents who considered their children to be good sleepers, not only poor sleepers, I was only successful in recruiting parents who perceived their children as problem sleepers. This demonstrates the difficulty of engaging a range of participants in a project that is not of pressing interest to them. Charlier, Glover and Robertson state that ‘The challenges of community participation are amplified when the particular health issue or research question is not prominent in the consciousness of the targeted community’ (2009:949). Timmons et al detail similar difficulties during a health related knowledge transaction process and conclude that to involve the general community a ‘high stakes issue that is timely and relevant’ is required (2007:186). If individuals cannot identify an immediate or personal gain from becoming involved in a participatory research project, then they are unlikely to perceive its value and engage.

There was no payment for participation and it is true that the group ‘represent(ed) a self-selected sample’ (Ditrano & Silverstein, 2006: 365) who were willing to give up their time and discuss their personal experiences in a group setting. Participants were not necessarily representative of other parents experiencing sleep problems with their children or parents in general. However, participatory research is fundamentally the representation of the local community by a select few (Charlier et al, 2009). This research project tried to satisfy Hayward’s power theory (2000) by fulfilling the pragmatic goal of providing everyone who desired to participate the opportunity to do so through publicity of the project and straightforward access (Dworski-Riggs & Langhout, 2010).

I believe that the participatory research group would have benefited from a grandmothers' contribution following conclusions drawn in my MA research that there is a strong matriarchal influence upon child rearing in Stockton-on-Tees. However, although I met a number of grandparents at the activity sessions they were reluctant to commit time when not caring for grandchildren to the project, and were hesitant about using crèche facilities when parents had left the children in their care. Childminders were also welcome to attend meetings and I met a number who were enthusiastic about doing so, but Sure Start have a restriction on paid childminders using crèche facilities during their working hours so this was not possible. I was also unsuccessful in encouraging any fathers to participate. The children's centres have implemented a number of initiatives to try and engage local fathers, such as a dad's group, but these have been slow getting off the ground and the take-up is low.

### ***5.2.2 The Participatory Research Group***

Meetings began in High Flyers children's centre in May 2009. The first two were attended by ten participants, whilst attendance varied in the following meetings, averaging seven or eight. By January 2010 meetings were regularly attended by five participants. The loss of participants was due to work commitments (one participant returning to work, another switching from part-time to full-time work), two participants attendance dwindled due to family pressures and one participant died. A number of additional participants accessed the group for one or two meetings whilst they were experiencing some difficulty with their child's sleep. When they were no longer in need of the group's support they stopped attending meetings. Meetings were informal and discussion about children's sleep took place over tea and scones, often veering off onto other topics as the group became better acquainted. At the start of meetings, four of the women recognised one another through attendance at Sure Start activities or educational courses.

The group benefited from consisting of a wide age range of mothers with children at different ages and sleep stages. The mothers of more than one child or older children were able to advise the first time mothers on all aspects of child development as well as sleep.

The five members of the participatory group who continued to meet and were involved in the evaluation of the project were a range of ages; from early twenties to mid forties, with qualifications at college or vocational course level. All were married; three were full-time mothers, whilst two had part-time jobs as a private nursery nurse and a company secretary. Two of the women were claiming benefits and all of the women classified themselves as White British. Only one woman had more than one child, whilst another had a step-daughter, and one of the women was mother to twins. Although Sure Start aims to engage families from low socio economic status groups, the participatory research groups' characteristics were representative of the parents utilising the children's centres at this time. This can be seen in point 7.2.1 Table 8, which displays the characteristics of the parent intervention sample.

### ***5.2.3 Addressing Power Imbalances***

Cornwall and Jewkes argue that “participatory research” consists less of modes of research which merely involve participation in data collection than of those which address issues of the setting of agendas, ownership of results, power and control’ (1995:1667). It was a concern to address these issues to ensure that they would not provide a barrier in this project to prevent deep level parent participation.

The research agenda, such as the issue under research and the concept of producing a sleep intervention within Sure Start Children's Centres, had evolved from research and discussion between the researcher, the University of Durham, Stockton Local Authority and Stockton Sure Start Children's Centres. The participatory research group did not have had any input in the initial research question and project design.

This meant that there was an ‘early imbalance’ in the power relations between the participatory research group and the researcher and collaborators (Hampshire, Hills, & Iqbal, 2005:344). I was also concerned that as researcher the group would consider me to have ‘expert knowledge’ on the topic (Hampshire et al, 2005:344). In order to address this imbalance I sought hard to demonstrate to participants from the first meeting that their views were being sought as they were experts due to their experience as local parents. I was also open with the group that I didn’t have any children of my own and have never had to physically deal with a child that won’t sleep in the middle of the night. This reassured parents that I needed enlightening on the reality of sleep issues and encouraged them to share their stories. During the evaluation phase of the project participants described how my contribution had complemented theirs as I didn’t have any children, but provided a ‘different perspective’ and a ‘professional opinion’ based on research findings. However, on a number of occasions I heard myself being described by members of Sure Start staff as ‘a sleep expert’ or ‘our sleep researcher,’ and this was often in conversation with parents. This raised another issue – my efforts to avoid being perceived by parents as a member of Sure Start staff.

Sure Start’s involvement in the project design, their contribution in terms of funding, and the use of their buildings and childcare facilities meant that they had physical and symbolic capital in the project (Bourdieu, 1977; Hampshire et al, 2005). Sure Start were keen to be involved in the project on the ground level and to involve staff in group meetings. It also soon became clear that Sure Start staff members had their own interests and agendas for the project and there was some reluctance for me to be given free reign to conduct the research. After some persuasion, I agreed that a home visitor could attend a one off focus group meeting in a different centre area where I was conducting formative research for the children’s intervention. The home visitor was to attend as a parent, not as a staff member. However, the home visitor knew one of the parents in attendance, having advised her on problems with her child’s sleep, and described herself to the group as the mother’s ‘Supernanny.’ When discussing issues around sleep the group deferred to the home visitor and she

assumed both a leader's and expert's role in defining the problem and solutions. It was also the case that the home visitor was attending the meeting during her working hours, whereas the other attendees were volunteering their free time. The power imbalance was apparent and the parents were quiet and reluctant to express an opinion in this group. I determined that Sure Start staff would be excluded from participating in the project from this point on.

#### ***5.2.4 Knowledge Construction, Relationship Building and Power***

Participatory research has three main characteristics; it involves co-construction of knowledge between the researcher and participants, the formation of relationships between the researcher and participants during the design, execution and dissemination of a project, and should result in individual, collective and/or social change through a process of self-critical awareness and reflection (McIntyre, 2008).

The co-construction of knowledge and the formation of relationships between the participants and myself reduced the power that I possessed as researcher. During the first couple of meetings I was aware that participants were referring to our meetings as 'the sleep course' and was so reluctant to be perceived as an 'instructor' or possessing 'expert knowledge' that I held back during discussions. It was only following meetings when I engaged in general conversation with participants and they appeared more at ease that I realised I was isolating myself from the group as I was not participating in knowledge exchange. As Martin notes 'The researcher is a committed participant in the process and is actively involved as opposed to being impartial and detached' (1996:83). Once I engaged with the participants by providing critical analysis on research findings, they gained confidence to debate issues with me; often wanting more details or taking a theoretical perspective and applying it to their own experiences. It was through assuming a more natural and open role with the group that we began to co-construct knowledge and form relationships with one another. I also accepted that the group was more comfortable terming the participatory research as a course, as this was a concept with which they

were familiar and practiced. Rather than trying to move the group away from this concept I instead embraced it and provided participants with folders at the third meeting with printed information that was built upon at subsequent meetings.

The value of sharing personal experiences was apparent from the outset, with participants stating ‘it’s so nice to hear someone else say that’ and ‘it’s not just me then.’ Following the first meeting, one mother stated ‘I got up that night and I just felt so much better knowing that I wasn’t the only one stood there with a screaming child at 2am in the morning.’ Diantro and Sliverstein (2006) discuss how participants develop critical consciousness through listening to other participants’ experiences and realising that the isolation they may be experiencing is not unique. At times the group dynamics were much more akin to a support group than a participatory research group; the project provided social-networking opportunities for individuals who shared similar experiences (Diantro & Silverstein, 2006). Dworski-Riggs and Langhout draw attention to the possibility of social norms acting as ‘power mechanism(s)’ (2010:216). Participants stated that meetings allowed them an outlet to discuss issues that they would have otherwise kept to themselves for fear of looking like failures when their children appeared to be going against ‘the norm.’ It was also an opportunity for parents to openly discuss bedtime behaviours that society may deem inappropriate or dangerous, such as bedsharing. A participant described how if she ever ‘confessed’ to someone that she bedshared with her daughter, she was apologetic for it ‘I know I shouldn’t be doing it but...’ Participation in the project provided parents struggling with their children’s sleep problems with a sense of optimism and empowerment.

### **5.3 DESIGNING AND IMPLEMENTING THE PARENT INTERVENTION**

The first decision the group made was how regularly to meet. Participants chose to meet monthly as they felt that this would fit in with their family schedules and allow them time to try different approaches proposed by the group when tackling issues with their children’s sleep and assess any changes. Meetings originally lasted one

and a half hours, but as the group began designing the sleep intervention they often extended to two hours. All meetings were digitally audio recorded.

The group had known from recruitment that the purpose of meetings was to form an intervention that would be delivered in Sure Start children's centres. However, for the first five months the group met and discussed their personal sleep issues. This period was a necessary prerequisite to the execution and dissemination of the project, or the 'action stage' of participatory research. Charlier et al (2009) conclude that face-to-face communication is required to build long-term constant relationships and that this is time consuming. It was through regular meetings that relationships were formed, knowledge was co-constructed and participants tackled issues with their children's sleep. After five months in October 2009 participants were equipped and enthusiastic to share their new body of knowledge.

At the sixth meeting I asked the group to start thinking about what kind of sleep intervention would appeal to them. I told them that I anticipated that the intervention would last approximately six months and that it would be delivered via children's centres, due to Sure Start's involvement and the appropriateness of children's centres for communicating with parents. Initially, I asked the group for suggestions but they wished for more guidance and asked me what kind of interventions we could do. I provided a few suggestions to get the ball rolling, including holding workshops to provide parents with sleep information, running a health promotion campaign with posters and providing parents with written materials. This generated discussion between participants. They felt that sleep workshops would be of interest to parents but were concerned about the ongoing difficulty I had arranging times, rooms and crèche places for our meetings with Sure Start staff, not to mention finding a suitable time for parents, especially those working part-time or with more than one child who had school runs to consider. One member of the group suggested a workshop where children could be present. This seemed possible if we utilised the stay and play facilities, and Sure Start had delivered successful themed days during holiday periods via stay and play in the

past. After an unsuccessful brain storming session the group was not satisfied that they could think of a workshop activity that would appeal to very young children and inform parents. Another member said she thought it might be easier to do posters and leaflets that would be available for all parents to see, or take home and read at their convenience, over a period of time. The other members of the group agreed, stating that they thought it would be the most straight forward intervention and more inclusive, capturing parents who only utilise the centres for appointments or one off activities. The group asked if we could have a notice board where we could provide and update information, which I said I would arrange. I asked the group to consider for the next meeting what information they thought should be included in posters and leaflets and whether they wished to have a name or logo. One participant said that the name 'Sleep Solutions' had just come to her. The group was impressed by her suggestion, finding the name to the point and professional. The same participant suggested that instead of having an 's' at the end we should use a 'z' to represent sleeping, which again met with the group's approval. One participant asked if we could use a simple clip art picture as our logo, similar to the ones I had included on recruitment posters. The rest of the group thought that a clip art picture with our name would look more professional than trying to design one and that we could put our name around it, to make it our own. I asked if anyone wanted to have a go at selecting that but all participants stated that they were not very good with computers. I said that I would bring a number of designs to the next meeting for them to choose from.

At the following meeting, after everyone had introduced themselves to a new attendee and discussed the trouble she was having with one of her children's sleep, I presented the group with a selection of logos. The group provided positive feedback and agreed on the picture they liked best, the design of the writing around the picture and the font and colour. I agreed to redesign the logo following their instructions. Participants had been thinking about the notice boards and requested a specific one in the café in the main children's centre, High Flyers, where our meetings took place. I provided the group with a range of questions for them to think about during

the meeting that moved from general to specific, including how many posters and leaflets the group wanted to produce, ideas for topics, what information they hoped to convey to other parents, and lay out. I also provided the group with information on the transtheoretical model and social cognitive theory often used in social marketing interventions. Both relate to how to change people's behaviour (see section 2.14). Participants were interested in the theories but I struggled at subsequent meetings to encourage them to consider suggestions in terms of them. For example, I suggested that posters could concentrate on a stage of the transtheoretical model at a time, so each month participants were encouraged to move along the process of behaviour change. The group was more enthused about sharing their own experiences of making changes, and hoping that these were found helpful by parents, than in actively trying to change parents' behaviour.

One participant had brought leaflets on sleep by the two well-known firms Cow and Gate and Johnson's, which she thought might provide the group with inspiration for the design and content of materials. The group disliked guidelines on the number of hours children should sleep, stating that they had always found prescriptive guidance worrying, because 'you immediately think "argh my child isn't sleeping enough," even though you thought their sleep was fine before that.' This initiated discussion between parents on how they wanted their information to be perceived by parents. The group felt strongly that they wished to emphasise that there is no 'one size fits all' approach to dealing with children's sleep. Participants believed that the information should be a summary of the kind of discussion we had been having in group meetings during the previous five months, informative but informal, summarised by one participant as 'one mum chatting to another.' Therefore, the group decided that the most appropriate starting point for the intervention was bedtime routine as this topic had been discussed by the group at every meeting and was relevant to all parents, not only those experiencing difficulties with their children's sleep. The group wished to launch the intervention with one poster and a leaflet, and follow this with one every month for six months. Participants were reluctant to term the leaflet 'bedtime routine' as they thought that this was not

necessarily something that would attract interest and they were conscious that the leaflet was not prescriptive but instead provided parents with a range of suggestions to dip in and out of. Instead, one participant suggested that the poster and leaflet were titled ‘The four bs for a blissful bedtime: bottle, bath, book and bed.’ Another participant who had breastfed her child felt that including bottle in the title might be off putting to breast feeding mothers. I reminded the group that preschool children were the primary age group that the intervention was aiming to address, and was concerned that the inclusion of a bottle sounded like the leaflet related to younger children. The group compromised with the title ‘Everything you need to know for a blissful bedtime for you and your child’ (see Appendix I1). The group discussed content and I noted down their list of their suggested bedtime activities and suggestions to help a child settle on an evening. They asked me to produce a ‘science’ section for the leaflet, based on the information I had brought to the group. I asked whether the group wanted to use clip art pictures for materials and offered to investigate purchasing promotional photos from a company. I was surprised when one quieter member of the group, suggested that the group took photographs of their own families to use in intervention materials. This was not an idea I had contemplated and I did not expect the group to consider the suggestion believing that they might regard it as an invasion of privacy. Therefore I was taken aback when the majority of participants responded favourably to the suggestion, stating that they thought that this would make materials more interesting and realistic. One participant suggested providing details about the group members and why the group had been established. Another developed this idea to suggest that we included personal details and quotes with photographs. We agreed that members of the group would, if possible, send me two photographs, one related to bedtime routine and one family shot. These would be accompanied by their personal blurbs. I offered to draft the leaflet and poster and circulate them by email for the group’s approval.

I made a large contribution to the design and content of the first leaflet. I based the majority of the copy on the group’s discussion of content during the meeting, placing the points in straight forward and accessible wording, and determined the

full content of the science section. I selected photographs I had received from group members for inclusion in posters and leaflets. The direct content from members included a paragraph by one participant explaining why she considered a bedtime routine important in her family, and another participant's information on the project. In the 'What helps children to sleep?' section I added an item of my own, which was not watching television in the hour before bed. This was something that I had raised with the group a number of times during meetings but not a point that they agreed with, even though I had tried to explain the scientific reasons for it relating to the effect of white light on brain chemistry. Participants were in agreement that watching cbeebies bedtime television before bed was one of their children's cues that it was bedtime and would have liked to include it as a suggested bedtime activity. The group believed that age appropriate television could not be harmful for their children's sleep. It was noteworthy that participants were very interested in scientific explanations about their children's sleep apart from in this instance. I believe that this was because television watching is commonplace, enjoyed by children, classified as a 'quiet activity' by parents, and fitted in with participant's routines. I circulated a draft of the leaflet and two A3 posters, one concentrated on suggested bedtime activities, and the other on the intervention, both based on the leaflet. I did not draw the group's attention to any specific points but stated that I wished to make sure that everyone was satisfied with the leaflet before print and that I was happy to make any changes. I received confirmation that all participants were satisfied without amendments.

In the meantime I met with the steering group who commended the group on the first materials. I requested the notice board in High Flyers but the manager stated that she thought that the notice board at the entrance of the centre would be more appropriate, and was unwilling to consider the one the group wanted, which was certainly a more prime location and the manager was unwilling to relinquish it (at the time it displayed information on Sure Start's healthy eating policy). I argued that this was not in an eye catching position, as it was off to a corridor on the side. The manager said that they would be moving some activities like Stay and Play into

a room off that corridor but suggested in the meantime we could put something up on the wall to attract attention to the notice board as long as we didn't attach it to the paint work. The other members of the steering group made a number of suggestions of ways in which to attract attention and make a display more interactive, including the idea of using a washing line with items relating to sleep pegged on it and a pillowcase with our logo.

I brought the printed leaflet and posters to the next meeting and the group was delighted with its appearance. However, participants were disappointed with the allotted notice board although agreed that the location would be appropriate once the activities had moved to this corridor. The group were keen to use the suggestion of a washing line leading to the notice board to draw attention. They agreed that they were always drawn to interactive displays and suggested that we pegged up items like slippers, toothbrushes, books, bottles or cups and dummies. I suggested encouraging parents to provide ongoing opinions on the intervention by writing their comments on feedback sheets and pegging these to the line. The notice board was large and the group felt that it would be very bare with only one leaflet and two posters. They asked if I could produce two A4 posters based on the information I had given them on melatonin and the importance of darkness at night and natural light in the morning. One participant stated that she thought we should also try and make materials relevant to the time of year and any specific issues encountered, like the clocks had recently fallen back. Another suggested that we included a poster about bonfire night which fell the same week as we were launching the intervention. The participant stated the wording that they wanted on the poster and a clip art picture of fireworks. I turned the group's attention to the leaflet for the following month. Three participants felt strongly that night waking should be covered next as this was or had been their main issue with their children's sleep. I was concerned that this topic would only be of interest to parents of children who experience night waking, rather than the parents of all preschool children, who the intervention was targeting. However, the rest of the group agreed that night waking was an appropriate topic and it was proposed that the three participants would contribute

text on their experiences via email. One participant had used controlled crying successfully and thought that a section on implementing it should be included. Another participant felt that some parents would be put off if we used the term controlled crying so we agreed to simply term that section 'Dealing with tantrums and crying.' This section was also to include the point that if the tips didn't work for parents then this wasn't the technique for them but something else would work. Participants were very concerned that they had all felt or been made to feel failures when interventions had not worked for them and did not want parents to feel that the success of an intervention reflected upon their parenting skills. We agreed that I would write this section and circulate a draft copy of the leaflet and a poster based upon it to the group for approval. One participant suggested that we put the month and year on this leaflet and subsequent ones so that people were aware that leaflets were new. I agreed and also stated that I would produce signs highlighting new leaflets with the month on. The group was keen to provide giveaways to parents and suggested contacting companies such as Johnson's Baby for free samples of their products and having some balloons printed for parents to pick up. I thought that these were good ideas but explained that I would have to run them past the steering group first.

The copy contributed by two participants for this leaflet was much more detailed than for the first and was based on participants' personal experiences with their children. I made two inclusions of my own in the leaflet, that bed sharing is not suitable with infants if you are on medication or have been drinking, or if you smoke, and that controlled crying is not suitable for children under one year of age. These warnings are based upon research findings and therefore I felt ethically obliged to incorporate them and no participant commented on this when the draft was circulated. The leaflet also included one participant stating, 'The girls know after Cbeebies bedtime story that we all sing the bedtime song it's time for peeps.' Although I had stated in the previous leaflet, as discussed above, that viewing television before bed can disrupt sleep and had not included this as a suggested

activity before bedtime, I was happy to include this participant's comment as she wished to include it and it was an accurate reflection of her experiences.

At the December meeting the group began by discussing plans for Christmas. A couple of participants stated that they had just asked Sure Start staff if there were any special events planned for Christmas and had found out that the centre would be shut for a fortnight. This led the group to decide that they would not produce a January edition of the leaflet. They felt that it would give people more opportunity to see the December leaflet and ease the pressure on themselves. The group was keen to discuss how I and the steering group thought the intervention was going. I told them that the steering group had really liked their materials, although were concerned that posters were quite text heavy and too dense for parents with literacy problems. They thought that that was something we should bear in mind for the future. The steering group had suggested a relaunch of the notice board half way through the intervention, where all the backing paper would be refreshed. They suggested that more illustrative information could be included on the boards, such as pictures with ticks and crosses illustrating whether they helped or hindered sleep. The group was happy for me to carry out this suggestion. I also informed participants that the group had unfortunately vetoed their suggestion of giving away company samples, stating that it would be considered company endorsement by Sure Start. Balloons were also thought to be an inappropriate giveaway as the group deemed them to be a health hazard with choking potential and the possibility of frightening children. The group were annoyed by these decisions, considering them an over reaction, especially with regard to the balloons. After debate the group decided that they would instead like to purchase a number of books related to bedtime and sleep to be loaned free of charge to parents. The group discussed the titles that they thought would be most appropriate.

I informed the group that I had replenished the leaflet stands for the 'Blissful bedtime' leaflet a number of times since the launch of the project and had also left copies of both leaflets with centre staff to do the same if I was unavailable. We

discussed the other centre's notice boards, all of which had been seen by at least one of the participants. We agreed that their locations were not what we would have chosen (centre staff determined which notice board we would be allotted in all centres). Participants had seen parents looking at the materials and picking up leaflets and overheard some positive comments, as well as parents having pegged some nice comments on the washing line display. The conversation moved on to participants' families and the current issues they were experiencing with their children. One participant suggested that the next leaflet and poster should concentrate on developmental issues as the group was discussing potty training, giving up dummies, moving from a cot to a bed and cutting out night bottles. The rest of the group agreed that this would be of interest to all parents and was relevant to boosting parents' confidence. With that in mind, the participant suggested that the books we were talking about purchasing included one on giving up dummies and one on potty training.

I was able to inform the group at the next meeting that Sure Start were willing to purchase 15 books for each centre and nursery based on our suggestions after discussion at the steering group. Participants decided who would contribute to the next leaflet and three participants were keen to provide me with text. We talked about a general paragraph to be included on giving up dummies. This was the only section that I wrote for this leaflet, paraphrasing the group's discussion, which I felt illustrated an increase in the group's confidence and willingness to share their experiences. Participants' self esteem had been boosted by positive feedback, the group believed that people were interested in what they had to say and were more comfortable to share their 'know how' with other parents. The problem I encountered with this leaflet and the subsequent two leaflets was trying to fit in as much copy as possible, as I was very reluctant to change participant's text or make deletions. This meant that the leaflet was much heavier in text, even after a reduction in font size. However, I believed that participants' contributions were very accessible and interesting, and their conversational style really embodied their original intention to produce information like 'one mum talking to another.' In the

end I did occasionally have to make minor deletions, usually where I felt that a participant made the same point twice, just in order to fit the information in. I amended minor spelling or grammatical errors, but tried to make as few changes as possible, as I was also conscious that I did not wish to offend any participant.

At the following steering meeting, when the developmental leaflet was already available, the area Sure Start manager informed me that she had been quite shocked when she had seen the photo on the back of the leaflet, which showed one of the participant's daughters sitting on the toilet with her trousers around her ankles. The manager told me that she had been concerned about such a photo being on public display and that we have to be very careful about child protection. She said that after some deliberation that she had decided that as it was okay with the mother it would have to be okay with Sure Start. I was surprised at her concern as the photo was not at all revealing, and I was grateful that the group was not going to be asked to change it as I believe this would have caused considerable indignation.

The next leaflet and poster focused on the group's interest in the relationship between sleep, food and physical exercise. Three participants offered to make contributions to the leaflet and the group asked if I would write about the hormones linking sleep and obesity. We also brainstormed some suggestions for healthy snacks for inclusion. I was asked by the steering group to include mention of a new leaflet available through Sure Start children's centres, 'Terrific Treats for Tiny Teeth.'

Participants decided in the next meeting that they had covered the most interesting topics around sleep and as it was their final leaflet and poster they felt that it should be an evaluative one, which would state what had changed for them since the intervention began, and give parents who were struggling with their child's sleep the belief that it would not always be like this. This leaflet was titled 'Sharing our stories' and was contributed to by the remaining five participants who had been members of the group since the beginning. This leaflet is again very text heavy, and

it was wonderful to read what participants felt that they had got out of attending meetings and the changes in their children's sleep or the changes they still had to implement. The main theme in this leaflet is that participants felt better about their children's sleep simply from meeting other parents in similar situations, and this feeling of comradeship and hope is what participants were hoping that parents reading their materials might also find. Participants asked for me to include a photograph and paragraph about what I had got out of meetings, which I was a little reluctant to do, as I did not feel that it would be very relevant to parents. However, after the group had all shared their personal experiences, it seemed unfair not to contribute something and in one sense the groups' desire for me to make a personal inclusion made me feel that the group viewed me as an equal member. I was uncertain as to whether this leaflet would be of as much interest to parents as the earlier ones but they vanished from the stands with as much regularity as the former. The leaflets can be viewed from Appendices I1-I5.

The leaflet was launched at the same time as the notice boards, one in each of the four centres in the area, one in a local school nursery and one in a private nursery based within a Sure Start children's centre. Some of the posters were changed each month although a constant poster provided details on the group and the intervention and invited feedback and attendance at meetings.

**FIGURE 1: An Original Sleep Solutionz Notice Board (left) and a Revamped Notice Board (right)**



The sharing of personal experiences and family photographs was very well received by the community. Feedback pegged to the board included ‘love the photos of real people and children,’ ‘helpful tips’ and ‘I know some of the people on the pictures so it’s nice that it’s real and you know that the ideas are realistic.’

Originally this intervention was about providing parents with information on helping children to get a good night’s sleep and interventions to address sleep issues. The project was made novel by the fact that parents were contributing not only their ideas, but their own photographs and words to materials. However, as this project progressed the intervention became much more than participants selecting educational information to communicate to other parents, but instead about participants sharing personal stories and experiences relating to their families. This intervention stands alone in providing suggestions and stories about children’s sleep in such an open, relaxed and personal manner.

### *5.3.1 Personal and Social Transformation*

Participatory research provides a methodology that enables the development and assessment of a community health intervention with the community's involvement, thereby empowering the community to create social change (Kelly, 2005). In this case, the participatory research provided participants with a sense of control over their situation and they successfully implemented strategies to help address problems with their children's sleep. Participants also felt that their problems were diminished after talking openly with others in similar situations.

Following the launch of Sleep Solutionz all of the participants experienced other parents recognising them from the materials and wishing to tell them how much they enjoyed their story or to share their own story. One participant described how a mother at a Stay and Play approached her having read the participant's piece on bed sharing. The mother shared her story and said that she never discussed her bed sharing with anyone. When the mother had finished she didn't ask the participant for any advice, just simply stated that she 'felt much better for having talked about it.' These experiences made the participants aware of the impact the intervention had on the community and also boosted their own self esteem; by sharing their own personal narratives they'd been able to help other parents. As full-time mothers who had left work to raise families, participants stated that they had since experienced times when they'd been made to feel that they had nothing to contribute, but Sleep Solutionz provided them with the opportunity to make a different kind of contribution. One participant said 'it gives you a real boost to know that people are interested in what you've got to say, I've felt privileged to be part of the project.'

The personal empowerment of participants meant that transformation through the participatory research was not limited to the outputs or actions of the project, but also transformed the individuals involved. Parents participating in the project increased their social and cultural capital and therefore augmented community resources (Diantro & Silverstein, 2006). The sleep intervention enabled participants

to share their education, ideas and experiences with the wider community; increasing local knowledge and addressing a wide range of common parental needs. The notice boards were also used to feedback to the wider community the evaluation findings of the project. It could also be argued that the research led to wider political learning and action (Stuttaford & Coe, 2007). One of the participants became a parent representative on High Flyer's management board and two participants joined their local centre's Parents' Forum, one of whom sat on an interview panel for the new area children's centre manager, all helping to shape local Sure Start decision making.

## **5.4 EVALUATING THE SUCCESS OF THE PARENT INTERVENTION**

### ***5.4.1 Reflections on the Process of Participatory Research***

The group was keen to share their reflections on participatory research with a wider audience and produced a joint paper. This was done using the same method as the Sleep Solutionz materials, with participants emailing me their individual pieces, which I amalgamated into one piece using a group voice and sent around for their approval. The paper appeared as a general feature article in 'Community Practitioner,' the journal of the Community Practitioners' and Health Visitors' Association (CPHVA) (Newark et al., 2011).

The participants' reflections in this paper on establishing a group, ownership of the project and recommendations for practitioners showed the importance of participants finding the researcher approachable and similar. Participants felt that they had related to me easily because of my enthusiasm and friendliness, and even mentioned my casual dress sense, as they thought 'power dressing' would definitely put full-time mothers off. Charlier et al argue that a researcher should have a similar background to participants and have 'in-depth understanding of and experience in the community milieu' (2009:1) when undertaking community participation work. I shared similar socio-economic characteristics with my participants; my gender, age,

ethnicity, residence in the locality and local accent were probably crucial factors in forming our relationships, even if participants were not entirely conscious of this.

#### ***5.4.2 Participatory Research Groups' Semi-Structured Parent Interviews***

Participants were enthusiastic to continue meeting after the completion of the Sleep Solutionz intervention to evaluate its success with parents. This evaluation was separate from the pre-intervention and post-intervention questionnaires conducted with respondents recruited prior to the interventions by myself detailed in the general methods chapter. The group decided on a list of semi-structured questions about the intervention that they wished to have answered, including whether parents had looked at notice boards and whether they'd picked up leaflets, and if not why not, and whether the information had been of interest or use to them (see Appendix J). Participants had not received training on interviewing techniques but appeared confident about administering questions. Participants conducted the semi-structured interviews with a convenience sample of parents accessing Stay and Play sessions in each of the centres. Respondents could be parents of children of any age. The group was keen to be able to provide parents with a gift for their time so we made up small bags with a set of the Sleep Solutionz leaflets, an oral health pack and a bath toy or wash mitt. Participants stated that this made them more comfortable about stopping strangers and asking them details about their family life. In total, 45 interviews were conducted by three of the participants. One of the questions was whether respondents would have liked the intervention to have covered any other sleep areas and two respondents indicated that they would have benefited from information on dealing with nightmares and daytime napping. The group wished to respond to the requests so produced additional information for the notice boards on these topics. Notice boards were updated to display findings from the group interviews, which are shown in Table 6.

**TABLE 6: Responses from Participatory Research Group Interviews with a Convenience Sample of Parents**

QUESTION	No. n=45	%
How many parents looked at the Sleep Solutionz notice boards?	18	40.0
How many parents picked up a Sleep Solutionz leaflet?	17	37.8
How many parents indicated that boards/leaflets were of interest to them?	18	40.0
How many parents felt more aware of their child's sleep as a result of the project?	14	31.1
How many parents told somebody about the project or passed on a leaflet?	13	28.9

Two of the respondents interviewed indicated that it was their first visit to a Sure Start children's centre, another two were grandmothers, one respondent was a great aunt and another a child minder. If respondents had not looked at the boards or the leaflets they were asked if anything would have resulted in them paying them more attention. The most common response was 'bright and colourful boards' and 'large writing.' One respondent indicated that they would have liked a member of staff to point them out and another suggested using a stand in place of a notice board. A number of respondents stated that they would pay attention to any issue about childcare or activities taking place in the local area, whilst two commented that they would only pay attention to issues relevant to their child, and sleep was not considered a problem.

Respondents were asked if they had read anything on the notice boards or in the leaflets that they had tried or were considering trying relating to their child's sleep. A respondent indicated that they had tried controlled crying but had read in the leaflets that it is not suitable for children under one year of age. One respondent had tried not giving certain drinks and establishing the same bedtime every night. Another had moved their child from a cot to bed, and was trying to be consistently firm at bedtime. Quiet time for bed was being practiced by one respondent who had also substituted a bottle for a cup on an evening. A routine was being implemented

by one mother ('milk, bath and story'), whilst another stated they had established a routine and were considering controlled crying. One respondent indicated that she had tried a few ideas but during the day she struggled to get her son to sleep anywhere but his pushchair. Three respondents stated that they had made changes but did not elaborate on these.

Respondents' comments on the project were varied and included:

- 'Good advice'
- 'Interested in other parents' experiences'
- 'Good idea about getting parents together, discussing sleep issues'
- 'Intervention looked good'
- 'I read each of the leaflets last week and found them very helpful'
- 'Appealing pictures and photographs to look at, leaflets to take away'
- 'Leaflets to take away, interesting'
- 'Enjoyed reading other mums' experiences and tips'
- 'I have kept them in case I need them in the future; at the moment my son sleeps well. I did read them and picked up some ideas'
- 'Looked at leaflets of real families and how they have tried to get their children to sleep through. Interesting because not all children sleep through the night – like mine!'
- 'I'm not the only one who finds it difficult to get children to sleep same time every night'
- 'I feel more confident that it wasn't just me that had earlier problems'
- 'I read in the bedtime routine leaflet about sun and melatonin levels, it was quite informative'

#### ***5.4.3 Post-Intervention Semi-Structured Interviews***

31 questionnaires from the pre-intervention parent intervention sample (n=39) indicated that they were happy to be contacted again post-intervention. Reinitiating contact with the sample proved difficult. Phone contact was established with 10

respondents (one respondent completed two questionnaires for different children). The remaining 20 respondents received postal questionnaires with open ended questions about the intervention. Eight questionnaires were completed and returned. In total 19 respondents completed both the pre and post parent intervention questionnaires/interviews (description of the sample can be seen in section 7.4). 13 of whom were recruited through Sure Start children's centres, and three were recruited through each of the two participating nurseries.

Seven of the 13 respondents recruited through Sure Start children's centres had not used a centre in over six months and were consequently unaware of the intervention. One respondent had used a children's centre only once during the duration of the intervention and had not noticed the intervention materials. A respondent from the private nursery did not take or collect her child from the nursery and was therefore unaware of the intervention. One respondent from Thornaby Church of England School nursery stated that they had not received any leaflets from the school so couldn't comment on the intervention. The reasons given by participants for no longer using children's centres included having a second child and not needing the same level of support or social opportunities, or having enough time; 'the first time around you don't know many people and need more reassurance, second time around you know more people and have more to do.' Attendance at school nurseries and children having outgrown activities were also provided as reasons for nonattendance.

In total, only three participants from the parent intervention had seen the intervention materials, two from private nurseries and one from the school nursery. One of these respondents stated that they had looked at the Sleep Solutionz notice boards but not read any of the leaflets as they felt that the materials were not of interest to them; they did not have any current sleep issues with their children. They stated that they were not more aware of children's sleep; they had not made any changes to their child's sleep or bedtime practices and were not planning to. This respondent felt that the intervention materials missed out referencing to Autism

Spectrum Disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD) problems associated with sleep and where help could be sought for these.

The other two respondents had looked at the intervention notice boards and read the leaflets. One respondent stated that they thought the leaflets were ‘good’ and ‘of interest as my son has always woken during the night’. The respondent didn’t feel that the leaflet had made them more aware of sleep, as it was something that they felt they already knew a lot about. They did not try, or think about trying, anything new in relation to their child’s sleep. The respondent passed one leaflet to a friend at work.

The second respondent stated that they had found it ‘very interesting to read about other children’s sleep’ and that the leaflets were ‘easy to read.’ It made the respondent more aware of what problems people have and she picked up a few tips, ‘to be firm and not relent on the bedtime routine’. She stated that when leaflets were distributed at the school nursery the other mothers were interested, ‘one mother said she would have to read the leaflets as she’s having problems sharing a bed with her child still.’

The findings highlight the difficulty in carrying out an intervention of any duration within Sure Start children’s centres. The client base is highly transient and parents use centres for short periods in their family’s lives. Evaluating the success of the intervention with the parent intervention sample group is problematical as half of the respondents did not have access to the intervention. I discussed this issue with one of the Centre Area Managers who was not surprised. She said ‘it’s the nature of the people accessing the centres, and people have different family circumstances, it might be that they only ever use the centre once or a handful of times.’

#### ***5.4.4 Focus Groups and Interviews with Sure Start and Nursery Staff***

Four focus groups were undertaken with a group of home visitors (n=6), health visitors (n=6), crèche workers (n=7) and childcare facilitators (n=4). Three interviews were conducted, two with Sure Start children's centres' customer service assistants and one with the manager of Little People nursery. They provided insight into staff members' feelings on the success of the intervention and its uptake amongst parents.

All of the respondents had seen the intervention notice boards, and described them as 'lovely' and 'bright and colourful,' which was thought to have 'drawn parents to them.' The nursery manager felt that parents in her nursery had shown more interest in the intervention notice board than other notice boards. She felt that parents were more likely to stop and read the board than take a leaflet. The position of the notice boards was thought appropriate by all respondents, describing how the ones in the corridor were utilised by parents waiting for appointments, or those passing on the way to activities and classes. The participatory group had been dissatisfied with the location of one intervention board because it tended to be blocked by children's prams and buggies. However, the customer services assistant at this centre felt that this was an advantage and said that she often saw parents stop and look at it when parking or collecting their pram. Only one notice board was located inside an activity room and the childcare facilitators described having seen many parents look at it during sessions.

The leaflets were discussed with enthusiasm by interview respondents and by crèche and childcare facilitators, although the crèche team had not read all of them. They thought that this was probably due to not having any copies in the crèche room and decided that following the focus group they would bring some in for reference. The respondents described leaflets as having 'got it spot on' and said that they had kept copies for their own use. A number of respondents felt that the leaflets were of personal interest to them and 'that from a parents' point of view this would have

been brilliant.’ The inclusion of bed sharing was thought to be a positive thing because, ‘it’s quite shunned upon and people are scared to say that they actually do it.’ One customer services assistant reported that the midwife that attended the centre often came out for leaflets for parents. Another described how grandparents often encouraged parents’ to look at the materials or took a copy of a leaflet to pass on.

Particular benefits of the leaflets were identified as ‘the sharing of personal stories’ and ‘as featuring local parents.’ Respondents felt that it was good for parents to know ‘they’re not alone’ and described how familiar faces had attracted parents to the literature, ‘when people see faces they recognise that makes it a little bit more...they trust it a little bit more...I hear them say ee there’s so and so...’ It was thought that as long as the intervention included parents from Stockton-on-Tees it was not essential whether parents knew the other parents personally or not, it was their locality that was important.

The home visitors and health visitors had not read any of the literature, bar the very first leaflet, which was distributed at team meetings. I asked if time pressures had been a barrier to respondents reading leaflets. Home visitors affirmed that this was one of the issues, as well as being familiar with sleep issues, ‘we know it anyway.’ They also stated that that they had been put off by the presentation, ‘when I picked up the leaflet it wasn’t what I expected, I opened it up and thought, “oh that’s a lot of text,” so I put it down and picked the next one up, and thought, “oh that’s a lot of text.”’ Another stated that she wouldn’t ‘bother’ to read it herself, so would not give it to a parent. One health visitor was also of this opinion, ‘it’s even put me off reading it, I’d skip through it and think eurgh.’

Health visitors informed me that they had not had a chance to use the materials but if they had thought they could use the leaflets they would certainly have done so. This was linked to the change in health visitors’ role, ‘we rarely do any sleep work anymore, only in clinics, we could certainly give them these, but we don’t tend to go

into any depth with their problems any longer.’ This responsibility has fallen more into the remit of home visitors and nursery nurses. Much of home visitors’ work is carried out in people’s homes, so some of the client base may not have had the opportunity to access leaflets in the children’s centres. However, the density of leaflets’ text was considered a big problem by home visitors. They stated that many of the parents in the area have literacy problems and that this is often something they don’t disclose initially. They felt that parents would be ‘put off by the amount of information’ and that their client base would not have the time or inclination to read the leaflets, ‘a lot of our family’s lives are quite chaotic...taking the time to sit and read through that, they just wouldn’t...I’m saying a lot, but it’s really the minority...but they just wouldn’t.’ They felt that the length and layout of leaflets didn’t lend themselves to reading over with parents, ‘I couldn’t read through this with somebody.’ Leaflets were also not considered the best means to communicate with parents, ‘if you say, “here’s some leaflets, go and read that,” the children either wreck them or they put them in the bin.’ Literacy issues were also mentioned in relation to the leaflets by health visitors. Both home visitors and health visitors felt that a small number of bullet points would be more appropriate than paragraphed text.

The issue of leaflets being ‘text heavy’ was not raised by respondents in the other focus groups or interviews, but it was a question I posed at the end of sessions. Respondents agreed that there was a lot of text but did not feel that this was necessarily a problem, a childcare facilitator stated, ‘they are a bit text heavy, but that’s what they need, the information, I think our parents would ask us to go through them if they were struggling.’ This view was shared with the crèche team who stated that parents would, and had in other circumstances, asked staff members to talk them through information. A customer service assistant said, ‘no not at all, maybe when you first open it, but then as soon as you’ve read that little bit you want to read more anyway. I didn’t find that people skimmed through them.’

The content of leaflets was considered unsuitable for some parents being seen by home visitors, 'it wouldn't be practical to implement some of these suggestions with the families we're working with. It might be the one thing keeping that family sane, like the television in the bedroom.' Respondents felt that guidance was very individual and had to be based on family circumstances.

Home visitors also raised a concern that the leaflets featured 'happy families' with both parents and wanted to know 'where are all the single parents?' The appearance of fathers on leaflets was something that was also commented on positively by other respondents, 'it was nice that you got some dads on them too because a few dads looked at them and they quite liked that, one commented on it.'

I asked respondents if they had ever recommended the PR group to a parent, three respondents had; a home visitor, a crèche worker and a childcare facilitator. A nursery nurse present at the health visitors' focus group stated that she 'would work with a family one-to-one and offer them support in the home if they wanted that, but it would depend on the family whether I recommended them to the group and whether they'd be willing.'

The inclusion of the bedtime books borrowing scheme was discussed with the customer services assistant and nursery manager and considered a beneficial addition to the intervention. Although only a small number of books had been borrowed, the books were in frequent use by parents and their children in the centres and nursery, often when waiting for appointments, or in the nursery's case, when parents or staff were helping to 'settle children in' by spending time with them outside of the room and away from the other children. Respondents stated that they had seen parents writing down the details of books that children had enjoyed.

Overall, the intervention was considered a good idea by all of the respondents and children's sleep as being something that parents often have difficulties with and are interested in. The inclusion of personal information from local people was believed

to be an essential element of the intervention. Although the home visitors and health visitors raised concerns with the leaflets, they felt that a condensed version with bullet points would be something that parents could benefit from, 'because I think then it means it's not just us saying do x, y and z, but someone can read about someone else and see that they've come out of the other side of it.'

It was disappointing that home visitors and health visitors had not used the intervention materials in their roles, and that home visitors considered the leaflets too dense for their client base. The textual nature of the leaflets was not an issue raised in other discussions with staff members, or via interviews with parents conducted by myself or the participatory research group. The home visitors and health visitors' opinions were not based on feedback from parents. As home visitors and health visitors had not read materials prior to the focus groups they could not have been very interested in or committed to the intervention, even though materials were unique to the centres having been designed by local parents. It is also possible that respondents in these groups found the intervention superfluous to their own work, and considered one-to-one work with a health professional necessary to address sleep issues. However, this intervention was intended to inform all parents about healthy sleep practices for their children, and was not intended to target specifically those with children with sleep difficulties.

Respondents from the other groups and interviews all felt that the intervention could not have been improved. Suggestions for future work included more material about sleep in older children and younger infants. The intervention was regarded as successful, 'the parents that needed it, accessed it' and 'the feedback from parents has only been positive.'

## **5.5 CONCLUSION**

Establishing a participatory research group took a great deal of time and effort and it proved difficult to recruit the range of group members I had hoped to include, for

example, fathers, grandparents and child minders, and parents who considered their children to be good sleepers. It was necessary for the participatory research group to meet for a number of months in advance of discussing the intervention in order to address issues with their children's sleep and to form relationships with one another (Diantro and Silverstein, 2006). I played a larger role than I had anticipated in producing intervention materials and ensuring that the group kept to the PhD's time schedule for the intervention, adopting a directive/non-directive leadership approach (Dworski-Riggs & Langhout, 2010). Power imbalances existed between the participatory research group, the steering group and myself and these are considered further in the discussion alongside problems encountered during the development of the parent intervention, for example, differences between the participatory research group's goals for the intervention and my own. The participatory research group designed a very personal intervention that shared their experiences and photos of their families. Participants were empowered by the positive contribution that they had made to their local community (Diantro & Silverstein, 2006) and the intervention led to wider political learning and action (Stuttaford & Coe, 2007) when members of the participatory research group joined a Sure Start children's centre management board and the parents' forum. The participatory research group undertook their own evaluation of the intervention, using semi-structured interviews that found that the intervention had been considered useful and realistic by the majority of parents. It was very disappointing and problematic for the evaluation of the parent intervention that it was difficult to reinitiate contact with the sample post-intervention, and of 19 respondents only three were aware of having seen the intervention. This was primarily due to respondents having stopped using children's centres. Evaluation of the intervention with Sure Start children's centre staff and nursery managers was, on the whole, very positive, with comments relating to the popularity of intervention materials and how interesting and easy to read they found them. Health visitors and home visitors provided feedback that they considered materials too dense and had not used them in their work with families.

## **CHAPTER 6: NURSERY INTERVENTION: METHODS, RESULTS AND REFLECTIONS**

### **6.1 INTRODUCTION**

This chapter is concerned with the design, delivery and evaluation of the nursery intervention. The challenge of doing research with young children and their level of participation is discussed. The Early Years Foundation Stage (EYFS) and its impact on the design and delivery of the intervention activities are described. The success of activities is reflected on, and also the influence of the different settings on activities. The impact of the nursery intervention is examined via data from semi structured interviews conducted post-intervention with respondents from the nursery intervention sample group. Interviews with nursery staff elicited their opinions on the intervention.

### **6.2 RESEARCHING CHILDREN**

Engaging children in research is recognised as increasingly important. Historically, research concerning children was carried out with caregivers, for example parents and teachers, because children were not considered to have the necessary verbal skills, understanding or memory to adequately communicate their feelings and experiences (Docherty & Sandelowski, 1999). However, children can be considered ‘social actors with a part to play in their own representation’ (Prout, 1999:Foreword). The sociology of childhood is concerned with development and levels of maturity, which vary between different individuals, suggesting that age alone cannot be an indicator of aptitude (Birkbeck & Drummond, 2007). The competence of children can be argued to be different from adult competence, but not less significant, children ‘are party to the subculture of childhood which gives them a unique “insider” perspective that is critical to our understanding of children’s worlds’ (Kellet, 2005).

The move from research being conducted ‘on’ children, to children becoming ‘active participants’ in research, evolves from policy changes such as the ‘United Nations Convention on the Right of the Child’ (Unicef, 2010). Included in the four core principles of the convention is ‘respect for the views of the child,’ children should have the right to participate in activities and decisions that are relevant to them. More recently, the United Kingdom government initiative ‘Every Child Matters’ (Department for Education, 2003) stated that children should have the right to a voice in decisions made about their care. It has been suggested that the majority of child participation is nominal due to ‘...the adult manipulation, unequal power-relations and the adult focus of such research. It is the adults who frame the research questions, choose the methods and control the analysis. For the most part, children are unequal partners’ (Kellet, 2005:5).

A literature review by Clavering and McLaughlin (2010) about children’s participation in research identified three different levels: research on children, research with children, and research by children. Research on children is based on caregivers’ personal understanding of children’s lives. Parental accounts and observation can elucidate children’s viewpoints. The major disadvantage of research on children is that ‘children remain objects framed by an adult-centric worldview’ (Clavering & McLaughlin, 2010:4). Research with children often involves the researcher spending time forming a close relationship with children. This relationship can provide insights into children’s ‘visions of life’ (Clavering & McLaughlin, 2010:5). However, the agenda for research is still established by adults and research with children cannot be said to be child-led. Research by children permits children to establish their own research agendas, often via a participatory research approach. Nevertheless, adults may still guide and facilitate this research.

An obstacle to conducting research with young children is seen as adults’ tendency to perceive children as young and immature, including ‘talking down to children, using over-simple words and concepts, restricting them into making only superficial responses...’ (Alderson, 2001:140). It has been argued that adults cannot effectively

conduct participant observation with children due to physical differences, ethical considerations, such as child protection, and the supervisory role that children perceive adults to hold (Birkbeck & Drummond, 2007). However, involvement as a compassionate adult, separate from family and teachers, can develop effective relationships with children based on trust and mutual respect that satisfies any ethical considerations and is ‘...entirely consistent with the social, intellectual and communication requirements of children if they are to participate in research’ (Birkbeck & Drummond, 2007:27). Research through interviews has been found to be a successful communication tool with young children, even from three years of age, as auto-biographical memories (ie. experiences) are formed from two years of age (Docherty & Sandelowski, 1999). The use of visual materials and ‘props’ in interviews are believed to aid children’s recall. Researchers have also sought means to gain the perspectives of children who have not yet developed verbal capabilities, including observation, drawings, photography and non-verbal role play.

Limited research has been conducted on young children’s perspectives of health and health related behaviours, particularly in the family context, most health research concentrating on illness and healthcare services (Backett & Alexander, 1991). This project however, aimed to deliver activities around sleep whilst conducting research with children. I positioned myself amongst the children as an adult independent from nursery staff or family members. Children were encouraged to participate in project activities, but were not under pressure to do so; they gave their consent through their participation. The time span of the project enabled me to build trusting relationships with participating children and this resulted in children being enthusiastic to share their experiences with me. I incorporated some of the techniques detailed above, such as asking questions, the use of props, observation, photographs and role play into activities.

### **6.3 THE EARLY YEARS FOUNDATION STAGE**

The EYFS establishes standards concerning development, learning and care from a child's birth to five years of age. It provides a statutory framework for all registered early years providers in the UK. There are four overarching themes: A Unique Child, Positive Relationships, Enabling Environments and Learning and Development. The subject of sleep fits into a key aspect of A Unique Child: 'Health and wellbeing', 'maintaining children's healthy interest in their own bodies, their own well-being and food preferences, while helping them to understand why some choices are healthier than others' (Department for Education and Skills, 2007). The following is a brief overview of the impact the EYFS had upon planning suitable intervention activities.

The pre-intervention questionnaire was suited to this framework as it provided information on children's home environment and routine. Children's personalised learning, 'planning for each child, rather than the whole group' (Department for Education and Skills, 2007), is shaped by having a good understanding of children's home life and adult interactions. For example, one nursery manager highlighted that a commitment made by the EYFS under the heading 'Positive Relationships' is 'Parents as partners'. Whilst nursery staff try and establish insight into individual children and their home life, projects such as this enable them to forge new channels of communication with parents. 'The learning journey', a component of Learning and Development, emphasises that support provided to children should be tailored to their individual needs. The questionnaires provided a basis for myself and nursery staff to provide additional support around sleep in the home if necessary. For example, taking the time to discuss and listen to children's opinions on sleep and bedtime and sign posting parents to appropriate resources.

'Listening to children' and providing child-led initiatives is key to the EYFS. It is important that children's opinions are valued even if they clash with adults' opinions. Children must be helped to discover their own answers to questions,

rather than being provided with the answers, so many activities were designed to stimulate questions. For some children it is much easier to communicate through actions and pictures rather than words. Creative pursuits such as making dream catchers and dens helped to make activities accessible and child led. The use of disposable cameras in the home for children to take photos of their bedtimes illustrated what sleep and bedtime meant for individual children. This again provided additional information on children's home life, for example, one child was photographed sticking a sticker on a reward chart for his bedtime behaviour.

The 'Learning environment', a commitment within Enabling Environments is to provide stimulating indoor and outdoor activities, which should be linked where possible to enable children to move freely between them. It was important that the nursery intervention activities would not be limited to the indoor setting, for example den making and physical activity games were carried out in the nursery gardens where possible.

The EYFS Learning and Development theme recognises that children learn through their own experiences and one another's. Role play is commended as important in this area as it 'allow(s) children to take on and rehearse new and familiar roles' (Department for Education and Skills, 2007). I used role play with the children for them to act out every day experiences such as getting ready for bed. We would then build on this by acting out a character's experience from a story.

## **6.4 THE NURSERY INTERVENTION**

### ***6.4.1 Designing the Nursery Intervention***

The nursery intervention set out to engage *all* children, and the children were very young, the majority only three years old. Therefore, the primary aim of the intervention was to capture children's interest in the topic of sleep, and if possible,

secondary aims included children thinking about general aspects of sleep, such as why we sleep, where we sleep and what might help or interfere with our sleep.

This study was novel; no similar study has been conducted with young children in the UK or elsewhere to my knowledge, therefore there was no model on which to base the intervention. The original ideas for activities for the nursery intervention evolved from a discussion between myself, a nursery manager, Dianne Roberts, and a Czech Anthropology Masters student, Andy Lnenicka. Andy was on a one year Erasmus placement from a taught Masters in Education programme and was also undertaking an MA in Anthropology in Durham during his year's placement. Both dissertations would focus on the design of the nursery intervention and the success of activity delivery with children, paying particular attention to participation levels. Dianne provided us with information about the EYFS, the organisation of nurseries, and the kind of activities that she imagined would be successful in generating children's interest. Andy used this discussion to produce a list of eight ideas. He then presented these to the steering group, see point 4.3.1, which included Dianne Roberts and Sure Start childcare practitioners. Their input was very helpful in rejecting some ideas which they deemed inappropriate, for example, one included making a Czech potion for keeping the bogeyman at bay. The practitioners felt that this was too adult for the age group and was likely to frighten the children, rather than amuse them. Andy made some revisions and we presented the activities to the participatory research group from the parent intervention. The participatory research group were encouraging and made a few minor suggestions and wished to change one activity involving animals and their sleeping environments, which the group considered too abstract for preschool children and did not lend itself to clear outcomes. The participatory research group suggested a much simpler version of the task, to use photos of animals and match them to photos of sleeping environments, for example, a bird and a nest. Participants described how they would use an activity like that to discuss sleep with their children. Both groups were useful in helping pin down exactly how activities would be delivered and what outcomes were hoped for and providing suggestions for stories that could support activities. There

was agreement amongst practitioners and parents that leaving a resource in the classroom, such as a book, would enable children to revisit activities and achieve a deeper level of learning.

Table 7 illustrates the activities, what was involved and the learning outcome for children.

**TABLE 7: Nursery Activities and Learning Outcomes**

<b>Activity Name</b>	<b>Activity Type</b>	<b>Learning Outcome for Children</b>
Getting ready for bed	<ul style="list-style-type: none"> <li>• Story</li> <li>• Use of props</li> <li>• Discussion</li> </ul>	To reflect on: <ul style="list-style-type: none"> <li>• Their own bedtime routine</li> <li>• What can help us to sleep</li> <li>• What can interfere with our sleep</li> </ul>
While you were sleeping	<ul style="list-style-type: none"> <li>• Story</li> <li>• Discussion</li> <li>• Pairing photos</li> </ul>	To think about: <ul style="list-style-type: none"> <li>• Animals and their sleep environments</li> <li>• Their own sleep environment ie. bed and bedroom</li> <li>• When we sleep ie. why do we sleep at night?</li> </ul> Children to learn the concept of nocturnal and which animals are nocturnal
Peace at last	<ul style="list-style-type: none"> <li>• Story</li> <li>• Discussion</li> <li>• Role play</li> </ul>	Building on last two activities, children to consider in more depth: <ul style="list-style-type: none"> <li>• Their own sleep environment</li> <li>• Why our sleep environment is important, for example, temperature, noise, comfort – why they might help us to sleep or how they can interfere with sleep</li> </ul>
Dreamcatchers	<ul style="list-style-type: none"> <li>• Creative play</li> </ul>	Children to learn how dream catchers are made and used in Native American culture To think about: <ul style="list-style-type: none"> <li>• Concept of a dream</li> <li>• What our body and brain are doing when we're asleep</li> </ul>

<b>Activity Name</b>	<b>Activity Type</b>	<b>Learning Outcome for Children</b>
Den making	<ul style="list-style-type: none"> <li>• Physical play</li> <li>• Creative play</li> <li>• Story</li> <li>• Discussion</li> </ul>	To reflect again on: <ul style="list-style-type: none"> <li>• Our sleep environment ie. why we sleep indoors at night</li> <li>• Our bedtime routine and how it would be different if we lived in a den without modern conveniences</li> </ul> Children to consider that people in different cultures might have different sleep environments and routines to ours
Pyjama day	<ul style="list-style-type: none"> <li>• Physical play</li> <li>• Discussion</li> </ul>	To think about: <ul style="list-style-type: none"> <li>• Why sleep is important for our bodies and brains</li> <li>• How what we do during the day will impact upon our sleep</li> <li>• How our sleep impacts upon our energy levels and mood during the day</li> </ul>
Photo albums, certificates and project booklets	<ul style="list-style-type: none"> <li>• Photography</li> <li>• Discussion</li> </ul>	Children to revisit their bedtime routine and environment

#### **6.4.2 The Nurseries**

##### *Recruitment*

As discussed in General Methods (chapter 4) the nurseries taking part in the intervention were two private nurseries set within Sure Start children’s centres: Redhill and Footsteps nurseries and two school nurseries: Norton Primary and Frederick Natrass. I spent time in the two private nurseries prior to the interventions both to familiarise myself with the different environment and for the children and staff to get to know me. This was not considered necessary by staff at the school nurseries.

Letters, information sheets and consent forms were distributed through each nursery informing parents about the intervention and providing my contact details if they wanted to discuss the project. I also attended a parents’ evening in one of the private nurseries, Redhill, to provide parents with the opportunity to speak to me. In Redhill

nursery parents of all 13 children present at the start of the intervention completed pre-intervention questionnaires and consent forms. Five parents elected not to be contacted to take part further in the study. In Footsteps nursery, consent forms were completed for all eight children present at the start of the project. However, only four questionnaires were returned despite numerous reminders, and one of these respondents was not willing to take part in the post-intervention questionnaire, resulting in a sample size of three. In one of the school nurseries, Norton Primary, just over half the parents gave consent for children to take part: 18 children who attended morning nursery and 12 children who attended afternoon nursery. Three respondents were unwilling to participate further in the study.

In the other school nursery, Frederick Natrass, the teacher said that consent forms and questionnaires had been completed for all children attending morning and afternoon nursery. However, this was not the case and parents had not received any information about the project, which became apparent at the end of the project when I tried to gain copies of the paperwork. I thought that it might be possible to conduct retrospective questionnaires and interviews with parents in order to supply some data for this nursery. I attended nursery at dropping off and collection time to speak to parents and distribute questionnaires and provided a deadline of a fortnight for their return. This resulted in three completed questionnaires and one respondent willing to be contacted again for a short phone interview. Although this respondent is included in the data for the nursery intervention, there was not sufficient data to evaluate the success of the project at this nursery.

### *Delivery*

Delivery of the activities was very different between the nurseries. I will explore the reasons why this was so. The private nurseries were both 'Stepping Stones' day nurseries and were managed by enthusiastic young women doing childcare degrees. The nurseries were divided into rooms by children's age, there is a babies' room, a one to two years' room and a three to four years' room. We were working in the

three to four years' rooms, which sometimes included more developed two year olds. As the nurseries are private, children attend different days or half days depending on their parents' schedules, some children's attendance varied weekly. The children at Redhill and Footsteps nurseries were younger and seemed less developed than the children at the school nurseries. They were also less used to working with adults who were not already known to them.

Redhill nursery was the larger of the two private nurseries; both by numbers and physical size. During the project the nursery's three to four years' room took on additional children, sometimes the number present was as high as twenty. This made the delivery of activities more challenging. All children were provided with the opportunity to take part in activities, which could result in a large group, which was hard to manage. When we tried to divide children into small groups they frequently lost interest by the time their turn came. Children were often already in the middle of a game when we arrived and could be reluctant to interrupt their play to participate. At this nursery, although activities were carried out on the same day each week, we would often be working with different children, making it hard to keep continuity between activities. Staff were rotated between rooms and days, and a number of staff left during the duration of the project, which meant engaging staff's interest in the project was ongoing.

Staff at Footsteps nursery sat the children down and talked with them prior to our arrival. This meant that the children were always calm and willing to listen to us. All children were encouraged to participate and staff as well as children would always listen to stories. The staff at Footsteps nursery were quick to make suggestions to improve activities and motivate children, which often resulted in greater success.

Each school nursery was run by a teacher with support from teaching assistants. They were also very different from one another. Frederick Nattrass nursery had a shared play area for nursery and reception children. I generally read a story straight

after registration, when all children would be required to sit and listen. Any activities we wanted to involve children in would then be carried out whilst children were playing. This made it very difficult to maintain children's attention as they were free to play in any indoor or outdoor area of the nursery. The noise level was always very high and children would be running past and calling out to those taking part. We frequently attracted children from reception class who were keen to participate and school staff felt that they should have the opportunity to do so. It was very difficult to learn children's names and build relationships with them at this nursery, although there was a small core group of girls and a few boys who participated in most activities.

At Norton Primary nursery the large play area was only used by nursery children and there was a separate small room just off this where we delivered activities with small groups at a time. The nursery teacher divided the participating children into groups, mixing up abilities and those considered loud with those who were shy. For the first couple of weeks the nursery staff provided the children with name badges making it easy to get to know them and attract attention. We worked with the same groups each week and were undisturbed, which resulted in us building good relationships with the children. The teaching staff always encouraged the children to participate and built up our arrival and activities. There was one child at this nursery reluctant to participate; every other child signed up for the activity took part in every session. We were told that this child was always shy with strangers and that he could be difficult to involve in other nursery activities. We spent time encouraging the child to join the rest of the group and on occasions he would watch the other children participating. In time, I think he would have joined in.

#### ***6.4.3 Evaluating the Activities with Children***

Unfortunately, due to combined factors, including the young age of children, large groups and noisy and distractible settings for activities, involving them in the evaluation of activities did not prove successful. We attempted to evaluate the first

two activities by providing children with a piece of card with a smiley face on one side giving thumbs up and an unhappy face on the other giving thumbs down. We asked children first if they had enjoyed the activity and secondly if they would they like to do it again another day. The main setback was that we could not maintain children's attention when an activity was over; they were keen to leave us and do something else. Also, due to the nature of the EYFS, and that children consented to participate simply by participating, children came and went throughout activities, often when we were involved in discussion and so it was not easy to break off to speak to them. We abandoned the faces, which did not seem that popular and were maybe over complicating the evaluation, although this method has been found to be successful when working with small numbers of preschool children (for example, Perry & Dockett, 2011). When possible we instead asked children if they had enjoyed activities and whether they would they like to do them again. Children generally responded with 'yeah' over their shoulder as they left us, or silence. We discussed this with nursery staff who felt that children were already thinking about what they were going to play next and that children might have difficulty understanding that we meant to do the activity again on another day, as they tend to live in the moment, and were instead concerned that we were going to try and persuade them to do it again that minute.

I kept audio recordings of the activities, but these are not of sufficient quality in most cases to analyse. This was mostly due to children speaking quietly or over one another and the background noise in two of the nurseries, Redhill and Frederick Nattrass, where activities took place in open plan areas where other children are playing. Recordings outside during physical activities, such as den making and pyjama day were also poor, as the children were spread out and there was noise of the activity and the outside environment. I also felt after listening to the recordings that the analysis of this data would not shed much light on children's reflections of the activities and would at most provide very basic information on children's bedtime routines and bedroom environments. The young age of the children meant that they were often prompted by myself or Andy in raising or answering questions.

I led activities and Andy kept a record of the length of activities and the number of children participating in activities, including children joining in and leaving activities as they were ongoing. However, I did not receive this data, as described in point 6.4.5. The next section includes my own reflections based on notes made directly after activities.

#### ***6.4.4 The Activities and Researcher's Reflections***

The activities were delivered either weekly or fortnightly by myself and supported by Andy. The activities were as follows:

##### ***Activity 1: Getting ready for bed***

###### *Learning Outcomes*

Children to reflect on:

- Their own bedtime routine
- What can help us to sleep
- What can interfere with our sleep

###### *Activity Detail*

We read 'Tigers love to say goodnight' by Sue Mongredien, a rhyming story about a boy and his toy tiger going through their bedtime routine. We got the children to pull a 'prop' to do with the story from a bag, such as a toothbrush, flannel and slippers, which the children had to identify and say if they used at bedtime. There were also some props that were not from the story, such as a football, a can of coke and a thermometer. These items were intended to start discussion about recommended bedtime practices.

**FIGURE 2: Reading ‘Tigers love to say Goodnight’**



*Reflections*

The first nursery we delivered this activity in was Frederick Natrass School nursery and the teacher explained to us that the best way to read the story was with the book facing the children so that they could see the pictures. To maintain their interest she suggested making the story as interactive as possible by asking children questions about what was happening and what they could see, and encouraging them to carry out actions, like pretending to brush our teeth. This was very useful advice and I found that each time I delivered the story I gained confidence and discovered new ways of interesting children, for example, by being silly and muddling up two bedtime activities, which resulted in children being quick to point out my mistake and set me straight. We read this story to the full class of children following registration. We then asked who would be interested in doing some activities linked to the story and about a dozen children put their hands up. The teacher selected about half of these, with the intention that we would then work with a second group.

We took with us a toothbrush, flannel, cup, slippers, chocolate bar, football and teddy, and asked children to pull something out of the bag and tell us what it was for and if it was something they associated with their bedtime. This was popular with the children and they were quick to tell us about the items from the story. The children had much more difficulty associating items that were not mentioned in the story with bedtime. We tried to discuss activity before bedtime using the football

and realised that the link was too tenuous for this age group. Likewise, although some children could identify a thermometer and understood its purpose they could not associate temperature with sleep at this stage, even when I role played being too hot or cold in bed. We struggled to explain the relevancy of some of the items. The children were excited to take part in the activity and to pull something out of the bag. In some cases the objects acted as distractions, children being more interested in playing with certain items such as the football, than participating further.

At this nursery, Andy wished to try and extend the activity by making two bears, one that was happy and awake and another that was grumpy and sleepy. He was very keen for children to identify 'good' and 'bad' sleep habits, which I felt was too much of a leap, and was more interested in hearing what children did at bedtime and how they described their bedrooms. Andy wanted the children to sort the items that we had brought with us that promoted or interfered with sleep by putting them into pockets on the front of the bears, the sleep promoting items been given to the awake bear and the interfering ones to the sleepy bear. We took the first group to the craft area, but they were not interested in making bears and asked instead if they could make tiger masks. This showed that the book had made an impression on the children as they were thinking about the tiger in the story. We wished activities to be as child led as possible so followed the tiger mask suggestion. The children enjoyed making the masks but it was difficult to discuss sleep during the activity. At this open plan nursery we struggled to identify who had heard the story and who we had already worked with, which made it very difficult to form a subsequent group to work with. The second group incorporated a number of children from reception year who were the most talkative.

Our experience after a day at this nursery showed us that the activity was too long and that the craft element added nothing to enthusing children about sleep so we gave up on this idea for the following nurseries. We also abandoned props outside of the story that were intended to introduce children to what could help or hinder our sleep, as the association seemed too advanced for them at this stage. We decided to

concentrate on only one of our learning outcomes for this activity: introducing children to thinking about their own bedrooms and bedtimes.

Delivery of the more abridged version of this activity was then carried out at Redhill nursery. This nursery was unusually quiet this day, only six children being present. The nursery assistant asked if they wanted to read a story and four came to the mat whilst two refused. This session did not appear very successful as children were quiet and more interested in playing with props than discussing sleep and it was hard to maintain their interest for any length of time.

At Footsteps nursery, staff made all children sit down on the mat to listen to the story. This was straight after lunch and the children were more interested in playing. As the children were younger (we were told that some were only two years old) we experimented by spreading out the props on the floor, with the intention of children identifying the items at the relevant point in the story. This proved a mistake and children pounced on the items and were distracted during the story playing with them. We struggled to engage the children at this nursery and felt that they did not concentrate on the story but were made to sit still by staff. Children provided very little interaction during the story, didn't answer questions or role play any of the actions. The manager at this nursery felt that a later start would ensure that children were more receptive as they would have had chance to burn off energy after lunch (they have to sit at a table for around 30 minutes for lunch).

This was our first activity and we were only just learning how best to talk to and engage children, and for how long we could attempt to maintain their interest. This activity really acted as an introduction for children, both for the topic of sleep and for children to get to know Andy and myself. The choice of story was a successful one and the props were popular, if a little distracting. The attempt at Frederick Nattress to develop the activity into discussing what can help us to sleep and what can interfere with our sleep was not successful and only confused children. After the first activity, disposable cameras were sent home with letters instructing parents

on their purpose - that children were to photograph what bedtime means to them. The children were very excited when we discussed the disposable cameras and told us what they were going to photograph. Parents welcomed their use in the home, although a small number of cameras were returned unused. Although parents had been instructed that children were to be encouraged to use their own initiative when determining what to photograph, a large number of photographs had clearly been taken by adults. When I discussed this with respondents during semi-structured interviews the reasons included children being more interested in featuring in the photographs, and parents concern that children were 'wasting' the photographs. There was parental concern over taking the 'right' photographs. The adult belief that children are wasting photographs or taking the wrong photographs is an example of where research with children can fail due to the adult-child power imbalance. In this instance, children were being provided with a tool to express their views and opinions on sleep but had their ideas dismissed (James, 2007). In retrospect, I wonder if the instructions to parents should have been more patent in explaining that the child had freedom to photograph anything, regardless of whether parents thought that a photograph had something to do with bedtime or not.

### ***Activity 2: While you were sleeping***

#### *Learning Outcomes*

Children to think about:

- Animals and their sleep environments
- Their own sleep environment i.e. bed and bedroom
- When we sleep i.e. why do we sleep at night?

Children to learn the concept of nocturnal and which animals are nocturnal

#### *Activity Detail*

We read the animal counting book by John Butler, 'While you were sleeping,' identified the animals in the pictures, made their noises and role played actions such as bunny ears and elephant trunks. We then discussed whether the animals were

asleep during the day or night. The concept of nocturnal animals was not an idea with which the children were familiar. We followed on from this to discuss why we sleep at night. We provided the children with A4 size cards with photographs of animals and their homes and asked them if they knew what they were and if they could match the right cards together.

**FIGURE 3: Identifying Animals and Their Sleeping Places**



### *Reflections*

We delivered this activity in Frederick Natrass School nursery for the first time again. I read the story to two thirds of the class, around 15 children, who enjoyed identifying and counting the animals, although two children at the front took over. The children enjoyed actions like bunny ears and elephant trunks. I tried to introduce the idea at the start of the book that whilst we are going to sleep some animals are only just waking up and that these animals sleep during the day when we are awake. We worked with groups of around six children, by showing photographs of sleeping environments first and asking the children if they knew what they were and who might sleep there. Once we had identified what they were, children took it in turns to select a photo of an animal, name it and put it in the right sleeping

environment. The first group was loud and excited to name animals and suggest where they might live. The second group was quieter and not as good at naming animals or suggesting where they might live. This was a similar pattern in the afternoon session, and in all sessions children came and went throughout the activity and we gained children from reception year. The concept of nocturnal animals was not grasped quickly by the children but they seemed to understand that some animals shouldn't be out at day, one child told a story about seeing a hedgehog that was poorly because it was out during the day.

Norton Primary School nursery was the second nursery we delivered this activity at. Naming and counting the animals again proved popular. After working with a couple of groups of children, who had more difficulty naming animal sleeping environments (such as a cave) and some of the animals (for example, identifying mice as baby bunnies) we took out some of the photos to make the activity easier. This also made the activity shorter, which provided us with more time to speak to the children during the session about their own sleeping environment. We asked children questions such as if they would be comfortable sleeping where the animals slept, and what they liked best about their bedroom and going to bed.

When we arrived at Redhill nursery to deliver this activity we were met at the door by a little boy bringing us the nursery's copy of 'Tigers Love to Say Goodnight' from the previous activity. This was encouraging and the nursery was busier and more children were interested in sitting down to listen to our new book. One of the children could name all the animals and where they slept. We tried to get a second group going but ended up playing a game of memory with the children instead, which helped us to get to know children and form a relationship with them.

We decided to start with the activity rather than the story at Footsteps nursery, as the children had struggled to concentrate for a story and an activity the week before. We involved all the children present as the group at this nursery was never more than eight to ten children. This went much better than we'd anticipated and the

children were very excited to tell us their favourite animals and to name the animals and sleep locations in photographs. One boy could name all the animals and knew which were nocturnal. We only lost a few children to playing elsewhere by the end of the activity. We left the story with the nursery staff to read to the children the following day and to discuss the activity again with them.

This activity met learning objectives involving animals and their sleeping environments and children understanding that some animals are nocturnal. Children were interested in animals and the concept of nocturnal animals, particularly in relation to animals that they were more familiar with, such as bats and owls. This activity was particularly successful at involving boys. Although there was not as much discussion as we might have liked around children's own bedtimes, I do believe that the activity encouraged children to begin to think about why people sleep at night, why some animals do not, and what is important for children's own sleep. Children stated that their beds, teddies, televisions, toys and being tucked in by their mums was what they needed at bedtime.

### ***Activity 3: Peace at last***

#### *Learning Outcomes*

Building on last two activities, children to consider in more depth:

- Their own sleep environment
- Why our sleep environment is important, for example, temperature, noise, comfort – why they might help us to sleep or how they can interfere with sleep

#### *Activity Detail*

This activity was based around 'Peace at last' by Jill Murphy. The story is about Mr Bear who moves around his home and garden trying to find a peaceful place to sleep but who is disturbed by his environment, such as sounds, discomfort and the temperature. Many of the children were familiar with this story and enjoyed making the sounds and actions from the book. When asked whether Mr Bear would be able

to sleep in certain places the children were fast to say no and provide explanations as to why the environment would be unsuitable. We progressed from this discussion to talk about why we sleep in our beds in the night and role played the things the children said they did before bed.

**FIGURE 4: Role Playing Getting Ready For Bed**



### *Reflections*

We received a warm welcome at Footsteps nursery from the children. They were much happier to sit down with us and asked if we were going to read a story. I read *Peace At Last* and got them to make the noises in the story, which they really enjoyed. We talked about whether Mr. Bear would be comfortable or able to sleep each time he moved location, what was stopping him from sleeping, and whether children could tell if he was asleep or awake. The children were very good at identifying what was interfering with Mr. Bear's sleep, including daylight, being uncomfortable, the cold and noise. When Mr. Bear goes back to his own bed at the end of the book the children told me that this was the right place to sleep and that it was 'snuggly,' not too cold and the right size. We tried to role play using Mogley bear (the nursery's traveling bear) by putting him to bed on a pillow, this reminded children of the first activity, as children provided us with instructions as to what the bear would need to do before getting into bed, for example, having a bath, cleaning his teeth, putting on his pyjamas and turning off the light. However, the children were more enthusiastic about carrying out actions themselves. We used the story,

which featured owls and bats, to recap on the animal activity from the week before. It was encouraging how many children were able to name animals they had struggled with, make their noises, and inform us which animals were nocturnal. The activity lasted 30 minutes, which was considerably longer than our previous two activities at this nursery. One of the boys asked if we'd be coming back again, and the children fought over who was going to look at the book we were leaving. The nursery assistant said that the children had asked if we were coming back since we were last there and had been quite excited to know that we were coming that day.

At Frederick Nattrass Nursery the morning session was not as successful as the afternoon one as the teacher had forgotten that we were coming and the children were already playing outside as the weather was nice. We managed to interest a small group in sitting down outside to listen to the story but other things going on proved very distracting for them. On the afternoon, we read the story inside before children went outside. The children enjoyed the story and making the noises and were good at naming the nocturnal animals. However, it was difficult to role play or spark discussion around the story about children's own bedtimes and bedrooms as other classes were coming through the open plan area to go outside and the children wished to join them.

The children at Norton Primary School nursery really enjoyed this story and activity. The majority joined in role playing getting ready for bed and pretending to be asleep. They told us about their own bedtimes and when they had not been able to sleep and why not. One girl said that she hadn't been able to sleep the night before and her mummy had said it was because it was too hot in the room and had opened the window, but she didn't like having it open and was frightened by the sounds outside so had made her shut it again. Other children said that they could only sleep with their special nightlight on, or a special teddy, two children talked about needing their dummies to sleep.

We delivered a different version of this activity at Redhill Nursery. Unknown to us the staff had put a lot of thought and effort into preparing the nursery to look like a bedroom. This demonstrated the staff's commitment to the project, and I believe that the change was partly a result of my feedback at steering group meetings (attended by Dianne, the nursery manager) that we were struggling to maintain interest with children at Redhill nursery, which I believed was due to the environmental constraints, such as not having anywhere free from distractions from other children. Dianne had agreed that this posed challenges but had explained that she thought that there were ways of managing this, one of which was motivating a larger number of children to participate by building up more excitement around activities. Staff had turned the home area into beds with pillows and soft toys and put up some wallpaper behind it and a big area of black sky with stars and the moon framed by curtains. The staff said they had been telling the children that we were going to do something exciting when we arrived and that children could look in the special bag now. There was a lot of excitement as they got out two pairs of boys' pyjamas and two pairs of girls' pyjamas, and all the children were keen to wear them. They also had a toothbrush each and got to clean their teeth. One of the boys put Barnaby (the nursery's traveling bear) in his pyjamas and brushed his teeth too. They then took off their shoes and got into bed where they pretended to sleep. They were quite excited about a stand that was covered with fabric that they could get under also. The nursery manager was keen that we emphasised the positive things you can do at night to get a good night's sleep, rather than the negative. We read *Peace At Last* as a bedtime story but it was hard to maintain children's interest after all the excitement.

The children developed the bedroom area further by making a day time sky to accompany the night sky the nursery staff had made. One of the children explained that this enabled them to roll from the night area into the day area to get up and get ready for nursery. The activity lasted all morning and staff fed back that the children had continued to play in the area for the remainder of the week before they reverted it back to the usual 'house' area.

Whilst the children in Redhill nursery had a lot of fun playing getting ready for bed, the high levels of excitement made it difficult to get discussion going. I felt that we didn't make the most of the potential of this big group activity as we were unaware that the nursery had made these changes. However, the activity did serve to get children interested in sleep and bedtime. I felt that this was the first really successful activity in interesting children across all of the nurseries to think more about sleep and what we need to sleep well. I also felt that we were forming a relationship with most of the children we were working with at the nurseries and that children were more comfortable and confident to speak out with us. This was aided by seeing the same children for each activity at Norton Primary School nursery.

**FIGURE 5: Role Play at Redhill Nursery in the 'Child's Bedroom'**



***Activity 4: Dream catchers***

*Learning Outcomes*

Children to learn how dream catchers are made and used in Native American culture

Children to think about:

- Concept of a dream
- What our body and brain are doing when we're asleep

### *Activity Detail*

We took an example of a Native American dream catcher to each nursery, which we left hanging in the classroom. We asked children if they had ever seen one and if they knew what it did. The children identified them as ‘spider webs’ and we discussed how they were like webs but that they caught bad dreams rather than flies. We asked the children if they had ever had a dream. Children made their own dream catchers from paper plates, string, glitter glue, beads and feathers. Whilst we made the dream catchers we asked the children why they thought we need to sleep and what happens to our bodies when we are asleep. We explained that the body rests whilst we are asleep to give us lots of energy for the next day and to help us to feel well and fight off illnesses, like colds. We explained that the brain stores away the information we learnt and the experiences that we had that day, which is why we sometimes dream. Dream catchers were sent home with parents in all but one nursery, Frederick Nattrass, where they were displayed in the classroom. This activity was not supported with a book.

**FIGURE 6: Making Dream Catchers**



### *Reflections*

The children were very quick to suggest that a dream catcher was a spiders’ web at Frederick Nattrass School nursery, a theme that was common in the preceding nurseries. By asking children to think first about dreams, and secondly about the purpose of spider’s webs we were able to encourage children to guess what a dream

catcher might be for. Overall, around half of the children were uncertain as to the concept of dreams, whilst others were excited to tell a story about a princess or superhero in their dreams. Children were familiar with Native Americans and were interested to hear about the materials that Native Americans would use to make dream catchers. The activity of making dream catchers using paper plates and string was very popular, all children wished to take part and forming groups without reception children was far easier for this session. During the activity we asked children questions about why they thought we might sleep, which did not get much response. After prompting children with questions that they were confident about answering, such as whether they felt tired or lively when they woke up, and what their brains are for, we felt that children were interested in what we had to say and were starting to understand the purpose of sleep.

This activity proved really popular in all of the other nurseries; all children were interested in Native Americans and the concept of a dream catcher captured their imaginations. Every child wanted to make one of their own (with the exception of one boy who did not participate at Norton Primary Nursery school but had made one later at home). Out of all the activities, this one was by far the most similar in its delivery at each nursery and the discussion with children. Children did not lead the discussion but seemed receptive to the suggestions that we made about how sleep can help our bodies and brain, which was the main objective for the activity. I was surprised by the concentration, care and forethought children put into making their dream catchers and the nursery staff were all impressed with children's behaviour and patience.

### ***Activity 5: Den making***

#### *Learning Outcomes*

Children to reflect again on:

- Our sleep environment ie. why we sleep indoors at night

- Our bedtime routine and how it would be different if we lived in a den without modern conveniences

Children to consider that people in different cultures might have different sleep environments and routines to ours

### *Activity Detail*

This activity used resources already at the nurseries, such as tents, netting, blankets, tables and chairs. We asked children if they had ever been camping or stayed in a caravan and progressed to discuss shelters and how people in some cultures might make dens in which to sleep. We built on previous activities discussing the sleep environment and bedtime routine we have in a house, compared to if we were sleeping in a den, and why we sleep at night, especially if we only have the light of the moon. We got the children to think about how we could use the materials we had to make dens and encouraged them to lead the activity. When the dens were complete we read a story inside the den by Jill Murphy, ‘Whatever next,’ about a baby bear who builds a rocket to take to the moon when he should be getting ready for bed. This story again allowed us to revisit activities covered in previous weeks, such as nocturnal animals, bedtime activities and the bedroom environment.

**FIGURE 7: Making Dens**



### *Reflections*

Carrying out the den making outdoors worked very well with Frederick Nattrass School nursery. At this nursery, due to the large number of children, open plan area and the open door policy, we agreed with the teacher that it would be easier to read the book prior to the activity. It was one which some of the children were already familiar with and they were excited to tell us what would happen next. The teacher helped deliver this activity as the classes were very big and there was no teaching assistant to take a group of the children away to do another activity. We asked children whether they knew what a den was and whether they had been camping or caravanning. Children were keen to tell us their experiences of sleeping in a tent in a sleeping bag or a caravan. We talked about how people in other cultures might not live in a house or have a bedroom, referring back to the previous activity and Native Americans. The weather was very good and the Nursery teacher had recently purchased some den making materials that the children had yet to play with. We got the materials out, laid them on the ground and children suggested what we should do with them, which we encouraged them to carry out themselves. The activity was led by children who had not previously engaged with other activities, including multi-cultural children, where English was not the first language, who tended to play together. It was also very successful in engaging boys. The children developed the activity by gathering sticks to make a campfire and telling me what we should get from inside the nursery to furnish out the den to make it comfortable to live and sleep in. This included a pillow and blankets, food and a torch. Due to the large number of children and the high level of excitement, there was little discussion during the den making activity, and there were some problems getting children to take it in turns going inside the den.

In Redhill nursery this activity was not very successful as we carried out the den making in the main garden area, which the children did not get to play in frequently. Although we provided the children with time to play before trying to motivate interest in the den making, they were more excited to be in the garden and run around. A small group made dens with us using chairs and blankets, but children

wished to use the den making materials to make superhero capes, which was their interest that week. I tried to interest some children who had returned indoors to listen to the story and a couple did, but it was difficult to get any discussion going with them.

Due to the weather we were unable to go outside to make dens in two nurseries. In Norton Primary nursery the children thoroughly enjoyed making indoor dens using chairs, tables and big blankets. The children again led the activity by arranging furniture and blankets. They found it very exciting to sit inside the den whilst we read them a story. We asked the children if they could sleep in the dens, and some of them said that they could and role played going to sleep. Other children said that it wouldn't be a comfortable place to sleep because they didn't have a bed or a pillow and that they wouldn't like to sleep in it on their own. One child was frightened of the dark and wouldn't sit in the den.

At Footsteps nursery, we arrived expecting to make dens indoors only to find that there were few den making materials and little space. Instead, after discussion with the nursery staff, they suggested reading the story and making a rocket to take to the moon like the bear in 'Whatever next.' This involved a cardboard box, a pair of wellies for moon boots and a colander for a helmet. The children took it in turns to act out elements of the story and sit in the box, which they found very exciting. At snack time we spread out a blanket and pretended to have a picnic on the moon. It was difficult to satisfy the learning outcomes for this activity in this nursery, following the unexpected change of plan, but during the picnic we were able to talk about getting ready for bed, like the bear having a bath and supper, and why we sleep at night when the moon and the stars are out.

This activity satisfied its learning outcomes far better in the two school nurseries than the private nurseries. In the school nurseries it was far easier to keep the activity and discussion on track, whereas the activity was disorganised in Footsteps nursery and we were unsuccessful in engaging children at Redhill nursery.

**FIGURE 8: Making a Rocket to Take to the Moon at Footsteps Nursery**



*Activity 6: Pyjama day*

*Learning Outcomes*

Children to think about:

- Why sleep is important for our bodies and brains
- How what we do during the day will impact upon our sleep
- How our sleep impacts upon our energy levels and mood during the day

*Activity Detail*

Children were invited to attend pyjama day wearing their pyjamas. We played physical activity games, such as What time is it Mr Wolf? and beat babies (a rapping action game with bean bags). When we were finished we talked about physical activity and why it might impact upon our sleep.

**FIGURE 9: Pyjama Day**



*Reflections*

Pyjama day was delivered at the two private nurseries first. At Redhill Nursery, staff had decided to involve the whole nursery, rather than just the age group taking part in the intervention. The event was treated as a fund raiser for nursery equipment with parents being asked to donate one pound. Around three quarters of the children (approximately 15 children) were wearing their pyjamas. Staff also attended nursery in their pyjamas and so did myself and Andy. The weather was warm so we carried out the activity with the entire group in the nursery garden. Children really enjoyed playing games, particularly learning new ones, like What Time is it Mr Wolf. After burning off energy the children were receptive to sitting on the grass and chatting about how they felt before they exercised and how they felt afterward. Children said that they were ‘exhausted’ and ‘sleepy.’ When asked if they thought they would sleep better after running around so much they all agreed. Children recognised that they would feel energetic again sleeping (over night or napping) and we talked about how being tired can affect our mood as well as our energy levels and how a good night’s sleep can help us to feel much better. Before we left, staff asked us to play some games with the younger children who had also dressed in their pyjamas.

At Footsteps nursery, children changed into their pyjamas before we arrived and were changing back into their day clothes after we left. There was a good take up of

children wearing their pyjamas, although a few parents had forgotten. The weather was not that good so we undertook the activity indoors with all children and staff joined in. The children enjoyed playing games and showed concentration during games like sleeping bunnies, where they were required to stay still at certain times.

The staff at Norton Primary school nursery decided that they would rather go ahead with the activity without children wearing pyjamas. They were concerned it might be disruptive to have some children in pyjamas and others not. We booked out the hall for the activity so there was plenty of space and we let the children run around for five minutes before we began. The activity was very popular and made easier by taking the children in their usual groups of five or six children at a time. All children demonstrated a real understanding of the benefits of sleep to our bodies and brains.

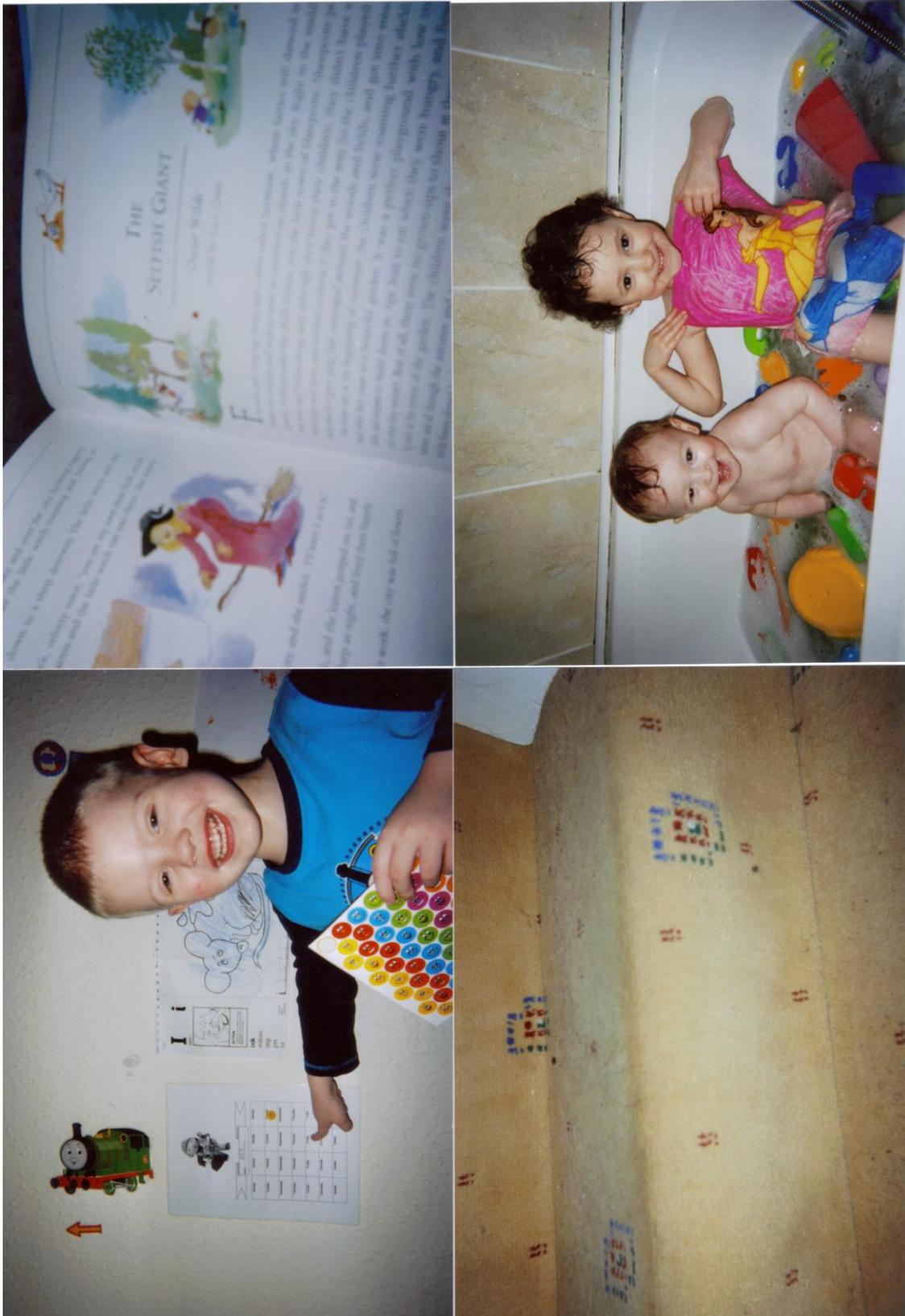
At Frederick Nattrass school nursery the letters to parents about the activity were overlooked and not sent out and the teacher was off, so children were dressed in their usual uniforms and supply staff were not expecting us. This meant that this activity was not very successful at this nursery. We worked with the whole class as there was no where to take a group to do physical games (as the hall had not been booked out) and it was difficult to keep order with so many children. The games themselves were popular but it was very difficult to generate discussion about sleep and the nursery was not very well organised that day so there was little support from staff.

I believe that this activity met its learning outcomes well in all nurseries, with the exception of Frederick Nattrass, where the nursery environment and organisation prevented the delivery from being successful.

*Activity 7: Photo albums, certificates and project booklets*

We returned to the nurseries to provide them with a photo album displaying children's photographs of their bedtimes, taken with the disposable cameras. It was at the suggestion of the nurseries that we left the photo albums until the end of the activities. Nursery managers felt that it was a good note on which to end the project and it allowed time to remind parents about the return of disposable cameras and the development of photographs. We sat and looked through the albums with the children. They were delighted when they spotted their own photographs, recognising themselves or their bedroom, house or possessions. The children enjoyed pointing out their photographs and talking about what they were doing in them or why they had taken them. The photographs sparked a lot of discussion amongst the children about what kind of bed and bedding they had, who slept with them, like a special teddy bear, and what they like to do best before getting into bed and when they get into bed. We left the albums with the nurseries for children to revisit. Examples of the photographs taken with the disposable camera can be seen in Figure 10.

**FIGURE 10: Children's Photographs of their Bedtimes**



I provided each child with a certificate (see Appendix K) and a ‘super sleeper’ sticker for taking part in the project, which was popular with the children. In three of the nurseries teaching staff were given project booklets for parents to take home. The project booklets contained information on each activity, written in the language used with children, and featured photographs and quotes from the children (see Appendix L). The project booklets were divided into groups within each nursery to ensure that every child featured in at least one of the photographs.

Frederick Nattrass primary school nursery asked if they could have details of the activities week by week to include in children’s ‘learning journeys,’ a concept of the EYFS Learning and Development, which the nursery had developed into a tangible folder. Each child has their own folder which includes details of their learning and development. Folders are available for parents to look at in the classroom or to take home, and parents are encouraged to include feedback in the folder and to use the content to generate discussion with their child about their learning. As the activities and photographs had been displayed weekly in ‘learning journeys’ a separate booklet was not produced for this nursery.

#### ***6.4.5 Collaborative Working***

This intervention involved collaborative working with many agencies: private and school nurseries, Sure Start children’s centres, the local authority (where a school liaison officer was to be kept informed of activities and how they satisfied EYFS requirements), the steering group, the participatory research group and Andy. There were times that I felt that the knowledge and experience of so many practitioners and parents really strengthened the intervention and times when I felt that the number of agencies involved placed me in a difficult position as an appeaser trying to satisfy everyone’s suggestions and requirements. Andy was reluctant to make changes to activities as they incorporated many techniques he had used in the past and found successful. However, Andy was used to working with older children and the

activities he suggested would have been more suitable for mid to upper primary school. Dianne had explained the EYFS and its importance at our meeting but cultural differences in education led to Andy not being as committed to the EYFS' principles. Andy had described education in the Czech Republic as directive and very structured, and this was the strategy that was familiar and effective in his mind. This made it very difficult for Andy to design activities that were not directive, and he also found the delivery of activities challenging, as it frustrated him that children came and went as they chose. Andy recorded evaluative data in Czech and we agreed he would provide me with this data in English at the end of the intervention. Unfortunately though he did not send me the data and the data in his dissertation did not display actual numbers and did not appear reliable. I was dissuaded by the steering group and nursery staff from filming the delivery of activities, which I had sought parental consent for. The main argument against filming was that children would be distracted by the presence of the camera, a problem that a number of practitioners stated they had experienced. However, had I have filmed activities I would have had reliable data on children's participation in activities.

At times I also found it difficult working collaboratively with nurseries, as I was reliant on them to uphold their end of the research process. For example, the teacher at Frederick Nattrass not having sent out any information about the study, the ethics forms, or the pre-intervention questionnaire, meant that we had invested considerable time in the nursery and had no discernable data to show for it. Nursery teachers or staff determined the delivery of our activities, which resulted in a lack of consistency between nurseries. It was also frustrating when activities had to be changed upon our arrival, either because of a problem at a nursery, for example, the lack of den making equipment at Footsteps nursery, or when nurseries thought that they were being helpful, for example Redhill nursery's bedroom. Warning from nurseries would have ensured that we adapted activities in advance to make the most of changes. These issues are discussed in detail in the discussion chapter.

## **6.5 POST-INTERVENTION SEMI-STRUCTURED INTERVIEWS**

### ***6.5.1 Interviews with Parents***

In total, 51 questionnaires were completed pre-intervention and 40 parents indicated that they were happy to be contacted again to take part in the next stage of the study. Telephone interviews were conducted with 21 respondents. It was not possible to make telephone contact with the remaining respondents who were then sent letters and questionnaires, which included open ended questions about the nursery intervention. 10 questionnaires were returned. In total 31 respondents participated pre and post-intervention, although interviews about the project were conducted with 30 respondents. The majority of these were completed by respondents from Norton Primary School nursery (n=21). At this nursery one of the children moved away following the first activity and the respondent was therefore unable to participate in the interview about the project. Seven respondents were from Redhill nursery, two from Footsteps nursery and one respondent from Frederick Natrass Primary School nursery.

All respondents were aware of the project taking place at the nursery, with the exception of the respondent from Frederick Natrass. Two thirds of the respondents stated that their child had talked about nursery sleep project activities at home (n=19). Most discussed were dream catchers, pyjama day, and differences between night and day. One parent commented on their surprise when their child saw a dream catcher on television, 'he knew what it was, we were like "oh he won't know" and he said it was about bad dreams and I thought, crikey he did take it in, because when he doesn't say anything you think does he know what's going on?' Another respondent said 'she brought home the dream catcher is it? And told me it was a spider's web and she put it under her pillow for good dreams. It all made sense when I saw the booklet.' Two respondents stated that they had since made dream catchers in the home, one of which was parent to the child who had not participated in the activity.

Four respondents stated that they had not received a copy of the summary booklet through nursery. Of those that did receive booklets the majority of respondents stated that it was interesting to see what their child had been doing at nursery and many liked the photos. Respondents stated they had used the booklet to spark conversation with their child about nursery and the activities.

Respondents were asked if they felt that their child was more aware of sleep as a result of participating in the project. 12 respondents indicated that they thought their child was more aware. Parents' observations included that their child had demonstrated to them what to do at bedtime, 'oh he showed me how to go to sleep yeah.' A number of parents stated that their child understood that sleep could benefit how they felt the next day, 'yeah she knows, like she'll come out with statements now like "if I don't go to sleep now then I'll be very tired for the next day won't I?" and I'm like yes!' Another explained that her daughter was aware of the physical benefits, 'yes, she knows that it is so her body can rest so she can grow into a big girl.' One respondent stated that their child is more likely to question things to do with bedtime, '...sometimes he asks questions like "why do we have to put pyjamas on and get dressed again in the morning?" which he didn't ask before.' Greater awareness about the importance of sleep was also thought to have benefited behaviour at bedtime. One respondent stated, '...now you don't have to fight with him, you don't have to say to him...' Another explained, '...before if there were lots of children around the house she would be like "oh I don't want to go to bed." Whereas now if I say to her it's getting late and you need to get some sleep because it makes you happier if you've had some sleep and you can learn better at school, she's like "oh yes, goodnight.'" Recognising symptoms of fatigue was also mentioned as a new awareness by respondents, '...now she'll say to me, 'I'm a bit grumpy, I might be tired''. Discussing sleep in nursery and understanding that it's something that everyone must do was also identified as a positive awareness for children, '...sometimes I think she thinks she's the only person who has to go to bed. I don't think they think of their friends also having to do it, so I think when

they do it as a joint activity...’ Another respondent felt that children would benefit from hearing about their peers’ bedtime routine, ‘The kids who’ve not got a bedtime routine at that age might think “my friends are doing that so maybe I should do that”...’ The majority of respondents who stated that they didn’t consider their child to be any more aware of sleep said that this was because their child was already aware and had a good routine and good behaviour at bedtime. Four respondents were uncertain as to whether their child was more aware of sleep, indicating their young age and lack of conversation.

13 respondents stated that they had given their child’s sleep more thought as a result of participating in the project, others stating that they already considered themselves to be very aware of the importance of sleep. One respondent said ‘...I did re-evaluate what I did...’ Another referred to their awareness being increased around the importance of daylight and fresh air for sleep ‘...sometimes we just take them on the field, just to kick a ball about and things like that, I think it does help them to sleep better.’

Three parents discussed the advantages of having chatted about sleep with other parents whose children were participating in the project. The support from other parents was found reassuring, ‘I’m glad he was involved because he wakes up in the night and that and I was thinking this isn’t normal. But now I know that it is, loads of people do...I was on the brink of taking him to the doctor’s about it...’ Another respondent talked about filling out the pre-intervention questionnaire at a child’s party with other parents from the nursery, ‘...then you start talking about your routine and hear other people’s ideas as well, you can get some ideas. I’ve got a 12 year old as well but you forget and for some people who only have the one...it’s not really something you talk about, how to get your children to sleep...you can feel like a bit of a failure if you can’t get your baby to sleep.’ Another respondent stated that she’d found the project helpful for dealing with sleep with her other child.

Respondents were asked if they had considered or actively sought to make any changes to their child's sleep. Sticking to a good routine or implementing a better one was the most common response. One respondent mentioned trying to calm their child down before bedtime, 'when it's getting ready for bedtime, try and calm him down rather than him being all hyper.' Getting children to initiate sleep independently was one area two respondents were trying to change. Another respondent stated 'usually he falls asleep on the settee, there's no way he'll go straight to bed, but instead of just leaving him there we take him up now.' Trying not to let their child have too much to drink before bedtime was being tackled by one respondent, who had also stopped their child from drinking 'Robinson's juice' and was offering milk or water now. Another respondent who had been dealing with nightmares stated, 'We now use the dream catcher so if she wakes with a bad dream we tell the dream catcher to make sure it catches all the bad dreams. It works a treat.' Two respondents said that they were considering moving their child out of their bedroom; space was an issue for one. One respondent was considering cutting out the bedtime video from their child's routine. Another respondent had purchased a clock for young children that can be set to activate in the morning at a time deemed suitable by parents for the child to get out of bed. This respondent was unsure whether this was related to the project; the respondent was a father and had not been aware of the project, the mother having completed the original forms and questionnaire.

As mentioned earlier, a number of parents considered their child's bedtime behaviour to have improved as a result of greater awareness around sleep. This question was posed to parents who had not mentioned their child's bedtime behaviour and parents were also asked if sleeping patterns had changed at all. One respondent whose child was more willing to go to bed put the change down to a combination of the project and the child getting older, 'I think it's a combination because when he does go to bed he does mention about going to sleep at the school but he says it was just a pretend sleep...' Another respondent had been struggling with their daughter's sleep, '...when it started she wasn't sleeping very well, but

obviously that was something we were trying to address, so a combination of the two things has helped and she's much better now.' One respondent was unsure if a change in their child's bedtime had been implemented as a result of the project. Another respondent stated that their child knows that they shouldn't shout them through the night. One parent felt that their child puts up more of a struggle if she is left alone before initiating sleep than previously, whilst another believed their child to be more restless at bedtime as a result of light and warm nights. A nursery manager had spoken to one respondent about not playing computer games at night and reading books instead.

The summary booklets were popular and almost every respondent had either talked about the project or shown the booklet to family members, including grandparents and aunts and uncles, and friends and neighbours. A number of respondents stated that they had 'told loads of people...and said this is what he's been doing.' Two respondents mentioned their friends who have children at the nursery being sorry that they had not participated, 'my friend was sick because she never signed the form and they were coming home with cameras and dream catchers and she wasn't.' Parents also mentioned the disposable cameras and how children had enjoyed posing for their photographs. Throughout the interviews respondents reported that children had 'really enjoyed it,' and were 'very proud' of their certificates and photos in the booklet.

### ***6.5.2 Interviews with Nursery Staff***

Interviews were conducted with teachers at the school nurseries and the managers of the private nurseries. Footsteps nursery also had the deputy manager present at the interview and a further interview was conducted with a member of staff who worked in the three to four years' room and had been present throughout most of the activities.

Issues of recruitment and completion of questionnaires were raised with the respondents. Redhill nursery felt that it might have been worthwhile to set up a procedure to capture and recruit children to the project on an ongoing basis to boost the numbers of respondents. The manager of Redhill nursery stated that variation is the nature of a private day nursery, 'totally different children from one day to the next.' I asked if she thought we would have been more effective working with a small core group each week. Again, the respondent acknowledged that working within a private nursery restricted the options as, 'you were limited to one room, our practitioners have to work alongside you. Getting the right balance with the amount of children in the room...it's the pros and cons of the environment.' The manager also stated that the nursery can have difficulty engaging parents, 'we can send out questionnaires or Barnaby's diary...and it'll come back a fortnight later with nothing written on.' At this nursery there were a number of children within the three to four years' room who did not attend pyjama day in their pyjamas. The manager thought that this was not unexpected, 'we had posters up, you can't do everything...some people don't see the signs, we'd wrote it on their diary sheets, but some parents will only look at them to see what their child's eaten or something.'

A few of the disposable cameras were returned from Redhill nursery without any photographs having been taken and one parent wrote up an account of their child's bedtime in preference to letting their child take photographs. The manager felt that the cameras had been a good idea but that some parents may have felt under pressure to take a camera home, either owing to the nursery or because the children were

excited. She felt that parents may have been worried that people viewing photographs would be ‘judgmental.’

Footsteps nursery, also a private nursery, had a more stable group of children throughout the project, as well as having the same members of staff. The manager thought that this had been key to the project, ‘...it was the same children every week so they were learning and developing,’ and ‘Vicky and Andy (staff) enjoyed taking part too.’ Vicky, the practitioner at the nursery, explained that she was able to talk to the children about us coming in to see them and discuss activities with them between our visits. At this nursery a low number of questionnaires and disposable cameras were returned. The manager commented that this was disappointing, but again did not seem to find it abnormal. The teacher at Norton Primary school nursery felt that the recruitment numbers had been good but that we would have had a higher number if parents had been more aware of what would be included in the project. She commented, ‘when we were handing out the disposable cameras we had lots of mums who were like, ‘where are ours?’ and we said, ‘well you’re not part of the sleep project’ and they were disappointed and said they hadn’t realised that they needed to fill in the forms...the same when they were taking home the dream catchers.’ At Frederick Nattrass school nursery I told the teacher that I had received back three questionnaires from my attempt to undertake a retrospective survey. The teacher stated that this was common for the school, ‘We never get much response, it depends on their interest, if they perceive it as being something that’s not relevant then perhaps we don’t get as much back, which is a shame.’

At Footsteps nursery the manager explained that she’d wanted the nursery to take part in the study as ‘I was interested to find out what you’d get from our children...and intrigued really to find out what they thought of their bedtime and what their routines were...’ The teacher at Norton Primary nursery felt that it was important that the school took part as sleep is an area that the parents of children attending the nursery often experience difficulties with, ‘...that’s why some parents choose afternoon instead of morning nursery, because they can’t get them up.’

Respondents felt that the children had enjoyed participating and looked forward to our attendance at nursery. The practitioner at Footsteps nursery observed, ‘parents have often commented about how great it was, how much the children have enjoyed it, and I’ve actually seen a lot of the children get excited about the activities and when you’re going to come in, so I can say that it’s definitely had a positive effect on the children, definitely.’ The manager at Redhill nursery stated, ‘You had the children engaged and they wanted to know what you were saying and doing.’ At Norton Primary the teacher commented, ‘...they’ve took to you, looked forward to you coming...they loved it,’ whilst at Frederick Nattrass the teacher observed, ‘...they really enjoyed it’

Respondents were in agreement that the project had aided the social development of the children. The teacher at Norton Primary nursery felt that we had built effective relationships with the children, ‘it’s been great to see some of the quieter children really coming out of themselves around you.’ At Frederick Nattrass nursery the teacher said ‘I think it’s good for them...it’s important for – especially early years children – to get used to being with lots of different people.’ The manager of Footsteps nursery explained that she had experienced doubts about the success of the project with their children, ‘I think I was quite wary about you going in because we’d had concerns about that room...about them not sitting at a table nicely and that their manners weren’t as good as they should have been and things like that. But obviously when you and Andy went they were all sat down nicely and listened to a story with you and that made us re-evaluate...’

The activities were perceived by all respondents as being popular and achieving the study’s aim of stimulating children’s interest around sleep. The dream catchers were thought to have been particularly effective in capturing the children’s imagination. Respondents were surprised by the children’s achievement at creating dream catchers, the manager at Footsteps nursery commented, ‘The dream catchers were lovely that you’d made and again it was their ability to do those dream catchers that

I didn't expect because they were really good.' At Norton Primary the teacher stated, '...there were some children that we didn't expect to persevere at the dream catchers and yet there they were...the hand and eye co-ordination that was required really showed us their development...' The teacher at Frederick Nattrass felt that the most successful activities were the 'hands on ones' like dream catchers and den making.

The framework of a story was thought to have been a successful way to link ideas and activities. The practitioner at Footsteps nursery said that certain books had been very popular, like 'Whatever next' stating, '...it's got to the point now where they actually tell me the story before I read it.' The manager at Redhill nursery felt that role playing characters from stories had been a little too advanced for the children at their nursery, and the practitioner from Footsteps nursery thought that the role play would have been more successful if we had introduced the story a couple of weeks previously. The teacher at Frederick Nattrass thought that the use of pictures and photographs (like in week two's activities on animals) was 'less accessible' for children as '...they have very limited experiences before they come in, we have to be very careful with the language and the resources that we use...it's about pitching it right.'

The number and length of activities was considered to have been appropriate. All respondents, with the exception of the teacher at Frederick Nattrass, thought that the delivery of activities on a weekly or fortnightly basis kept the children's interest. The teacher at Frederick Nattrass felt that the project may have worked better in the school if activities had been delivered more intensely, over the space of a week, '...to have a week where the focus was sleep...we might have got more out of the children by doing that. Coming in every week or fortnight they never saw it being something about sleep, to them it was just an activity and a story.' Another suggestion made by this respondent was to have a menu of activities from which schools could select the most relevant to their children. The teacher acknowledged

that issues at this school, such as Ofsted inspection and staff absence had ‘got in the way of us doing things.’

The project was deemed a success and respondents believed that it has the potential to be delivered in other nurseries, both private and school. The manager at Footsteps stated, ‘I personally do, I think it would work, I think the children have loved it and the staff have.’ The teacher at Norton primary nursery said that she could not imagine why it wouldn’t work, ‘...it’s not like we’ve had to do anything...not given us any additional work...I think it would work anywhere.’ The respondents were in agreement that the project was more successful because it was delivered by people external to the nursery, which made it ‘new,’ ‘exciting’ and ‘interesting.’

At Frederick Nattrass nursery the teacher said that she did feel that the project had impacted upon parents and made them consider their child’s sleep, ‘Some of the parents, because they knew we were doing about sleep, it was after they took the cameras home and we’d been talking about routines. I think there were three parents who came to me later and said “we’ve given their dummy away, they put them under the pillow for the dummy fairy,” so that was something that did come about.’ The staff at Footsteps thought that including something around dummies in the project would have been useful. The deputy manager stated, ‘...maybe to raise awareness with the children, putting a seed in their head that they’re getting a bit older and could be thinking about giving it up...not to say that it’s wrong.’

The managers of the private nurseries summarised how they would move forward from the project with staff. At Redhill nursery the manager felt that the children had a ‘...foundation baseline of what sleep is and what’s going on, but now it’s down to our staff...making that awareness grow.’ At Footsteps nursery the staff felt that the project had heightened their perception of the maturity of the children. The manager observed, ‘I think it’s the development, I didn’t think it was as far on as it is and how grown up they are.’ She stated that she had met with staff in the room to discuss how well the children had responded to new challenges and that they need to ‘start

bringing in new activities that are a bit more exciting and learning them new things because obviously their manners were there and they asked you questions, and when you asked them questions the answers they were giving were really intelligent.’

In all of the nurseries, the project booklets, certificates and stickers were said to have delighted children. Teachers reported that they always enjoy taking something home and for many of the children it was the first certificate they had received, which made them feel that they had accomplished something. The practitioner at Footsteps remarked, ‘They were over the moon...it was a very good idea because it made them feel like they’d done something really good, it was like a reward.’

## **6.6 CONCLUSION**

Parents’ knowledge of the project activities confirmed that children had talked about the project in the home and that parents had read the project booklet. 13 parent respondents discussed how their child’s involvement in the project had made them reflect on their child’s sleep and routine. In a number of cases this extra thought, and possibly sleep education filtering from children through to their parents, impacted upon the bedtime practices parents establish for their children. Children were considered to have a heightened awareness about sleep, and the health benefits associated with sleep, by 12 parent respondents, and a similar number of parents observed a positive change in their child’s behaviour at bedtime. Children were said to be quicker to recognise the symptoms of fatigue and more willing to go to bed.

The length and duration of activities was considered suitable, although one nursery felt that a more intense version of the project, delivered over the space of a week, would have been more successful. The project was most successful at the nurseries where staff were enthusiastic, committed and encouraged children to revisit activities or stories. The delivery of activities was easiest and most engaging when working with children in small groups, especially in a private room without the distractions of non-participating children. This was not possible in the ‘Stepping

Stones' private nurseries where policy dictated that nursery staff had to be present when visitors were working with children at all times. Nursery respondents considered the nursery and the staff to have benefited from the project.

Children were viewed as equal partners throughout the nursery intervention (Davis & Hogan, 2004), and supported as decision makers. The recruitment of any interested parent and child ensured that the intervention was inclusive and children were not hand picked for successful participation, a problem Alderson (1999) highlights when conducting participatory research with children in schools. The intervention attempted to gain a perspective of the lived bedtime experience of children today, and the priorities children attach to sleep and bedtime, via activities such as the disposable cameras (Kellet, 2005), although parental interference may have resulted in children not having control over this process.

I have described the intervention activities and based on my reflections and feedback from parents and nursery staff the most effective activities were deemed to be dream catchers, role play and the disposable cameras. However, this intervention would have benefited from a thorough evaluation, ideally one with the participating children. Overall, the available findings suggest that the intervention was appropriate for both private and school nurseries but that there are different considerations to take into account in each.

There were a number of difficulties experienced when developing and evaluating this intervention and working with collaborative partners. These issues are considered in detail in the discussion chapter.

## **CHAPTER 7: COMPARATIVE RESULTS**

### **7.1 INTRODUCTION**

This first half of this chapter uses questionnaire data to present detailed information about the sample participating in the study, their current bedtime practice, their beliefs about their child's sleep and their knowledge of healthy sleep practices. Analyses are conducted to examine whether respondents comprising the pre and post-intervention sample were representative of the original pre-intervention sample. The second part of this chapter concerns only the post-intervention nursery intervention sample and control group. A number of statistical analyses are undertaken to see if either group has undergone any change in children's sleep duration and practices, parental beliefs about their child's sleep and parental knowledge of sleep promoting practices.

### **7.2 DESCRIPTION OF THE OVERALL SAMPLE**

208 pre-intervention questionnaires were completed. The control group constituted the largest sample at 118 respondents, followed by the nursery intervention group at 51 respondents and the parent intervention group at 39 respondents. The control group comprised 98 respondents from four school nurseries and 20 respondents across five Sure Start children's centres. The nursery intervention involved two school nurseries from which there were 34 respondents and two private nurseries containing 17 respondents. The parent intervention group consisted of respondents from four children's centres (n=27), one school nursery (n=7) and one private nursery (n=5).

The following findings from the pre-intervention questionnaire provide a picture of the target population within Stockton on Tees. This includes respondents' characteristics, children's characteristics, and whether respondents have experienced any problems with their children's sleep. Attention is also paid to questionnaire

variables that provide a better understanding of the sleep culture within Stockton on Tees such as children’s sleep environment and napping behaviour.

### **7.2.1 Respondents’ Characteristics**

A variety of data were collected to characterise respondents. The majority of respondents completing a questionnaire were mothers (n=191, 92.7%), whilst 11 respondents were fathers (5.3%), one questionnaire indicated that the mother and father had completed it jointly (0.5%) and three questionnaires were completed by grandmothers (1.5%). For a group breakdown of respondents’ socio-demographic information see Table 8.

**TABLE 8: Respondents’ Characteristics for Pre-intervention Questionnaire**

	<b>CONTROL</b>		<b>PARENT INTERVENTION</b>		<b>NURSERY INTERVENTION</b>	
	<b>n = 118</b>		<b>n = 39</b>		<b>n = 51</b>	
	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>
<b>First child</b>	49	41.5	26	68.4	18	36.0
<b>Gender of child</b>						
Male	55	52.4	16	44.4	27	55.1
Female	50	47.6	20	55.6	22	44.9
<b>Age of child</b>						
3 years	78	66.1	22	56.4	45	88.2
4 years	40	33.9	17	43.6	6	11.8
<b>Age of respondent</b>						
Under 20 years	3	2.6	-	-	-	-
20-24 years	22	19.1	4	10.3	6	12.0
25-29 years	45	39.1	10	25.6	11	22.0
30-34 years	21	18.3	13	33.3	14	28.0
35+ years	24	20.9	12	30.8	19	38.0
<b>Marital status</b>						
Married/living with partner	76	65.0	35	89.7	30	60.0
With partner, living apart	10	8.5	2	5.1	9	18.0
Single	31	26.5	2	5.1	10	20.0
Widowed	-	-	-	-	1	2.0

	<b>CONTROL</b> <b>n = 118</b>		<b>PARENT INTERVENTION</b> <b>n = 39</b>		<b>NURSERY INTERVENTION</b> <b>n = 51</b>	
	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>
<b>Education level</b>						
School education	49	52.7	10	26.3	14	31.8
16-18 education	7	7.5	3	7.9	7	15.9
Vocational training	20	21.5	7	18.4	9	20.5
University education	17	18.3	14	47.4	18	46.2
<b>Benefits excluding child benefit</b>	84	71.8	10	26.3	36	75.0
<b>Ethnicity</b>						
White British	100	87.0	37	94.9	49	100
Asian or Asian British	8	7.0	2	5.1	-	-
Black or Black British	5	4.3	-	-	-	-
Mixed	1	0.9	-	-	-	-
Other	1	0.9	-	-	-	-
<b>Health suffered as a result of child's sleep</b>	23	19.7	7	17.9	26.0	13
<b>Sought medical advice for child's sleep</b>	7	5.9	3	7.7	8.0	4

The majority of children in the nursery intervention were aged three years (88.2%), which compared to just over half of the respondents' children in the parent intervention (56.4%) and two thirds of the control groups' children (66.1%). The respondents in the nursery intervention were mostly aged 30 years and over (66.0%), this was also the case with the parent intervention (64.1%), but accounted for less of the the control group (39.2%). The majority of respondents from the parent intervention were married or living with a partner (89.7%), which compares to just under two thirds of the respondents from the control group (65%) and nursery intervention (60.0%). Just below half of the respondents from the nursery intervention (46.2%) and parent intervention (47.4%) were university educated, a much higher proportion than the control group (18.3%). Benefits (excluding child benefit) were being claimed by 75% of respondents from the nursery intervention and 71.8% of respondents from the control group, but only 26.3% of the parent intervention group.

Research has determined that roughly a quarter of all parents experience problems with their children's sleep during the preschool years (Owens, 2008). This study did not ask directly whether respondents considered their child's sleep a problem, due to the ambiguity of the question. However, it did ascertain that a similar proportion of respondents felt that their own health had suffered as a result of their child's sleep issues (20.8% overall) and a small proportion of respondents had sought medical advice regarding their child's sleep (6.7% overall). The low proportion of respondents indicating that they have sought medical advice might not be a good reflection of the full picture due to the limited nature of the question. Respondents may not have consulted a doctor but may have consulted other health professionals or sources that are medically supported and provide advice on children's sleep, such as a book or the internet. Research has determined that children's sleep problems can result in a reduction of maternal and paternal sleep duration and quality, increasing stress and fatigue (Dahl & El-Sheikh, 2007), depression and feelings of isolation (Swinburne, 2005). The findings imply that there is a proportion of parents in Stockton-on-Tees who feel that their child's sleep is detrimental to their own health, yet either do not find the issue serious enough to seek medical advice or are uncertain of where or how to access guidance. This suggests that there is demand for a sleep intervention in Stockton-on-Tees that provides general guidance on preschool children's sleep through easily accessible materials, activities, and community facilities.

### ***7.2.2 Children's Sleep Environment***

Respondents were asked to indicate the napping habits of their child, their overnight sleeping environment and whether they had a television or computer in the bedroom. See Table 9 for a breakdown by group.

**TABLE 9: Children’s Sleep Environment for Pre-intervention Questionnaire**

	<b>CONTROL</b> <b>n = 118</b>		<b>PARENT</b> <b>INTERVENTION</b> <b>n = 39</b>		<b>NURSERY</b> <b>INTERVENTION</b> <b>n = 51</b>	
	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>
Child naps three or more days of the week	11	9.7	2	5.1	3	6.0
Child sleeps in own room, own bed	63	55.8	31	79.5	30	62.5
Child sleeps in room shared with sibling, own bed	36	31.9	8	20.5	12	25.0
Child sleeps in parents’ room, parents’ bed	9	8.0	-	-	4	8.3
Child sleeps in parents’ room, not in parents’ bed	5	4.4	-	-	2	4.2
Child has a television in bedroom	59	50.9	12	30.8	20	40.0
Child has a computer in bedroom	10	8.6	2	5.1	5	10.2

Environmental factors, such as where a child sleeps and electronic equipment in the bedroom can affect sleep quality and duration. Children who shared a room with a sibling were quite common in this sample (27.9% overall), whilst a small proportion of children slept in their parents’ room in their parents’ bed (6.5% overall), or in their parents’ room in their own bed (3.5% overall). Co-sleeping is generally regarded as a criterion of problem sleep; a ‘reactive’ practice that parents resort to when their child is having problems sleeping (Lozoff et al, 1984). However, as highlighted by Gaylor et al (2005), co-sleeping can also be ‘non reactive’ and is ‘best viewed within a caregiving context’ (Gaylor et al, 2005:9). It is not possible to determine whether co-sleeping in the study sample was indicative of a sleep problem, arose from environmental factors, such as space limitations, or was a parenting choice. The presence of a television in the bedroom has been identified as a significant contributor to children’s sleep problems (Owens et al, 1999). This was

very common in the sample with just under half of the respondents' reporting that their child possessed a television in the bedroom (44.2% overall). A widely held belief voiced by Sure Start children's centre managers when discussing study findings is that parents in the area associate the provision of a television for their child as a status symbol and this theory might warrant further research. Only a small proportion of children had a computer in the bedroom (8.3% overall).

### **7.3 REGULATING CHILDREN'S BEDTIMES AND WAKE TIMES AND SLEEP DURATION**

The literature review in Chapter two identified parenting behaviour as a critical determinant of children's sleep practices and duration. Parents of children experiencing sleep problems often find it difficult to set limits for their children (Adam et al, 2007). A quiet consistent routine and set bedtime and wake time has been found to improve many sleep issues by strengthening circadian and homeostatic processes (Davis et al, 2004). Respondents were asked whether children had regular weekday and weekend bedtimes and wake times and if so what these generally were. The following cross tabulations divide respondents into categories relating to whether their children have a regular weekday bedtime and wake time and sleep duration during weekdays. Weekdays were selected for these analyses rather than weekends, as 91.8% (n=190) of children had a regular weekday bedtime, compared to 83.5% (n=172) on a weekend. A higher proportion of respondents' children also had a regular waking time on weekdays (84.9%, n=174) than at weekends (68.1%, n=139). Studies have found that parents are more likely to regulate children's weekday sleep than weekend sleep (Adam et al, (2007). The sleep duration of each child was calculated from the given weekday bedtime and wake time and two groups were identified: children who sleep for less than 11 hours during the night and children who sleep for 11 hours or more during the night. Sleep duration of less than 11 hours was selected as the cut off point for short sleepers following guidance from the NHS derived from Millpond Children's Sleep Clinic. This states that children aged three years should be sleeping 11 hours over night with

a one hour nap and children aged four years should be sleeping 11.5 hours over night (NHS, 2010). Sleep duration only concerned night sleep as parents were not questioned about nap durations. However, napping practices were very low in the sample; overall 60% of respondents stated that their child no longer napped, and only 7.7% of respondents reported that their child took a nap on three or more days of the week. Respondents were placed in one of the following categories:

*Regulated Long Sleep Schedule (RLSS):* Parents of children with a regular weekday bedtime and wake time who sleep for more than 11 hours on a weekday night.

*Unregulated Sleep Schedule (USS):* Parents of children without a regular weekday bedtime and/or wake time

*Regulated Short Sleep Schedule (RSSS):* Parents of children with a regular weekday bedtime and wake time who slept for less than 11 hours on a weekday night

142 respondents (71.7%) fell into the RLSS category, whilst the USS category comprised 42 respondents (21.2%) and 14 respondents were in the RSSS category (7.1%). 10 respondents had missing data (for example, they had indicated that their child did have a regular bedtime but had not provided this) and were therefore not grouped. As the proportion of respondents with children who slept for less than 11 hours on a regulated sleep schedule (RSSS) was small for meaningful statistical analysis, this group was merged with the unregulated sleep schedule (USS) group. This resulted in a combined group comprised of parents with a regular sleep promoting routine for their child and parents who did not implement a regular sleep promoting routine for their child.

### ***7.3.1 Parental Satisfaction with Children's Sleep and Routine***

Table 10 illustrates the responses of these two groups to statements relating to parental satisfaction with their child's sleep and bedtime routine.

**TABLE 10: Parental Satisfaction with Children’s Sleep and Routine by Respondent Category for Pre-intervention Questionnaire**

	RSSH & USS n=56		RLSS n=142	
	No.	%	No	%
Parent believes child gets enough sleep	47	85.4	133	95.7
Parent would like child to sleep for longer	26	49.1	26	18.3
Parent would like child to go to bed earlier	22	41.5	14	9.9
Parent believes child has a bedtime routine	40	74.1	138	99.3
Parent would like to establish a better bedtime routine	23	42.6	8	5.6

There was considerable disparity in beliefs across the two groups both about their child’s sleep and sleep practices. Over half of the respondents in the RSSS and USS category would like their child to sleep for longer (49.1%), compared to under one fifth in the LS category (18.3%). One way in which the RSSS & USS respondents could lengthen their child’s sleep duration is to establish an earlier bedtime, with 41.5% of respondents indicating that they would like their children to go to bed earlier, compared to only 9.9% of respondents in the RLSS category. A bedtime routine has been found to help regulate circadian rhythms, condition behaviour, reduce anxiety and environmental stimulation and increase relaxation (Galland, 2010). Whilst almost three quarters of respondents in the RSSS & USS category believe that they have a bedtime routine (74.1% compared to 99.3% RLSS), 42.6% of RSSS & USS respondents would like to establish a better night time routine for their child compared to only 5.6% of RLSS respondents. These findings indicate that a large proportion of RSSS & USS respondents are not satisfied with their child’s current sleep duration and night time routine, even where they believe a routine to be in place.

An interesting finding is that 85.4% of respondents in the RSSS & USS category stated that they believed their child to be getting enough sleep. This reveals an anomaly: 49.1% of RSSS & USS respondents also stated that they would like their child to sleep for longer, whilst 41.5% indicated that they would like their child to go to bed earlier. Furthermore this phenomenon is reflected by respondents in the RLSS category, although not to the same extent: 95.7% of RLSS respondents believed their child to be getting enough sleep, 18.3% of respondents indicated that they would like their child to sleep for longer and 9.9% of respondents would like their child to go to bed earlier. This could be indicative of a number of issues. The first is that whilst respondents consider an aspect of their child's sleep problematic, they are unaware that this could mean that their child is at risk of not getting enough sleep. Alternatively, their estimation of enough sleep is at odds with a clinical estimation, as highlighted by Wiggs (2005), "adequate sleep may mean different things to different people." It is also possible that USS respondents believed their children to be getting enough sleep via a variable sleep schedule. The final and perhaps most likely, is that the question was worded in such a way as to ask respondents if they would like more freedom from their child during the evening, or more time in bed, as opposed to whether their child would benefit from more sleep.

### ***7.3.2 Parental Knowledge of Recommended Sleep Practices***

Respondents were provided with a series of statements about healthy sleep practices and asked whether they strongly agreed, agreed, disagreed or strongly disagreed with the statement or if they were unsure. The responses by category are displayed in Table 11 below.

**TABLE 11: Parental Knowledge of Recommended Sleep Practices by Respondent Category for Pre-intervention Questionnaire**

	<b>RSSS &amp; USS n=56</b>		<b>RLSS n=142</b>	
	<b>No.</b>	<b>%</b>	<b>No</b>	<b>%</b>
Parent believes exercise during the day helps children to sleep	49	90.8	141	97.9
Parent believes playing energetic games in the hour before bed helps children to sleep	14	26.0	27	18.7
Parent believes caffeinated products do not affect children's sleep	4	7.4	11	7.8
Parent believes a big meal in the hour before bedtime helps children to sleep	10	18.6	14	9.7
Parent believes calming activities in the hour before bedtime helps children to sleep	45	83.3	135	93.7
Parent believes watching television in the hour before bedtime helps children to sleep	25	47.2	52	36.9
Parent believes playing computer games in the hour before bedtime helps children to sleep	9	16.7	22	15.4
Parent believes bedrooms should be dark to help children to sleep	31	59.6	99	69.7
Parent believes noise in the bedroom can help children to sleep	9	16.7	11	7.7
Parent believes the temperature of the bedroom can affect children's sleep	45	83.4	121	84.6
Parent believes a set bedtime helps children to sleep	41	77.4	135	94.4
Parent believes that it's important to expose children to daylight soon after waking	12	22.6	37	25.7

The findings show that there are educational gaps for a proportion of parents in both groups, in particular, the benefit of exposing children to daylight soon after waking. The importance of a set bedtime to help children to sleep was identified by 77.4% of parents in the RSSS and USS sample and 94.4% of parents in the RLSS sample.

## **7.4 DESCRIPTION OF SUB SAMPLE**

In order to undertake comparative statistics to examine the effectiveness of interventions it was only possible to include respondents who had participated in both pre and post-intervention questionnaires to assess whether individuals made any changes to their responses. Respondents indicated at the end of the pre-intervention questionnaire if they were happy to be contacted again to take part in a later questionnaire, which almost two thirds of respondents agreed to (n=135, 64.9%). However, it was not possible to re-establish contact with 45 of these respondents, which reduced the sample to 90 (66.7% response rate); the control group comprised 40 respondents, the parent intervention group 19 respondents, and the nursery intervention group 31 respondents. As discussed in chapter 5 point 5.4.3 only three parents from the pre and post parent intervention group had been exposed to the parent intervention. Therefore, it was considered misleading to include the parent intervention group in pre and post-intervention analyses, as three is too small a sample for meaningful statistical analysis and any change would be likely spurious and resulting from other unmeasured factors.

### **THE FOLLOWING SECTION RELATES ONLY TO THE CONTROL GROUP AND NURSERY INTERVENTION SAMPLE.**

#### ***7.4.1 Control Group and Nursery Intervention Sub Sample Respondents' Characteristics***

Nearly all of the questionnaires were completed by the child's mother (n=67, 94.4%). The greatest proportion of respondents were aged 35 years and above (n=24, 34.3%). Around two thirds of the sample were married or living with their partner (n=47, 66.2%).

33.9% of respondents highest level of education was school, whilst 27.4% of respondents were university educated. Over a half of respondents claimed benefits, excluding child benefit (n=43, 62.3%). The majority of respondents stated their

ethnicity as White British (n=67, 94.4%). Over a quarter of respondents considered their health to have suffered as a result of their child's sleep (n=20, 28.2%). The characteristics of respondents in the sample by group are detailed in Table 12.

**TABLE 12: Control Group and Nursery Intervention Sub Sample Respondents' Characteristics from Pre-intervention Questionnaire**

	<b>CONTROL n=40</b>		<b>NURSERY INTERVENTION n=31</b>	
	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>
<b>First child</b>	22	55.0	11	35.5
<b>Gender of child</b>				
Male	21	55.3	19	63.3
Female	17	44.7	11	36.7
<b>Age of child</b>				
3 years	29	72.5	29	93.5
4 years	11	27.5	2	6.5
<b>Age of respondent</b>				
Under 20 years	1	2.6	-	-
20-24 years	3	7.7	2	6.5
25-29 years	16	41.0	6	19.4
30-34 years	8	20.5	10	32.3
35+ years	11	28.2	13	41.9
<b>Marital status</b>				
Married/living with partner	28	70.0	19	61.3
With partner, living apart	1	2.5	4	12.9
Single	11	27.5	7	22.6
Widowed	-	-	1	3.2
<b>Education level</b>				
School education	13	38.2	8	28.6
16-18 education	3	8.8	4	14.3
Vocational training	11	32.4	6	21.4
University education	7	20.6	10	35.7
<b>Benefits excluding child benefit</b>	22	56.4	21	70.0
<b>Ethnicity</b>				
White British	36	90.0	31	100.0
Asian or Asian British	3	7.5	-	-
Black or Black British	1	2.5	-	-
Mixed	-	-	-	-
Other	-	-	-	-

	<b>CONTROL n=40</b>		<b>NURSERY INTERVENTION n=31</b>	
	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>
<b>Health suffered as a result of child's sleep</b>	10	25.0	9	29.0
<b>Sought medical advice for child's sleep</b>	4	10.0	3	9.7

***7.4.2 Control Group and Nursery Intervention Sub Sample Children's Sleep Environment***

Almost two thirds of respondents' children slept in their own room in their own bed. Around half of respondents' children had a television in their bedroom (n=34, 49.3%) and nine children had a computer in the bedroom (13.0%). See Table 13 below for a group breakdown.

**TABLE 13: Control Group and Nursery Intervention Sub Sample Children's Sleep Environment for Pre-intervention Questionnaire**

	<b>CONTROL n=40</b>		<b>NURSERY INTERVENTION n=31</b>	
	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>
Child naps three or more days of the week	1	2.6	3	10.0
Child sleeps in own room, own bed	22	56.4	18	60.0
Child sleeps in room shared with sibling, own bed	14	35.6	10	33.3
Child sleeps in parents' room, parents' bed	1	2.6	1	3.3
Child sleeps in parents' room, not in parents' bed	2	5.1	1	3.3
Child has a television in bedroom	21	53.4	13	43.3
Child has a computer in bedroom	8	20.5	1	3.3

### ***7.4.3 How representative are the sub sample groups?***

To assess whether the sub sample groups were representative of the sleep habits of the overall groups, six key issues affecting children's sleep were identified in collaboration with Dr Caroline Jones based on literature findings and findings from her previous PhD study. These comprise where a child sleeps alone or in a shared room, whether a parent stays with a child until they have fallen asleep, how long it takes for a child to fall asleep, whether there is a television in the child's bedroom, whether a respondent believes a bedtime routine to be in place, and whether the respondent is claiming benefits, excluding child benefit.

Non parametric tests of two independent samples were employed as an alternative to independent t-tests to examine whether there was a relationship between two samples where normal distribution was not being assumed and variables were not continuous. The samples concerned were a) respondents participating only pre-intervention, and b) respondents who completed both pre and post-intervention questionnaires. The Mann-Whitney U Test was performed on ordinal variables to examine whether samples of data differed. It is an appropriate test for smaller sample sizes and for data recorded on a subjective scale; the data between values may not be equal. Fischer's exact test was undertaken for nominal variables and provided data on whether there was a significant difference between variables.

**An alpha level of 0.05 was used in all statistical tests.**

The following table illustrates Mann-Whitney U Tests for two of the issues; how long it takes a child to fall asleep and whether respondents believe their child to have a bedtime routine in place.

**TABLE 14: Mann-Whitney U Tests to Explore Differences between Respondents Participating Pre-intervention Only and Pre and Post-intervention in the Control Group and Nursery Intervention Sample**

	<b>MANN-WHITNEY U TEST RESULTS</b>					
	<b>MEAN RANK</b>					
<b>GROUP</b>	<b>PRE</b>	<b>PRE &amp; POST</b>	<b>r</b>	<b>U VALUE</b>	<b>Z VALUE</b>	<b>P VALUE</b>
<b>CONTROL</b>						
How long it takes child to fall asleep	59.19	58.64	.255	1525.500	-.085	.932
Whether respondent believe their child has a bedtime routine	56.40	53.73	.180	1285.000	-.472	.637
<b>NURSERY INTERVENTION</b>						
How long it takes child to fall asleep	30.11	22.68	.008	207.000	-1.802	.072
Whether respondent believe their child has a bedtime routine	28.34	23.76	.045	240.500	-1.276	.202

Measure of effect size,  $r$ , calculated by dividing  $Z$  by the square root of  $N$  ( $r = Z / \sqrt{N}$ )

Findings from the Mann-Whitney U Test illustrate that there were no statistically significant differences pre-intervention questionnaire only and pre and post-intervention in either the control group or the nursery intervention group in how long it takes a child to fall asleep on an evening. However, there was a trend in the nursery intervention group in the direction of children taking longer to fall asleep where respondents only completed pre-intervention questionnaires (U=201.000, P=0.072, mean rank pre-intervention = 30.11, mean rank pre and post-intervention = 22.68,  $r=0.008$ )).

There were also no statistically significant differences in beliefs about bedtime routines for the control (U=1285.000, P=0.637, mean rank pre-intervention = 56.40,

mean rank pre and post-intervention = 53.73,  $r=0.180$ ) and nursery intervention ( $U=240.500$ ,  $P=0.202$ , mean rank pre-intervention = 28.34, mean rank pre and post-intervention = 23.76,  $r=0.045$ ) groups participating in one or both questionnaires

Table 15 displays findings from Fischer’s exact test exploring differences between respondents participating pre-intervention only and pre and post-intervention in the control group and nursery intervention sample.

**TABLE 15: Fischer’s Exact Test to Explore Differences between Respondents Participating Pre-intervention Only and Pre and Post-intervention in the Control Group and Nursery Intervention Sample**

	<b>CONTROL GROUP</b>	<b>NURSERY INTERVENTION</b>
	<b>P VALUE</b>	<b>P VALUE</b>
Child’s sleep location	0.2987	0.1444
Respondent stays with child until asleep	0.8002	0.2505
Television in child’s bedroom	0.2361	0.2575
Respondent claims benefits	0.0092*	0.4926

\* $P<0.05$

Fischer’s exact test elicited a statistically significant relationship between respondents from the control group claiming benefits, excluding child benefit ( $P=0.0092$ ). There were significantly more respondents claiming benefits within the control group who completed pre-intervention questionnaires only, than those who participated in the entire study, this confirms that lower socio economic status respondents are more likely to drop out. There were no statistically significant relationships reported in Table 15 for nursery intervention respondents completing the pre-intervention questionnaire only and the pre and post-intervention questionnaire.

Respondents within the control group displayed one statistically significant relationship; whether respondents claimed benefits, excluding child benefit. Respondents claiming benefits were less likely to participate in both questionnaires. However, whilst this finding highlights that respondents claiming benefits might be more vulnerable to attrition, no differences were identified in the five key issues relating directly to sleep. Therefore it could be argued that the sub sample control group respondents are representative of the original control group.

The nursery intervention group did not demonstrate any statistically significant results for any of the six sleep issues being examined. This suggests that the sub sample group used in analyses was representative of the overall nursery intervention group.

## **7.5 REGULAR BEDTIMES, WAKE TIMES AND SLEEP DURATION**

McNemar's test was used as a non parametric test to compare two paired proportions, in this case pre and post-intervention. Tests examined whether respondents' children had regular weekday and weekend bedtimes, weekday and weekend wake times, and whether respondents were categorised as having regulated sleep (regular weekday bedtime and wake time) with a sleep duration of 11 hours or greater. It is a suitable test when dealing with nominal data in 2x2 tables (all responses yes/no).

**TABLE 16: McNemar Test Results for Regular Bedtimes and Wake Times for Control Group and Nursery Intervention Sub Sample**

MCNEMAR TEST RESULTS	
GROUP	P VALUE
<b>CONTROL</b>	
Weekday bedtime	See footnote below table
Weekend bedtime	1.000 <sup>a</sup>
Weekday wake time	.453 <sup>a</sup>
Weekend wake time	.549 <sup>a</sup>
Regulated sleep schedule	1.000 <sup>a</sup>
Weekday bedtime	.500 <sup>a</sup>
Weekend bedtime	.500 <sup>a</sup>
Weekday wake time	.125 <sup>a</sup>
Weekend wake time	.039 <sup>a*</sup>
Regulated sleep schedule	.687 <sup>a</sup>

a. Binomial distribution used.

\*  $p < 0.05$

Control Weekday bedtime: McNemar Test could not be performed because both variables are not dichotomous with the same values (ie. Table was 1x2 – 0 ‘no’ responses)

A change in the weekend wake time of children within the nursery intervention sample was the only statistically significant finding ( $P=0.039$ ). Children were more likely to have a regular weekend wake time post intervention (93%) than they were pre-intervention (70%).

The McNemar Test did not find any statistically significant change in respondents’ category (whether child has regular bedtime/wake time, and sleep duration equal to or more/less than 11 hours during the week). In order to gain a more detailed understanding on whether the interventions had any impact on sleep duration, both weekend and weekday sleep duration for individual children were analysed pre and post intervention using paired t-tests. The results are displayed by group in Table 17.

**TABLE 17: Paired T-tests for Weekday and Weekend Sleep Duration for Control Group and Nursery Intervention Sub Sample**

GROUP	PAIRED T-TESTS						
	Mean		SD		T	P	df
CONTROL	Pre	Post	Pre	Post			
Weekday Time Slept	704.96	686.33	48.88	54.57	1.921	.066	26
Weekend Time Slept	709.36	678.55	34.56	53.05	2.746	.012*	21
NURSERY INTERVENTION							
Weekday Time Slept	712.04	698.44	24.60	34.38	2.309	.030*	24
Weekend Time Slept	705.58	688.21	39.10	40.81	2.609	.018*	18

\* P<0.05

Paired T-Tests found that the weekday and weekend sleep duration of respondents' children within the nursery intervention sample had undergone statistically significant changes, as had the weekend duration of respondents' children in the control group. There was a significant decrease in the weekday sleep duration of children in the nursery intervention sample pre (M=712.04, SD=24.60) and post-intervention (M=698.44, SD=34.38),  $t(24)=2.309$ ,  $p=0.030$ , and weekend sleep duration of children in the nursery intervention sample pre (M=705.58, SD=39.10) and post-intervention (M=688.21, SD=40.81),  $t(18)=2.609$ ,  $p=0.018$ . The decrease in children's weekend sleep duration was also found in the control group pre (M=709.36, SD=34.56) and post-intervention (M=678.55, SD=53.05)  $t(21)=2.746$ ,  $p=0.012$ , and there was a strong trend in a reduction in weekday sleep duration pre (M=704.96, SD=48.88) and post-intervention (M=686.33, SD=54.57),  $t(26)=1.921$ ,  $p=0.066$ .

As statistically significant changes were found within the control group, the shortening of sleep duration within the nursery intervention group might not be as a result of participation in the study but due to external factors such as the clocks going forward in spring, the fact that the tail end of the post-intervention data was

not gathered until the beginning of the summer holidays when bedtimes and wake times may have become lax, or it could be due to children getting older and bedtimes becoming later, whilst waking times remain unaltered. A number of postal questionnaires were completed and returned during July and August for each group (see Table 5: nursery intervention n=10, and control group n=12).

## **7.6 COMPOSITE SCORES**

Responses to statements were assigned weightings (see Appendix M) and the results were amalgamated from the questionnaire to represent composite scores for different categories relating to key issues in children's sleep. Composite scores minimised the number of variables and provided a general measure for each category. This was suitable as the variables within each composite were related to each other and employed the same measures. The variables combined formed the following categories: children's bedtime behaviour, night waking behaviour, morning waking behaviour and daytime behaviour. They also include parental satisfaction with their child's sleep and bedtime routine and parental knowledge of healthy sleep practices.

Likert scales were used in all questions and the responses for bedtime behaviour, night waking behaviour and morning waking behaviour were a choice of: always, often, occasionally and never, weighted in either direction at 0, 1, 2 and 3. A low score indicates a child willingly going to bed without attempts at stalling bedtime, a low number of night waking behaviours, such as getting into parents' bed during the night, and a child waking up at a time agreeable with parents without wishing to spend longer in bed.

Questions relating to daytime behaviour and parental satisfaction offered responses of strongly agree, agree, disagree and strongly disagree and these were recoded yes/no as discussed in the general methods chapter to detect any change in agreement or satisfaction. A low score for daytime behaviour meant that a child did not complain of being tired or struggle to concentrate during the day. A high score

for parental satisfaction demonstrated a high level of parent satisfaction with their child's sleep.

Parental knowledge statements also enabled respondents to strongly agree, agree, disagree, strongly disagree or indicate that they were unsure of the correct response. A correct response was scored at 1, irrespective of whether respondents indicated a strong response, whilst an unsure or incorrect response scored 0. It was deemed that a correct response is the most important factor for this composite score since the strength of the indicator (i.e. strongly agreed/disagreed) is irrelevant where the response is either correct or incorrect. The majority of respondents either agreed or disagreed with statements and did not engage with the full range of Likert responses. A high score denotes greater parental knowledge.

Wilcoxon Signed Rank Tests were used as a nonparametric test to compare two related samples from the same set of respondents; in this case pre and post-intervention. This test has been applied as group sample sizes are small for respondents' completing both pre and post-intervention questionnaires, and the test does not assume a normal distribution. The results are displayed by group in Table 18.

Table 18 illustrates the Wilcoxon Signed Rank Test Results for each of the categories.

**TABLE 18: Wilcoxon Signed Rank Tests for Composite Scores for Control Group and Nursery Intervention Sub Sample**

<b>WILCOXON SIGNED RANK TEST RESULTS</b>						
<b>GROUP</b>	<b>MEAN</b>		<b>SD</b>			
<b>CONTROL</b>	<b>PRE</b>	<b>POST</b>	<b>PRE</b>	<b>POST</b>	<b>Z VALUE</b>	<b>P VALUE</b>
Children's bedtime behaviour	2.08	2.08	1.528	1.607	-.303 <sup>a</sup>	.762
Children's night waking behaviour	2.74	2.76	2.310	3.149	-.041 <sup>a</sup>	.967
Children's morning waking behaviour	2.13	1.95	1.436	1.627	-1.477 <sup>b</sup>	.140
Children's daytime behaviour	.41	.34	.599	.627	-1.213 <sup>b</sup>	.225
Parental satisfaction	4.60	4.38	1.837	1.847	-.450 <sup>b</sup>	.653
Parental knowledge	8.09	8.73	1.991	1.701	-1.710 <sup>a</sup>	.087
<b>NURSERY INTERVENTION</b>						
Children's bedtime behaviour	1.03	1.30	1.189	1.466	-1.125 <sup>a</sup>	.261
Children's night waking behaviour	3.26	2.24	2.863	1.958	-.862 <sup>b</sup>	.389
Children's morning waking behaviour	2.03	1.27	1.303	1.172	-2.736 <sup>b</sup>	.006*
Children's daytime behaviour	.27	.14	.450	.356	-1.414 <sup>b</sup>	.157
Parental satisfaction	4.16	4.74	1.627	1.125	-.2029 <sup>a</sup>	.042*
Parental knowledge	8.86	10.07	1.356	1.174	-3.380 <sup>a</sup>	.001*

a. Based on negative ranks

b. Based on positive ranks

\* P<0.05

Wilcoxon Signed Rank Tests confirm that there was no statistically significant changes in any of the sleep categories in the control group, although there was a trend toward greater parental knowledge ( $Z=-1.710$ ,  $P=0.087$ ), with the mean increasing from 8.09 pre-intervention ( $SD=1.436$ ) to 8.73 post-intervention ( $SD=1.627$ ). Therefore, any changes perceived in the nursery intervention group are likely to be as a result of participation in the study.

Following the nursery intervention there was a statistically significant change in children's morning waking behaviour ( $Z=-2.736$ ,  $P=0.006$ , pre-int  $M=2.03$ , post-int  $M=1.27$ , pre-int  $SD=1.303$ , post-int  $SD=1.172$ ). Children were less likely to wake up too early, need to be woken up or want to stay in bed.

The nursery intervention also produced statistically significant changes in parental satisfaction ( $Z=-2.029$ ,  $P=0.042$ ), the mean increasing from 4.16 pre-intervention ( $SD=1.627$ ) to 4.74 post-intervention ( $SD=1.125$ ), and parental knowledge ( $Z=-3.380$ ,  $P=0.001$ ), the pre-intervention mean increasing from 8.86 ( $SD=1.356$ ) to 10.07 ( $SD=1.174$ ) post-intervention. Parents were more satisfied with their child's sleep practices and their bedtime routine following the intervention. The nursery intervention was successful in providing parents with education on recommended sleep practices. Chapter 8 provides a full interpretation and discussion of the statistical findings and sets these in the theoretical context.

## **CHAPTER 8: DISCUSSION**

### **8.1 INTRODUCTION**

This chapter describes the findings of the nursery intervention and reflects on possible mechanisms of change for both interventions. The process of developing and evaluating interventions is discussed, particularly the problems encountered and how these were overcome. Power relations between different individuals and groups are explored in detail. The study's limitations are considered and an overall conclusion reached.

### **8.2 CHANGING CHILDREN'S SLEEP PRACTICES**

The main aim of this study was to design, deliver and evaluate two community based social marketing interventions targeting 'normal' preschool children's sleep, and to examine whether the interventions had any impact upon children's sleep and the sleep practices parents determine for their children. Chapter five describes the process of establishing a participatory research group and the delivery of an intervention developed by parents, for parents, in Sure Start children's centres. Findings from interviews, focus groups and parents are considered. Chapter six describes the design of the nursery intervention and its delivery in nurseries. Interviews with participating parents and nursery staff are examined. Comparative findings, illustrated in chapter seven, include the parent intervention sample in pre-intervention analyses. Unfortunately only three participants were aware of having seen the parent intervention, therefore it was ineffectual to include the parent post-intervention sample in analyses. However, it was possible to compare the nursery intervention sample and the control group sample pre and post-intervention. The findings suggest that the nursery intervention had significantly impacted upon three composite variables. Children's morning waking behaviour was rated more positively in a composite score composed of whether children woke too early, needed to be woken or wanted to stay in bed. Following the intervention, parents

appeared more satisfied overall with their child's sleep practices, relating to sleep duration, bedtime, waketime and bedtime routine. Parents also had more knowledge of sleep promoting practices, for example, having quiet time before bedtime and the importance of a dark bedroom for sleeping.

Comparative results highlighted a statistically significant change in the regularity of weekend wake times for the nursery intervention group; a greater proportion of children had a regular wake time post-intervention than pre-intervention. Sleep duration was found to have undergone a statistically significant decrease on a weekday and on a weekend in the nursery intervention group, and on a weekend in the control group, whilst there was a strong trend towards a decrease in weekday sleep in the control group, which was not significant. The shortening of sleep duration in the control group suggests that this is unlikely to be a result of participating in the study.

### **8.3 MECHANISMS OF CHANGE**

#### ***8.3.1 Nursery Intervention***

It is interesting to reflect on the mechanisms of change that led to statistically significant differences in the nursery intervention group, particularly with regard to the changes in parental beliefs and knowledge about sleep. Health promotion in schools is common, and a 'whole school approach to health promotion' is encouraged (Health Technology Assessment, 1999). This includes family and community outreach initiatives to address the limited influence that schools have in the face of contradictory messages in the home and community (Health Technology Assessment, 1999). The World Health Organisation (WHO, 2006) conducted a systematic review of interventions delivered via the 'healthy schools approach' and found that published studies provided very little detail of how interventions were delivered and the quality of the intervention. However, intensive interventions of a long duration were found more effective than short low intensity interventions,

smaller initiatives with attention to delivery were more successful than larger interventions, and interventions involving more than one domain (school environment, curriculum and family/community) were most effective in changing young people's health or health-related behaviour (WHO, 2006). The nursery intervention was a small initiative, delivered by the same two enthusiastic individuals and we actively sought to learn from experience and improve activities during their delivery. The intervention was not long lasting but it did involve seven separate activities, a duration that was been found effective in reducing television viewing by preschool children (Dennison, Russo, Burdick & Jenkins, 2004). The nursery intervention was delivered in nurseries but did aim to reach and involve the family. Research suggests that interventions for preschool children need to be family based because parents are the predominant social force on a preschool child (Skouteris, McCabe, Swinburn & Hill, 2010). There are a number of research studies involving preschool children in childcare or nursery settings and most are participatory studies concerned with gathering children's experiences or opinions on everyday aspects of their life or care (for example: Gray & Winter, 2011; Clark, 2010; Harcourt, 2011). There are far fewer studies that deliver an intervention for preschool children, but those that do are related to health promotion. Early years' childcare settings have been identified as, 'a unique and emerging opportunity to promote the development of healthy lifestyle behaviours' (Dennison et al, 2004: 171). It seems pertinent to target children's behaviours during their preschool years as this is when many lifelong behaviours are becoming established, for instance, sleep duration (Zuckerman et al, 1987; Iglowstein et al, 2003) and diet (Sweitzer et al, 2011).

I believe that the nursery intervention was the first in the UK to provide a social marketing intervention for preschool children focusing on sleep and sleep promoting practices. It addressed three related objectives: to deliver an intervention to encourage children to think about sleep and bedtime, to increase communication between parents and children on the topic of sleep, and to influence parents via their children. The nursery intervention did not include any materials that were directly

aimed at parents, but did incorporate a number of take home prompts, such as the camera, dream catcher and project booklet. Two-thirds of nursery intervention respondents stated that their children had talked about intervention activities in the home. Prompts fostered discussion between parents and children (Dennison et al, 2004), and provided children with an opportunity to demonstrate their knowledge to parents, ‘Opportunities for knowledge or skill demonstration by the child in front of the parent often stimulates conversation and encouragement by the parent’ (Sweitzer et al, 2011: 541). Respondents reported knowledge demonstration, such as children’s increased awareness of the importance of sleep, “if I don’t go to sleep now then I’ll be very tired for the next day, won’t I?” Bedtime itself was also likely to act as a prompt for children to talk about or demonstrate their behavioural capability, the application of learned knowledge and a key aspect of social cognitive theory (McAlister, Perry, & Parcel, 2008). For example, one parent stated “oh he showed me how to go to sleep yeah.” Reinforcement is perceived as an important component of social cognitive theory and if parents praised children’s behaviour it is likely that this will have promoted the occurrence of the new behaviour (McAlister et al, 2008). Parents also reported an increase in knowledge about sleep promoting practices, which is likely to have been a result of discussion with their child and other parents. For example, one parent referred to their heightened awareness of the importance of daylight and fresh air, ‘...sometimes now we just take them on the field, just to kick a ball about and things like that, I think it does help them to sleep better.’ Parents described having discussed activities with children whilst looking through the project booklet, and also having shown and discussed the project booklet with family members and friends. Social cognitive theory provides a framework for understanding, predicting and changing behaviour (Bandura, 1989), it concerns the interpersonal level, and here the intervention generated discussion not only between parent and child, but wider family and friends. These are contacts that provide social identity and support, both of which are important when making behaviour changes.

The authors of a study encouraging the consumption of fruit, vegetables and whole wheat believed that educational activities delivered to preschool children in the classroom had created an expectation amongst children that parents would practice the desired behaviour (Sweitzer et al, 2011). It is possible that the nursery intervention activities, particularly those involving role play that provided an opportunity for observational learning (McAlister et al, 2008), created an expectation amongst children that they would practice this behaviour at home. A number of parents stated during post-intervention interviews that they had seen an improvement in their child's behaviour at bedtime, which they believed was the result of a greater awareness around sleep. It could also be argued that knowledge about sleep promoting practices increased preschool children's autonomy over their own sleep and encouraged responsibility in terms of their routine, bedtime and waketime (Spilsbury et al, 2005), leading to changes in children's behaviour and parental satisfaction with their children's sleep..

'Pester power' is a term used in marketing when advertisements target children who then 'pester' parents to purchase a product. Using children to reach parents is not uncommon in social marketing. For example, there is a series of smoking cessation advertisements in which children explain their concerns about their parents' smoking. The advertisements are described as "powerful" as they tap into children's day-to-day emotions' (Cancer Research UK, 2009); parents value their children's opinions and wish to act responsibly. Companies are also aware to the use of pester power to encourage positive behaviour. For example, npower's Greener Schools campaign uses cartoon characters and online games to teach children about energy efficiency. The company states that it would be beneficial if children are able to influence their parents to turn the heating down at home and buy energy-efficient white goods (Marketing Week, 2008). Parents in the nursery intervention reported having made a number of changes to children's sleep practices, most notably, implementing and improving bedtime routines, helping children to initiate sleep independently and moving children from the parents' bedroom into their own bedroom. It is possible that these changes were a result of children's

influence. Sleep promoting bedtime routines were targeted during the intervention, whilst activities such as Peace At Last included discussion of bedroom environments, including how and where children slept. Children are likely to have become aware of other children's bedtime practices and what could be considered the norm, which again relates to the interpersonal level of behaviour change. For example, one parent said, 'The kids who've not got a bedtime routine at that age might think "my friends are doing that so maybe I should do that"' and another stated that, 'sometimes I think she thinks she's the only person who has to go to bed. I don't think they think of their friends also having to do it, so I think there are benefits when they do it as a joint activity.'

Due to participation in the nursery intervention, a number of parents reported that they had discussed sleep with other parents at nursery. One parent stated that they had been on the brink of taking their child to the doctors regarding their sleep, but after hearing about other children's sleep realised that their child's sleep was 'normal.' Cultural norms establish whether children's sleep is perceived as 'problematic' or 'normal' (Jenni and O'Connor, 2005:206), and this parent's experience demonstrates how quickly concerns can be alleviated if the behaviour is perceived to be the norm. Parents' expectations and beliefs about their children's sleep may have been revised after sharing experiences and advice with other parents.

Less regularity in children's weekday wake time in the nursery intervention group may be due to external factors such as the clocks going forward in spring, and the fact that the tail end of the post intervention data for this group was not gathered until the beginning of the summer holidays when bedtimes and wake times may have become lax.

### ***8.3.2 Parent Intervention***

Unfortunately, due to a small post-intervention parent sample and low levels of awareness surrounding the parent intervention, it was not possible to evaluate whether the parent intervention impacted upon children's or parents' behaviour, or parents' beliefs or knowledge about their children's sleep. It is, however, possible to reflect on the means by which it might have been influential. The individual objectives for this study were: to use participatory research to design, develop and evaluate a social marketing intervention, to encourage parents to think about their child's sleep and bedtime, and to increase parents' self efficacy over their child's sleep. An acknowledged problem with social marketing is that it is perceived to be paternalistic (Sugden, 2008) and raises the question: "who determines what is good for the individual or society?" Andreasen argues (2006) that the focus of social marketing needs to shift from the 'final customers,' those individuals whose behaviour is under focus, to social improvement in the community (Andreasen, 2006:8). One way of progressing beyond a 'top down' approach of targeting the individual, is via a 'bottom up' approach using applied anthropological methods from participant observation to culture brokers (Brown, 1997), and in the case of this study, participatory research. A recent report addressing the decentralisation of behaviour change policies and initiatives argues that involving local citizens in running and designing local services may generate sustainable behaviour change (The British Academy for Humanities & Social Sciences, 2012). A study by De Bock, Fischer, Hoffman and Renz-Polster (2010) used participatory research with parents for the first time when promoting physical activity in preschool children in the US. It was considered that the involvement of parents would provide them with a sense of autonomy, enhance commitment, have more impact and lead to continued behaviour change. The use of local parents meant that they could tailor the intervention to local needs and resources as they were aware of barriers to physical activity in the community. Whilst it is unlikely that children's sleep differs substantially in Stockton-on-Tees than from anywhere else within the UK, the use of local parents to design the intervention ensured that the language used was

appropriate and the intervention was locally relevant (Israel, Schulz, Parker, & Becker, 1998). The participatory research group identified priorities, intervention materials and provided a local 'voice' for the intervention, which may have been unique to parents within Stockton-on-Tees. Materials illustrated families' representative of the area, as opposed to glossy and 'politically correct' families featuring in government produced materials. The intervention was for mums, by mums, in Stockton-on-Tees and I believe that parents valued the intervention because it was localised. The use of local parents and the open discussion of the problems that they had encountered ensured that the intervention was always audience centred; the group producing intervention materials understood where the audience members were 'coming from' (Andreasen, 2006:96) This also provided a personal and novel approach to communicating information about sleep and sleep practices. The intervention did not instruct parents, but empowered individuals to make healthier decisions (Israel et al, 1998).

Social marketing is an effective approach to lead to changes in attitude, knowledge and behaviour (Andreasen, 1995). A basic approach to social marketing is through the '4 Ps' of marketing management, product, promotion, place, and price (P. Kotler & Zaltman, 1971). The 'product' of the parent intervention was the behaviour changes that the audience for the intervention was being invited to make, which encompassed straight forward approaches, such as implementing a bedtime routine. The intervention benefited from its 'promotion,' notice boards had good visibility, the washing lines and pegs helped to make them interesting and interactive, and new materials were clearly identified and promoted. Incentives were supplied to parents to pay attention to the intervention materials, such as leaflets to take home and books to borrow. Staff within the children's centres and nursery were fully briefed about the intervention and helped promote it with parents. The 'place' for the intervention was Sure Start children's centres and a private nursery and school nursery, which ensured that the intervention would be seen by parents. However, in light of feedback following the intervention it seems likely that the intervention was primarily seen by parents of infants and young toddlers within Sure Start children's

centres, as opposed to the target audience, parents of three and four year old children. Another issue with 'place' was the transient nature of the clients accessing Sure Start children's centres, meaning that parents may not have followed the intervention from beginning to end, which was likely to reduce its effectiveness. The 'price' of the intervention was the expenditure of effort and the investment in time for parents making changes to their children's sleep. It could also be argued that a cost is psychological concern about children's sleep for parents. The intervention utilised aspects of social cognitive theory, the most significant being observational learning or modelling. Observational learning is where people learn what to expect through the experiences of others. This is particularly effective where the person observed is considered to be like the observer (National Cancer Institute, 2005). Intervention materials featured photos and experiences of parents in the participatory research group, and the group intended that their audience should find participants and materials easy to relate to, as one participant said 'like one mum talking to another.' Parents perceived the intervention as 'real,' general feedback received by the participatory research groups' evaluation and pegged to intervention notice boards included, 'looked at leaflets of real families and how they have tried to get their children to sleep through...', 'love the photos of real people and children,' and 'I know some of the people on the pictures so it's nice that it's real and you know that the ideas are realistic.' The intervention's credibility was increased by the participatory research group producing materials in their own words, including details of their successes and failures, and photos were snapshots of their families, rather than glossy promotional shots (Van Willigen, 1993). Leaflets also addressed different stages in children's sleep and development that encouraged self-efficacy about a range of parenting issues, which is thought more effective than simply targeting sleep in an intervention (Johnson & McMahon, 2008). Feedback from the participatory research group's evaluation included, 'I have kept them in case I need them in the future...'

The aims of a study by Sweitzer et al (2011) addressing preschool children's consumption of fruit, vegetables and wholewheat were similar to the parent

intervention, targeting parents' behaviour, attitudes and knowledge. The target audience was all parents (as opposed to only children with poor diets, or in this study's case, children with sleep issues) and it could be argued that the topic of whether children are getting enough fruit, vegetables and whole wheat might be viewed by parents as having a similar level of importance as to whether children are getting enough sleep. The study provided parents with handouts that provided role model stories of parents packing appropriate lunches that could be emulated by parents. The handouts were piloted with parents and childcare staff in group interviews. The social cognitive theory used in leaflets was similar to that adopted by the participatory research group in the parent intervention. Materials in the parent intervention were intended to provide information, motivational messages, examples that parents could follow, social references to legitimise recommended behaviour, suggestions for achievable changes and reminders.

## **8.4 THE PROCESS OF DEVELOPING INTERVENTIONS**

### ***8.4.1 The Process of Developing the Nursery Intervention***

In an ideal world, both interventions would have been established via participatory research. However, multiple agencies wished to have input in the nursery intervention: management from Stockton-on-Tees Sure Start children's centres, the Local Authority, private and school nurseries, and Andy, the masters student who had secured an Erasmus placement for one year at Durham University from the Czech Republic specifically to work on this project. It was also necessary to consider the Early Years Foundation Stage (EYFS) in the development of all activities. The difficulties encountered working with Andy are described in chapter 6 (section 6.4.5), which include his reluctance to take on board suggestions for the design of activities made by other agencies. I found myself having to adopt the role of an appeaser and mediator between Andy and other agencies. Andy had his own agenda for the research, which was based on a much smaller picture of the project than my own, as he was only involved in the nursery intervention. Although Andy

was, of course, informed of the overall aims and objectives I had established for the research, he had not been involved in their formulation and he had his own set of separate aims and objectives that related to his dissertation. This illustrates the difficulty of involving someone in a project after its overall design had been established. Cultural differences in approaches to education were also a problem, as Andy had explained that in Czech Republic nurseries were very structured and education was much more prescribed and directed. This approach was quite disparate from the EYFS, which Andy disliked, and made it difficult for him to design activities that would satisfy this framework. I provided Andy with information about social marketing but its inclusion was something I ensured, for example by stating that some activities had to provide take home prompts and by independently producing certificates and the project booklets.

The delivery of the intervention aimed to produce research with children, which involved us spending time forming relationships with children (Claverling and McLaughlin, 2010). Norton Primary School nursery was the nursery where we considered ourselves to have formed the best relationships with children and where activities were most successful, which was primarily due to the setting. At this nursery there was a small room separate from the classroom for delivering activities in small groups. In contrast, we struggled to get to know the children at Frederick Natrass Primary School where the environment was open plan. This included reception year, which also contributed to noise level, and the nursery operated an open door policy all day, where children were free to go in or out of doors. A participatory research study with preschool children by Gray and Winter (2011) ensured consistency within and between settings by using the same approach in each of the four childcare settings. Unfortunately this intervention often lacked consistency in the delivery of activities, as different nursery settings meant that activities were delivered in different size groups, in private or open plan rooms, with the involvement of members of staff or without, and sometimes there was unforeseen changes in activities. For example, when Redhill nursery staff set up the house area as a bedroom and provided children with pyjamas and toothbrushes, or

when Footsteps nursery did not have the den making equipment we had been led to understand they did have. However, the intervention did utilise techniques such as photography and nonverbal role play, in order to provide children with the opportunity to participate fully in the research and provide their own perspectives on their sleep and sleep practices (Docherty & Sandelowski, 1999).

Andy had responsibility for maintaining data that evaluated children's interest in intervention activities, whilst I led the delivery of activities. This included quantitative observations on the number of children participating (including when children lost interest and left an activity, or a child joined in an activity part way through), and children's responses to whether they had enjoyed an activity and if they would like to do it again. Observation of children's often non-verbal cues (Skanfors, 2009) during the delivery of activities provided us with instant feedback on whether activities were too complex, long or boring, which enabled us to make small changes before delivering the same activity with another group. Andy wanted to test children's knowledge about sleep and bedtime to see if learning outcomes had been satisfied. However, the activities did not easily lend themselves to this kind of evaluation and children would start to disengage as activities drew to a close. Children often illustrated understanding about something covered in a previous activity at a later date. For example, during the third activity, without prompting, children pointed out nocturnal animals in the story book that we had discussed during the second activity, and during role play children referred to the bedtime practices of the boy and his tiger in the first activity. An objective for this intervention was to encourage children to think about sleep and bedtime. I considered that the activities provided a sound basis for this and anticipated that the post-intervention semi-structured interviews with parents and nursery staff would provide data on whether this, and the other two objectives, had been achieved. However, more rigorous observation of children during activities might have provided more appropriate and in-depth data for this objective. I mentioned in point 6.4.3 my disappointment at not receiving the observational data records Andy was supposed to be maintaining. In this section I also discuss the poor quality of the

digitally recorded information, and how I was dissuaded from videotaping activities, for which I had consent, by the collaborative agencies, which would have provided observational data without the need for reliance on Andy.

This intervention intended to conduct research *with* children, as opposed to research *on* children (Clavering & McLaughlin, 2010, see section 6.2). Whilst I believe that the delivery of activities met this goal, the evaluation did not. In order to achieve this, the evaluation should not have relied solely on data generated from adults and should have incorporated a more comprehensive evaluation with participating children. Trying to evaluate activities by asking children questions in groups, which were sometimes very large, when children had finished an activity and were keen to start a different one, was not a successful approach. An alternative would have been to have enlisted nursery staff to act as co-researchers (Perry & Dockett, 2011) or help evaluate understanding by asking children what they did in an activity a day or two following its delivery, a technique used by Gray and Winter (2011) when ensuring that children understood what they had consented to by agreeing to participate in their study. A downside of this approach is that it would have meant asking teachers who were already fully occupied to play an active role in the research, and relying on them to undertake both this aspect of the research and to report children's responses. There are, of course, research approaches that can be used to directly gather the views and experiences of young children. For example, the 'draw and talk' technique (Horstman, Aldiss, Richardson, & Gibson, 2008; Backett and Alexander, 1991), which I had found difficult to utilise during formative MA research with three year old children in a nursery setting. There are also research tools specifically developed to gather views and experiences from children under five years of age, such as multimodal map making using the Mosaic approach, where children can develop their thoughts without the fear of having to second-guess an sought after response (Clark, 2005). In retrospect, I believe that purposeful conversations, or interviews, which have been successfully utilised during research with children aged three to five years (Einarsdottir, 2011; Harcourt, 2011; Docherty

& Sandelowski, 1999), would have provided a useful evaluative tool in this instance, if conducted with pairs or trios of children.

However, it is important to remember that the main aim of this PhD study was to design, develop and evaluate two social marketing sleep interventions, and examine their effect on preschool children's sleep and the sleep practices parents establish for their children. This aim of this study was not to conduct research with children as co-investigators, on the grounds that children are the most appropriate generators of knowledge about children (Porter, Townsend, & Hampshire, 2012). Whilst it was hoped that children would play an active role in the research by taking the lead during activities, the design of the intervention and overall delivery of activities was adult led since the intention was to satisfy particular aims and objectives (Clavering & McLaughlin, 2010). I had determined that the most effective method to investigate the effect of interventions was via a pre-post test questionnaire and semi-structured interviews with parents. Conducting purposeful conversations or interviews to evaluate activities with children would have been interesting, but also problematic and time consuming and would have been affected by the same constraints faced when delivering activities in nursery environments. For example, with the exception of Norton Primary School nursery it would not have been possible to find a quiet private space to talk to children, and at Redhill nursery a staff member would have had to have been present during conversations, further encroaching on staff's time. In some nurseries activities were conducted with different children each week, rather than having a stable group, so it was difficult to know who had done which activity. Activities would need to have been evaluated collectively at the end of the intervention, therefore findings could not have been used to guide future activities. This form of evaluation would have been unlikely to provide enlightenment on the *development* of children's interest or knowledge about sleep and bedtime without having undertaken a similar conversation prior to the intervention activities.

#### ***8.4.2 Issues of Power impacting upon the Nursery Intervention***

The symbolic capital held by the steering group, nursery teachers and staff and the participatory research group impacted upon the design of this study. These individuals had expert status in the field of childcare based on qualifications and experience (Bourdieu, 1977). Andy also had expert status due to his experience of working with children; he volunteered at Scouts and youth groups, and he was part way through a teaching qualification. I experienced difficulties negotiating between the steering group, nursery staff, participatory research group and Andy. Andy considered himself responsible for the design of intervention activities and I had been willing for him to lead this stage of the intervention. However, the other agencies were far more experienced with this age group and in meeting the demands of the EYFS. Andy was not used to collaborating with other individuals or organisations and was sensitive about what he sometimes perceived as criticism of his ideas. The nurseries had physical power (Hampshire et al, 2005) in the form of buildings, facilities and resources, and we were reliant on the good will of the steering group, nursery teachers and staff to undertake the research, and goodwill is, in itself, a powerful form of symbolic capital (Bourdieu, 1998). I was concerned that good relations were maintained with all agencies that could affect the intervention and this resulted in me asserting authoritative power (Bourdieu, 1998) as lead researcher to ensure that the changes that had been suggested were implemented. I did not feel that this affected Andy and my relationship at the time, but in retrospect it is possible that he felt that he had been overruled and that this lessened his commitment to undertake other tasks he had responsibility for, such as maintaining records for evaluation. Teaching and nursery staff had authoritative power (Bourdieu, 1998) that affected the research considerably. I was reliant on them in the recruitment of participants, for example, in the case of Frederick Nattrass primary school nursery, where the teacher had informed me that letters and questionnaires had been sent out and returned, which turned out not to be the case. I was also dependent on teaching and nursery staff to help me establish the best possible environment in which to deliver the research, such as the allocation of

times, rooms and groups, and although I occasionally made requests of teachers, I was generally powerless to implement changes that might have improved the delivery of activities.

I was conscious of the unequal power relations that exist when undertaking research with children (see point 6.2). This study recognised that children actively ‘create, interpret and produce meanings, understandings and “knowledge”’ (Hampshire et al., 2012), and incorporated techniques that provided children with a voice to record what bedtime and sleep meant for them (James, 2007), for example, through the use of disposable cameras. However, this was used to generate discussion to aid the intervention’s aim and objectives, rather than to produce research findings that would have benefited from additional research methods, such as participant observation or interviews, to provide a better insight into what aspects of sleep and bedtime are important to children (James, 2007). One of the best ways of addressing the adult-child power imbalance in research is for children to act as co-researchers as well as informants (James, 2007) or for research to be child led but this requires children to establish their own research agenda (Clavering & McLaughlin, 2010). For this intervention to have been more participatory or child led it would have required a shift in the focus of the intervention’s aims and objectives. It is also likely that I would have experienced additional difficulties working with the steering group and Andy, and recruiting nurseries. These agencies were keen to help determine activities that they thought would be effective and beneficial for preschool children and wanted detailed activity information, which again highlights the adult-led nature of this intervention. However, this study could have helped address the power imbalance by incorporating evaluative research that assessed the impact of interventions directly with children as discussed above.

#### ***8.4.3 The Process of Developing the Parent Intervention***

The parent intervention did not derive from direct demand from within the community and was designed without input from the community, by academics and

senior management from Stockton Sure Start children's centres. Funding for the intervention was applied for and granted by the Economic and Social Research Council and Stockton-on-Tees Sure Start children's centres. However, the involvement of the community prior to an intervention, whilst ideal, is often not possible. A review of 60 community participatory studies found that funding was generally applied for by the researcher before the involvement of the community (Viswanathan et al., 2004). The recruitment and establishment of the participatory group was a very involved, effortful and time consuming process. Participants' motives for joining the group were personal; they were all experiencing a problem with their child's sleep and participants had no desire, nor did they feel qualified, to advise others on their children's sleep. It took the group five months of meetings, gentle reminders and guidance in order for participants to be ready to consider the researchers' purpose for establishing this group; to design and develop a sleep intervention aimed at parents. Wallerstein and Duran (2006) discuss issues of participation and control, maintaining that the two are never static and whilst a project might be initiated with a university-driven agenda, in time this can evolve to be a mutual or community-driven agenda. The researchers describe their own experience of participatory research with a tribal committee, stating that it took members two years to realise that they were in the "driver's seat" and this was only when they saw their suggestions being turned into research instruments.

It is generally the case that researchers take responsibility for study aims, objectives and hypotheses in participatory research projects. It is unclear whether this is due to an imbalance of decision making power, lack of experience or ownership of a project (Viswanathan et al, 2004). In the case of this PhD study, I had written a project proposal before commencing research and the aim was based on literature findings and formative research. The group was informed of the overall study aim and two specific objectives emerged from group discussion during the process of designing and delivering this intervention. These were to stimulate parents' interest in their child's sleep and bedtime, and increase parents' self-efficacy in making a change to their child's sleep or bedtime, to which participants were very committed.

However, I do believe that the group's target audience for the intervention always differed slightly from my own. Although the group knew that the intervention was intended for all parents, they were predominantly interested in providing support for, and building the confidence of, parents who were experiencing difficulties with their children's sleep. This is not unsurprising as the members of the group had all joined due to their own children's sleep problems, and although the group had evolved and most participants had successfully addressed their child's sleep problem, this remained the group's main area of interest and this was the audience that the group was most interested in and able to relate to. This influenced the process of developing intervention materials, with the second month of the intervention being completely devoted to a specific sleep problem; night waking. The participatory research group was more interested in providing support for parents by providing helpful suggestions than in necessarily trying to change behaviour. It was also the case that participants had children ranging from infants to school aged children and materials were not produced with only preschool children in mind, as I had intended. They instead reflect the wider age group that concerned participants. In the case of the parent intervention, the project, as detailed above, had certainly been initiated with a university-driven agenda. However, just as Wallerstein and Duran's (2006) participants were empowered to take control of the project when they saw the influence of their suggestions, the participatory group realised that the parent intervention was their's to take forward as they wished and developed the confidence and enthusiasm to start supplying their own words and personal experiences in intervention materials after they saw the first intervention materials available and being utilised by other parents. Participants' confidence developed with the development of the intervention.

My role during the development of the intervention was that of a coordinator, I organised meetings, established an email group, reminded participants about their contributions and took charge of the development of leaflets and posters, drafts of which were emailed around the group for approval. This approach suited all of the participants, no member of the group was ever interested in taking on a more

organisational role, and I found it necessary as I was on a limited time schedule. I adopted a directive/non-directive leadership approach (Dworski-Riggs & Langhout, 2010) to try and ensure that power always lay with the participants, they made all the final decisions, but I was always there driving the project forward and ensuring that slow progress did not frustrate participants or cause them to lose interest in the project.

There were also a number of difficulties in combining participatory research and social marketing, the main one being that it was very difficult to implement social marketing theory and adopt an entirely collegiate participatory approach, where local people have control over the process (Cornwall & Jewkes, 1995). The participatory research group was provided with examples of social marketing interventions and information on transtheoretical models and social cognitive theory. Where the group had already determined something to be of importance, for example, building parents' confidence, this was considered during the production of intervention materials, but the remainder of the theory was more or less disregarded. The group felt that the theory was overcomplicating the issue and that their experience was more important in driving the design of interventions. However, the design of materials, whether intentional or not, still abided by the general principles of social marketing and incorporated social cognitive theory, such as observational learning, motivational messages, self efficacy and behavioural capability (the knowledge to undertake behaviour change).

The participatory research group was enthusiastic to be involved in the evaluation of the intervention and provided feedback on the pre and post-intervention questionnaire. I did not involve the participatory research group in the questionnaire design as I had already established the areas of interest I wished to evaluate based on research literature and other sleep questionnaires. I did not ask the group to become involved in recruiting participants as this was undertaken before the intervention was being developed, and I was concerned that the group was lacking in confidence, time and an overall picture of what the project was trying to achieve. I was also

concerned that participants would be scared off attending meetings if I asked too much of them too soon. However, even when the group was confident and desired to be provided with the opportunity to evaluate their own intervention I did not offer to involve them in gathering data from the post-intervention questionnaire, interviews or focus groups. Gathering the post-intervention questionnaire data over the telephone was a very time consuming process and would have required reimbursing respondents for their telephone costs, and I felt that respondents in interviews and focus groups might not have been as honest in their opinions of the intervention if a parent member of the group was present. However, I also wished to maintain control over the data collection to a large degree to ensure that the necessary data was collected quickly and accurately for this thesis. The participatory research group instead designed their own semi-structured questionnaire, asking parents the questions that the group considered most relevant to the intervention and the two objectives that the group had established. These included whether parents had seen intervention materials, if they were of interest to them, whether they felt more aware about their child's sleep as a result of the project, if they had told anyone about a leaflet or passed one on, and whether the intervention had encouraged them to try, or consider trying, to change an aspect of their child's sleep. The participatory research group's interviews were conducted in stay and play sessions with a convenience sample. This illustrates a difficulty in incorporating a participatory research group into a PhD study; it is difficult for the PhD student to relinquish all control. I needed to gather accurate data relating to certain variables to satisfy the study aims I had established for both interventions. I also doubt whether the participatory research group would have been interested in gathering the post-intervention questionnaire data as they had not been responsible for its design. The group had their own questions that they wished to have responses for, which were directly related to the intervention, whereas the questionnaire data covered a much broader area of interest and both interventions, as I wished the two to be comparable.

This also highlights the difficulty of both conducting and evaluating an intervention via participatory research. In a systematic review of 60 published journal articles relating to community-based participatory research, only half were found to include an intervention (n=30), 28 of which involved the community in the design and implementation of interventions. Only 12 of the projects had been evaluated, the remaining 18 were either ongoing or did not include a full evaluation (Viswanathan et al, 2004). The review suggests that the short-fall in completed evaluations may be due to “lack of fit” between the dynamics of true community collaborations and the peer-review funding approach to setting research priorities, maintaining timelines, and exercising budgetary control. Partnership development between communities and researchers takes time and if it is to be truly participatory, then a different way of thinking about choosing research topics and allocating funding is vital (Viswanathan et al, 2004). Empirically supported interventions (ESIs) are often relied upon by researchers to determine intervention effectiveness. Wallerstein and Duran (2006) highlight that this dependence may delegitimise knowledge generated by the local community. This intervention was able to incorporate knowledge generated by the local community within the intervention materials, for example, the last intervention leaflet was an evaluative one describing the group’s experience of participating in the intervention. The participatory group also produced a journal article describing their experience and providing suggestions to practitioners wishing to conduct similar participatory research (Newark et al, 2011).

#### ***8.4.4 Issues of Power Impacting Upon the Parent Intervention***

In chapter 5 (section 5.2.3) I discussed how I hoped to address and discharge power imbalances at the outset of establishing the participatory group. I did not anticipate that power would continue to be an overarching theme throughout the process of developing the parent intervention. As described in this section, I exercised power by establishing not only the project design, but also the aim of the study. However, the group exercised power by choosing to take, at times, a narrower focus of the topic than I had established in the aim of the study, addressing sleep issues rather

than 'normal' sleep, for all ages, rather than concentrating on preschool children. I did not try to influence the group to do anything differently as I am fully committed to the concept of participatory research and accepted that it was the participatory research group's entitlement to share their interests and experiences with a wider audience as they saw fit. The group was also enthusiastic about sleep issues, and I believe their enthusiasm is apparent in the materials, which may have been lost if the group had been influenced to write more generally. I chose not to involve the participatory research group in the evaluation of the intervention for this thesis, a decision that I did not discuss with the group. The group exercised power to design and conduct their own evaluation, following the production of the final materials. This decision was made at a meeting and I was happy to support it. In retrospect, I am not surprised that the participatory research group wished to conduct their own evaluation, having exercised full control over the design and delivery of the intervention, why should they then relinquish power over the evaluation? These issues have led me to question whether it is possible for a researcher to establish study aims, objectives, hypotheses and data measurement tools prior to the establishment of a participatory research group, as a study's results and validity are threatened where there is a mismatch in the researchers' and participatory research groups' areas of interest or priorities.

Sure Start possessed symbolic capital (Bourdieu, 1977) having status as a large and prestigious organisation renowned for supplying services and activities with the aim of providing children with the best start in life. They also possess physical power (Hampshire et al, 2005) in the form of buildings, facilities and resources. By association with Sure Start the participatory research group was imbued with symbolic capital that provided gravitas to the intervention materials they produced (Grenfell, 2008).

As described during the design of the parent intervention (see point 5.3), the participatory research group was beholden to the steering group when wishing to implement decisions. For example, the steering group refused the participatory

research group's request for a certain notice board for the display, to use balloons and to give away free samples of products related to children's bedtime. However, it is likely that there will always be some constraints within which participatory groups have to operate when working collaboratively with an organisation or when reliant on an organisation's goodwill. As mentioned earlier, good will is a powerful form of symbolic capital (Bourdieu, 1998). The steering group intervened in the development of materials on a number of occasions; providing feedback that they thought posters were too text heavy, desiring us to provide pictorial displays on notice boards, and requesting that we publicise a leaflet on diet that they had available in children's centres. All of these requirements were satisfied by the participatory research group in a process of 'gift exchange' (Bourdieu, 1998). Following the production of the developmental leaflet, a manager raised a concern about child protection regarding one of the photos used in a leaflet of a child sitting on the toilet. If the manager requested that this photo was changed, which she certainly considered within her rights, this would have caused a considerable power clash between the steering group and the participatory research group. My own position, being a member of both groups and acting as an intermediary was a difficult one. The participatory research group had given up considerable time to the project and this time can be argued to be 'the greatest of gifts' (Bourdieu, 1977:180). I was reliant on the goodwill of both groups and I felt under pressure to try and meet the needs of both groups in order to progress the development of the intervention, which was my primary concern. I felt obliged to place the view of the opposing group during any debates, whilst also trying to appease the group with which I was meeting. I now wonder if including a parent representative member of the participatory research group on the steering group would have changed the power status, and 'them' and 'us' feeling between the two groups. As discussed in point 5.2.3, there were a number of reasons for not including a member of the steering group within the participatory research group.

I worked hard to ensure that the participatory research group was not alienated by the symbolic capital I had inevitably accumulated as a researcher from university

with expert knowledge, who was managing the budget and co-ordinating the intervention (Bourdieu, 1977). I wished participants to perceive themselves as my equals, as they were providing their own expert knowledge and the participatory research group was responsible for the design and delivery of the intervention. I detailed the development of interventions in point 5.3, which included a number of occasions upon which I made executive decisions to include or exclude items based on research findings, for example, the inclusion of a warning that controlled crying techniques should not be attempted with children under one year of age. There was never any dispute with the group over these decisions, and had a participant raised a concern I would have been more than willing to talk this over with the group. However, by making such decisions independently I was exercising authoritative power (Bourdieu, 1998). This was not something I felt comfortable doing, but whilst I was a fully committed member of the participatory research group I also had a dual role in the group and could not, at times, ignore that I was also a university researcher with a duty to impart advice based on research findings. I also felt that providing research findings was one of my main contributions to the participatory research group when it came to discussing sleep, for I could not provide personal experiences. One of the criticisms of the intervention materials raised by health visitors and home visitors was that leaflets were too text heavy. This may have been due to me not taking a strong enough editorial role in the group. I did not provide participants with word number specifications, as the group operated on a more informal level, and I was very reluctant to exercise more authority by changing or deleting participants' own words. It is possible that the participants expected me to edit their work, they certainly always included in their accompanying emails a note expressing the hope that their contribution was okay and that I was free to make any changes. I always felt that participants had a sense of pride in seeing their words and photographs in materials, which may have been injured by me making changes, and I also wondered if by making changes I would impact on their personal confidence or commitment to the intervention.

## 8.5 STUDY LIMITATIONS

This study was intended to examine the feasibility and effect of two interventions targeting preschool children's sleep, and there are a number of limitations that affect findings and interpretations. The most notable limitation of this study is the sample size and setting. Intervention groups of only 19 and 31 respondents and a control group of 40 respondents, in a study undertaken in a number of nurseries and children's centres in Stockton-on-Tees reduces the generalisability of the study; it cannot be argued that this study would produce similar results if replicated in another area or on a larger scale. The study was not randomised, which would have helped ensure that any observed changes could be credited to the intervention, therefore validity is weakened (De Vaus, 2004). It was not possible to gather statistical or qualitative data to evaluate the success of the parent intervention. The study does not incorporate a follow-up to examine whether statistically significant changes in the nursery intervention group in children's behaviour and parental knowledge and beliefs were maintained.

The data gathered from parent respondents in both interventions was self reported via questionnaires and interviews; respondents have to be taken at their word when describing changes in their children and their own behaviour as this cannot be validated via objective means. Further research is now required using objective sleep measures to support the subjective measures used in this study.

The two styles of administering questionnaires may have impacted upon results. The questionnaire was standardised to increase its reliability and generalisability (Boynton & Greenhalgh, 2004). When questionnaires were administered by an interviewer, respondents were asked identical questions in the same order and format, and response options were recorded in a consistent manner. However, when respondents self completed, standardised conditions could not be guaranteed as respondents may have completed questions in any order while subject to other interruptions. The self completion of questionnaires by respondents at home meant

that responses provided may not be the sole opinion of the respondent but might have been influenced by others present during completion. Participants included three people from ethnic minority groups where English was not the first language. These participants received help translating questions from family members, which 'may have altered meaning through an attempt to clarify questions' (Boynton, et al., 2004:1434).

Pre-intervention questionnaires distributed to parents through nurseries were gathered together by nursery staff. Respondents may have been deterred from returning questionnaires containing sensitive personal information to staff at their child's nursery, for fear of lack of privacy or judgments being made. In retrospect I consider that it would have been better to provide respondents with the opportunity to return the questionnaire directly to myself, or to have provided envelopes to enclose questionnaires when these were returned to nursery, which may also have increased the response rate.

The face-to-face, interviewer administered pre-intervention questionnaires and the post intervention, telephone administered post intervention questionnaires gleaned a more detailed level of response than the self completed questionnaires. Where I posed questions to respondents as an interviewer the data collection became a social interaction (Boynton, et al., 2004). Respondents were far more likely to want to explain their choice of answers and provide additional comments or enter into a discussion. This proved problematic in some situations where it was difficult to keep respondents focused and data collection took much longer than the allotted fifteen minutes. A number of interviewer administered questionnaires and semi-structured interviews felt rushed if parents had other commitments following the interview, which reduced the amount of time available to focus on necessary issues (Patton, 1990).

The responses gathered via open ended questions on interventions through postal post intervention questionnaires were not as detailed as I had expected. Some

responses were simply 'no' to every question. I felt that respondents provided more considered responses on interventions during interviews than via the open ended questionnaire. This may have been because writing responses to open ended question takes more time and effort. It is also possible that some respondents may have had literacy difficulties when expressing themselves.

It is possible that my role as interviewer indirectly influenced responses, as parent respondents may have associated myself and the study with the other participating organisations such as Sure Start and the nurseries (Boynton, et al., 2004). One inhibitor for an interview is 'ego threat' (Gorden, 1969:72), which relates to when a respondent withholds information that might threaten their self esteem. It is possible that when data was gathered from parents via interview administered questionnaires or semi structured interviews, parents were not completely open about their child's bedtime practices if they felt that they might be judged unfavourably on the basis of the information they supplied.

I did not introduce myself to post nursery intervention respondents during telephone interviews as the researcher who had worked with respondents' children, unless I was asked directly. I hoped that this would allow parents to view me with neutrality and would not influence their responses by providing me with something they thought I wished to hear. I might have also impacted upon Sure Start staff interviews and focus groups as the project had received funding from their organisation and respondents may therefore have felt more obliged to support it. Following interviews with parents I was concerned that two questions intended to ascertain parental knowledge of children's sleep were not reliable. These relate to noise in the bedroom, which was perceived to be a disturbing bedtime practice, and having a dark bedroom, which was considered a recommended bedtime practice. Discussion with parents showed that these issues are not always as straightforward. For example, parents referred to white noise in the bedroom to aid their child's sleep and night lights for children who were afraid of the dark.

The data generated by staff interviews and focus groups cannot be generalised as the number of respondents was small and respondents were not randomly sampled. All staff interviews and focus groups were conducted in respondents' work places. This allowed respondents to be at ease in a familiar environment and it was possible to talk undisturbed (Byrne, 2004). However, it could also be argued that respondents might have had two opinions; one arising from their professional capacity and another from their personal perspective, and due to interviews and focus groups taking place during paid hours in the work place setting, staff were more likely to provide a professional opinion than a personal opinions.

The relationships between participants in a focus group 'as well as the larger social structures within which the discussion takes place – affect the data that are generated...' (Hollander, 2004:604). Focus group responses are not independent and staff views may have been biased by more dominant group members or hierarchy; the presence of team leaders (Betts, 1996; Kitzinger, 1995). As confidentiality cannot be guaranteed following a focus group this may also have impacted upon participants' responses amongst colleagues.

As described in section 8.4.1 above, the nursery intervention would have benefited from having evaluated the intervention with the children themselves, instead of relying only on the opinions of adults. It is also the case that whilst there were many advantages to using a participatory research approach in the parent intervention, this might have led to an intervention that did not address the aim of this study: to provide an intervention for all parents of preschool aged children, as effectively as possible.

## **8.6 CONCLUSION**

The nursery intervention offers potential as a sleep intervention for 'normal' preschool aged children. The intervention group was small, and therefore results should be treated with caution, but statistical analyses found that the intervention

appeared to significantly impact upon children's morning waking behaviour, parental beliefs about their children's sleep and bedtime practices, and parental knowledge of sleep promoting behaviours. Possible mechanisms to explain these changes include greater awareness around the topic of sleep and bedtime practices (both parent and child), prompts to stimulate discussion between parent and child and 'pester power.' I worked with one of the participating nurseries, Redhill nursery, to produce an article published in a popular childcare practitioner magazine that focused on the nursery's experience of participating in this study (Roberts, 2010).

It was not possible to evaluate the parent intervention as a sleep intervention for 'normal' preschool aged children. However, the study was found to have been favourably received by parents from the feedback pegged to intervention boards and the parent interviews undertaken by the participatory research group. The intervention utilised observational learning to provide knowledge about sleep and demonstrate examples of sleep promoting practices and methods for tackling sleep issues. It also aimed to increase parents' self efficacy around a number of aspects of parenting. The participatory research group benefited from involvement in the study, both by personal empowerment and wider political learning; the group even authored a journal article that provided advice for practitioners wishing to establish their own participatory research group (Newark et al, 2011).

Both interventions experienced difficulties during their development, a number related to collaborative working with other agencies and individuals and associated power imbalances. Incorporating social marketing into the design of interventions proved challenging when involving other parties who were not as interested or informed about social marketing. I am committed to the concept of participatory research but found that it was necessary to provide a stronger leadership role than I had foreseen when developing the parent intervention, as this was a PhD study with a timeframe to satisfy. I have debated whether the personal circumstances of the participatory research group impacted upon the focus of this study and I believe that

this problem could only have been resolved by involving the participatory research group more substantially in the PhD study and not trying to compartmentalise the group into the design of one intervention. I have also discussed and concluded that the nursery intervention would have benefited from incorporating an evaluation of the intervention activities with participating children, which is a recommendation for any future study in this field.

In conclusion, as an anthropologist having undertaken interventions addressing ‘normal’ sleep with both parents and children, I would advise clinicians undertaking similar research that sleep interventions should be family focused. There appears to be a degree of complacency amongst clinicians and a reliance on ‘tried and tested’ methods to address sleep problems, as discussed in the systematic review in Chapter 3. Interventions should go beyond the customising of researcher or clinician designed sleep interventions by involving parents and children in the design, delivery and evaluation of interventions. The involvement of families could be extended into featuring peers and their experiences and practical suggestions in intervention materials, as sleep is an area where parents are more likely to seek guidance from someone they know than a medical professional (Adhair and Bauchner, 1993). Such an intervention would highlight parenting strengths and differences, and provide examples on the range of ‘normal’ children’s sleep habits. Children are not passive in determining their sleep (Williams et al, 2007) and should be participants in sleep interventions, rather than merely being the subject of such interventions. Parents and children can both benefit from giving wider thought to the topic of sleep and collaboratively determining children’s sleep and sleep practices. The study showed that anthropology and social marketing can be effectively combined to produce a successful approach to targeting children’s sleep and the sleep practices parents determine for their children and points to the possibility of further research that draws on the strengths of both fields.

**This questionnaire involves monitoring changes in children's sleep; it is part of a project being conducted by Sure Start Children's Centres, Stockton Borough Council and Durham University.**

We would be very grateful if you will take the time to complete the following questions on your child's sleep practices. Think about the past week in your child's life when answering the questions. If last week was unusual for a specific reason (such as your child having a cold and not sleeping well), choose the most recent typical week. The information you provide is completely confidential and data will be anonymised. The data being collected will only be used for the purpose of investigating preschool children's sleep practices.

1. Your child's age: 3 years  4 years  2. Your child's gender: Male  Female

3. Does your child have a usual weekday bedtime? Yes  No  If yes, what time: \_\_\_\_\_

4. Does your child have a usual weekend bedtime? Yes  No  If yes, what time: \_\_\_\_\_

5. Does your child have a usual tea time? Yes  No  If yes, what time: \_\_\_\_\_

6. Where does your child sleep? In their own room alone  In a room shared with brother/sister   
In parents' room, in parents' bed  In parents' room, not in parents' bed  Other (please state) \_\_\_\_\_

7. On an evening after tea time and leading up to bedtime, please tick if you or another carer for your child does any of the following:

	<b>Always</b> (6-7 days of wk)	<b>Often</b> (3-4 days of wk)	<b>Occasionally</b> (1-2 days of wk)	<b>Never</b>
Bath or wash child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take child to the toilet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Read to/with child or make up a story	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cuddle with child (rub back, rock etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lie in/on bed with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Play a game with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child watches television/DVD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child plays computer games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Talk with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Give child a drink or snack	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sing or hum a song for child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brush child's teeth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Say prayers with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Thinking of the last week, on an evening after tea time and leading up to bedtime, please tick whether the following happens:

	<b>Always</b> (6-7 days)	<b>Often</b> (3-4 days)	<b>Occasionally</b> (1-2 days)	<b>Never</b>
Do you or another carer tell your child it's time for bed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your child tell you when they want to go to bed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your child go willingly to bed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your child ask to stay up later or tries to stall bedtime?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Do you or another carer stay with your child after putting them to bed until they have fallen asleep?  
Yes  No

10. How long does it take your child to fall asleep on an evening?  
10-14 minutes  15-19 minutes  More than 20 minutes  Less than 5 minutes  5-9 mins

11. After going to sleep, does your child...	<b>Always</b> (6-7 days)	<b>Often</b> (3-4 days)	<b>Occasionally</b> (1-2 days)	<b>Never</b>	<b>N/A</b>
Wake up during the night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Get out of bed during the night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Get into parent's bed during the night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Get into brother/sister's bed during the night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. Does your child have a usual weekday waking time? Yes  No  If yes, what time: \_\_\_\_\_

13. Does your child have a usual weekend waking time? Yes  No  If yes, what time: \_\_\_\_\_

14. On a morning, does your child...	<b>Always</b> (6-7 days)	<b>Often</b> (3-4 days)	<b>Occasionally</b> (1-2 days)	<b>Never</b>
Wake up too early	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Need to be woken up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Want to stay in bed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Does your child nap during the day?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Does your child have a television in their bedroom? Yes  No

17. Does your child have a computer in their bedroom? (eg. PC, Playstation/PSP, Gameboy, X Box) Yes  No

18. To what extent do you agree with the following statements about your child's sleep:

	<b>Strongly</b> <b>Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly</b> <b>Disagree</b>
My child gets enough sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like my child to sleep for longer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like my child to go to bed earlier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My child has a bedtime routine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like to establish a better bedtime routine for my child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My child complains about being tired during the day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My child struggles to concentrate during the day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. To what extent do you agree with the following statements about children's sleep, don't worry about being right or wrong, it's your opinion that counts.

	<b>Strongly</b> <b>Agree</b>	<b>Agree</b>	<b>Unsure</b>	<b>Strongly</b> <b>Disagree</b>	<b>Disagree</b>
Exercise during the day helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playing energetic games in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Caffeinated products (coke etc.) do not affect children's sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A big meal in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calming activities in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Watching television in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playing computer games in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedrooms should be dark to help children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise in the bedroom can help children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The temperature of the bedroom can affect children's sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A set bedtime helps children to sleep

It is important to expose children to daylight soon after waking

20. Have you ever sought medical advice for any sleep problem your child has experienced? Yes  No

21. Have you ever felt that your own health has suffered as a result of any sleep problem your child has experienced? Yes  No

### About you

Personal information is needed about you and your family, including your age, marital status, education, occupation and ethnicity. This information will be used for statistical purposes only; it allows the researcher to describe the group of people who completed the questionnaire. It also allows the results to be broken down into different groupings to describe preschool children's sleep in a wider context. This information will be anonymised and treated as strictly confidential. Personal information will not be shared with any other parties.

22. Relationship to child: \_\_\_\_\_

23. Is this your first child? Yes  No

If you have other children please state their ages here \_\_\_\_\_

24. What is your age: Under 20  20-24  25-30  31-34  35 and over

25. Marital status: Married/living with partner  With partner, living apart  Single  Widowed

26. Education completed: School  16-18  Vocational training  University   
(eg. sixth form)

27. Current occupation: \_\_\_\_\_

28. Other than child benefit are you getting any other benefits from the government?  
(eg. Working tax credits, job seekers allowance, income support) Yes  No

29. Ethnicity:

White  Asian or Asian British  Black or Black British   
(British, Irish, Other) (Indian, Pakistani, Bangladeshi, other Asian) (Black Caribbean, Black African, Black other)

Mixed  Chinese  Other (please state) \_\_\_\_\_

### Contact Details for entry into free prize draw for Boots vouchers for participating in the questionnaire:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Postcode: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

**Thank you very much for taking the time to complete this questionnaire**

**APPENDIX B1**

**Preschool Children's Sleep Practices Post-Intervention Questionnaire: Parent Intervention**

The following questions are about your child's sleep practices. Think about the past week in your child's life when answering the questions. If last week was unusual for a specific reason (such as your child having a cold and not sleeping well), choose the most recent typical week. The information you provide is completely confidential and data will be anonymised. The data being collected will only be used to investigate preschool children's sleep practices.

1. Your child's age:    3 years     4 years     5 years
2. Does your child have a usual weekday bedtime? Yes     No     If yes, what time: \_\_\_\_\_
3. Does your child have a usual weekend bedtime? Yes     No     If yes, what time: \_\_\_\_\_
4. Does your child have a usual tea time?    Yes     No     If yes, what time: \_\_\_\_\_
5. Where does your child sleep? In their own room alone     In a room shared with brother/sister   
 In parents' room, in parents' bed     In parents' room, not in parents' bed     Other (please state) \_\_\_\_\_

6. On an evening after tea time and leading up to bedtime, please tick if you or another carer for your child does any of the following:

	<b>Always</b> (6-7 days of wk)	<b>Often</b> (3-5 days of wk)	<b>Occasionally</b> (1-2 days of wk)	<b>Never</b>
Bath or wash child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take child to the toilet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Read to/with child or make up a story	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cuddle with child (rub back, rock etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lie in/on bed with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Play a game with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child watches television/DVD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child plays computer games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Talk with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Give child a drink or snack	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sing or hum a song for child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brush child's teeth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Say prayers with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Thinking of the last week, on an evening after tea time and leading up to bedtime, please tick whether the following happens:

	<b>Always</b> (6-7 days)	<b>Often</b> (3-5 days)	<b>Occasionally</b> (1-2 days)	<b>Never</b>
Do you or another carer tell your child it's time for bed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your child tell you when they want to go to bed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your child go willingly to bed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your child ask to stay up later or tries to stall bedtime?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Do you or another carer stay with your child after putting them to bed until they have fallen asleep?    Yes     No

9. How long does it take your child to fall asleep on an evening?    Less than 5 minutes     5-9 mins   
 10-14 minutes     15-19 minutes     More than 20 minutes

	<b>Always</b> (6-7 days)	<b>Often</b> (3-5 days)	<b>Occasionally</b> (1-2 days)	<b>Never</b>	<b>N/A</b>
10. After going to sleep, does your child...					
Wake up during the night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Get out of bed during the night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	

Get into parent's bed during the night

Get into brother/sister's bed during the night

11. Does your child have a usual weekday waking time? Yes  No  If yes, what time: \_\_\_\_\_

12. Does your child have a usual weekend waking time? Yes  No  If yes, what time: \_\_\_\_\_

13. On a morning, does your child...

	<b>Always</b> (6-7 days)	<b>Often</b> (3-5 days)	<b>Occasionally</b> (1-2 days)	<b>Never</b>
Wake up too early	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Need to be woken up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Want to stay in bed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Does your child nap during the day?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Does your child have a television in their bedroom? Yes  No

16. Does your child have a computer in their bedroom? (eg. PC, Playstation/PSP, Gameboy, X Box) Yes  No

17. To what extent do you agree with the following statements about your child's sleep:

	<b>Strongly</b> <b>Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly</b> <b>Disagree</b>
My child gets enough sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like my child to sleep for longer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like my child to go to bed earlier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My child has a bedtime routine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like to establish a better bedtime routine for my child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My child complains about being tired during the day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My child struggles to concentrate during the day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. To what extent do you agree with the following statements about children's sleep, don't worry about being right or wrong, it's your opinion that counts.

	<b>Strongly</b> <b>Agree</b>	<b>Agree</b>	<b>Unsure</b>	<b>Disagree</b>	<b>Strongly</b> <b>Disagree</b>
Exercise during the day helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playing energetic games in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Caffeinated products (coke etc.) do not affect children's sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A big meal in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calming activities in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Watching television in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playing computer games in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedrooms should be dark to help children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise in the bedroom can help children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The temperature of the bedroom can affect children's sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A set bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is important to expose children to daylight soon after waking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. Have you sought medical advice for any sleep problem your child has experienced? Yes  No

20. Have you felt that your own health has suffered as a result of any sleep problem your child has experienced?  
Yes  No

21. Have you seen any of the Sleep Solutionz leaflets? Yes No

22. Have you read any of the Sleep Solutionz leaflets? Yes No

**(If you answer no to both questions 21 & 22 please move forward to question 30)**

23. Were the leaflets of interest to you?

24. Do you feel that the leaflets made you more aware of the issues around children's sleep?

25. Was there anything you read about in the leaflets that you've tried or are thinking about trying?

26. Do you feel that leaflets got anything wrong?

27. Was there anything that the project missed out or you'd have liked us to cover?

28. Have you told anybody about anything about the project? Passed a leaflet on to a friend?

29. If more than one child, has the experience of sleep with your first child made you try anything different with your second child?

Any other comments:

**Thank you very much for taking the time to complete the questionnaire!**

**APPENDIX B2**

**Preschool Children's Sleep Practices Post-Intervention Questionnaire: Nursery Intervention**

The following questions are about your child's sleep practices. Think about the past week in your child's life when answering the questions. If last week was unusual for a specific reason (such as your child having a cold and not sleeping well), choose the most recent typical week. The information you provide is completely confidential and data will be anonymised. The data being collected will only be used to investigate preschool children's sleep practices.

1. Your child's age:    3 years     4 years     5 years
2. Does your child have a usual weekday bedtime? Yes     No     If yes, what time: \_\_\_\_\_
3. Does your child have a usual weekend bedtime? Yes     No     If yes, what time: \_\_\_\_\_
4. Does your child have a usual tea time?    Yes     No     If yes, what time: \_\_\_\_\_
5. Where does your child sleep? In their own room alone     In a room shared with brother/sister   
 In parents' room, in parents' bed     In parents' room, not in parents' bed     Other (please state) \_\_\_\_\_

6. On an evening after tea time and leading up to bedtime, please tick if you or another carer for your child does any of the following:

	<b>Always</b> (6-7 days of wk)	<b>Often</b> (3-5 days of wk)	<b>Occasionally</b> (1-2 days of wk)	<b>Never</b>
Bath or wash child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take child to the toilet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Read to/with child or make up a story	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cuddle with child (rub back, rock etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lie in/on bed with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Play a game with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child watches television/DVD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child plays computer games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Talk with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Give child a drink or snack	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sing or hum a song for child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brush child's teeth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Say prayers with child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Thinking of the last week, on an evening after tea time and leading up to bedtime, please tick whether the following happens:

	<b>Always</b> (6-7 days)	<b>Often</b> (3-5 days)	<b>Occasionally</b> (1-2 days)	<b>Never</b>
Do you or another carer tell your child it's time for bed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your child tell you when they want to go to bed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your child go willingly to bed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your child ask to stay up later or tries to stall bedtime?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Do you or another carer stay with your child after putting them to bed until they have fallen asleep?    Yes     No

9. How long does it take your child to fall asleep on an evening?    Less than 5 minutes     5-9 mins   
 10-14 minutes     15-19 minutes     More than 20 minutes

	<b>Always</b> (6-7 days)	<b>Often</b> (3-5 days)	<b>Occasionally</b> (1-2 days)	<b>Never</b>	<b>N/A</b>
10. After going to sleep, does your child...					
Wake up during the night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Get out of bed during the night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Get into parent's bed during the night

Get into brother/sister's bed during the night

11. Does your child have a usual weekday waking time? Yes  No  If yes, what time: \_\_\_\_\_

12. Does your child have a usual weekend waking time? Yes  No  If yes, what time: \_\_\_\_\_

13. On a morning, does your child...

	<b>Always</b> (6-7 days)	<b>Often</b> (3-5 days)	<b>Occasionally</b> (1-2 days)	<b>Never</b>
Wake up too early	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Need to be woken up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Want to stay in bed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Does your child nap during the day?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Does your child have a television in their bedroom? Yes  No

16. Does your child have a computer in their bedroom? (eg. PC, Playstation/PSP, Gameboy, X Box) Yes  No

17. To what extent do you agree with the following statements about your child's sleep:

	<b>Strongly</b> <b>Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly</b> <b>Disagree</b>
My child gets enough sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like my child to sleep for longer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like my child to go to bed earlier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My child has a bedtime routine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like to establish a better bedtime routine for my child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My child complains about being tired during the day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My child struggles to concentrate during the day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. To what extent do you agree with the following statements about children's sleep, don't worry about being right or wrong, it's your opinion that counts.

	<b>Strongly</b> <b>Agree</b>	<b>Agree</b>	<b>Unsure</b>	<b>Disagree</b>	<b>Strongly</b> <b>Disagree</b>
Exercise during the day helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playing energetic games in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Caffeinated products (coke etc.) do not affect children's sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A big meal in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calming activities in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Watching television in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playing computer games in the hour before bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedrooms should be dark to help children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise in the bedroom can help children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The temperature of the bedroom can affect children's sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A set bedtime helps children to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is important to expose children to daylight soon after waking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. Have you sought medical advice for any sleep problem your child has experienced? Yes  No

20. Have you felt that your own health has suffered as a result of any sleep problem your child has experienced?  
Yes  No

21. Were you aware of the young children's sleep project taking place in the nursery? Yes No

22. Has your child talked about the project at home? Yes No

**If no to either of the above...**

23. Any reason for not knowing? eg. Having moved nurseries

**If yes to either of the above...**

24. Which activities can you remember your child talking about?

25. Did you receive the summary booklet that was sent home with children showing photos of the project's activities, was it useful/interesting?

26. Do you feel that your child is more aware of sleep as a result of the project? (eg. Why we sleep, how we get ready for bed)

27. Have you thought more about your child's sleep as a result of them taking part in the project?

28. Is there anything that you've thought about trying or tried as a result of thinking more about your child's sleep?

29. Has your child behaved differently at bedtime or changed their sleeping patterns in any way?

30. Is there anything that you think the project missed out or you would have liked us to cover?

31. Have you told anybody about the project or showed them the booklet?

32. If more than one child, has the experience of sleep with your first child made you try anything different with your second child?

Any other comments:

**Thank you very much for taking the time to complete the questionnaire!**

**APPENDIX C: SAMPLE LETTER FOR POST INTERVENTION  
QUESTIONNAIRE**

Address

Date

Dear

Some time ago you were kind enough to complete a questionnaire for the Young Children's Sleep Project through the Family Centre. The project concerns children's sleep patterns and bedtime practices and is funded by Stockton Borough Council, Durham University and the Economic Social Research Council (ESRC).

You indicated that you would be happy to participate in the project further by completing a second questionnaire, the first half of which is similar to the previous one you completed. The two questionnaires will be compared to see what changes have taken place over the six month period. The second half of the questionnaire concerns the Sleep Solutionz Project which is taking place in Sure Start Children's Centres. The questions are open-ended, we are very grateful if you could take a moment to jot down your answers in as much detail as possible. The data you provide is completely confidential and anonymised.

I would really appreciate it if you could complete the enclosed questionnaire and return it in the pre-paid enclosed envelope. Without your support this study would not be possible.

If you have any questions about the project or require any further details please do not hesitate to contact me using the details below.

Kind regards

Meg Newark

Lead Researcher on the Young Children's Sleep Project

[m.e.newark@durham.ac.uk](mailto:m.e.newark@durham.ac.uk)

0191 334 0797

## **APPENDIX D: INTERVIEW GUIDE FOR STAFF**

### **PARENT INTERVENTION**

- Awareness of Sleep Solutionz notice boards & materials – own impressions & those relating to parents
- Opinion on materials
  1. Topics covered
  2. Information provided
  3. Layout
- Any reflections on participatory research group?
- Length of intervention
- Did staff use any of the information/point parents in direction of materials?
- Book borrowing scheme
- Could we have done anything differently?

### **NURSERY INTERVENTION**

- Opinion on activities – own impressions & those relating to parents & children
- Length of intervention – number & duration of activities
- Could we have done anything differently?
- Feasibility of project being extended to other nurseries?



## **APPENDIX E1: INFORMATION SHEET FOR PARENT INTERVENTION STUDY**

### **What is this project about?**

This project aims to understand more about sleep in preschool children and the sleep practices parents choose for their children, such as bedtimes and where children sleep. It also aims to gather parent's opinions of a sleep campaign within the Sure Start Children's Centres and school nurseries about children's sleep.

### **How will the information be gathered?**

Information will be gathered via questionnaires and short telephone interviews with parents involved with one of the Sure Start Children's Centres or school nurseries in Stockton.

### **What will be involved?**

If you are happy to take part, you will complete a questionnaire now, and be contacted to take part in an interview during May 2010. Interviews should last around half an hour. This may be face-to-face or over the telephone. It will take place at a time convenient to you and the researcher. You will be asked to provide your view on topics such as activities before bedtime, night waking and how well you think your child sleeps, as well as being asked for your opinion of the sleep campaign.

### **Is involvement in this project voluntary?**

Involvement is entirely voluntary. No payment will be possible for involvement. Participants should not feel under pressure to participate and are free to withdraw from the study at any time and request that any data are destroyed.

### **Will information be confidential?**

Yes, all information will be treated as confidential and no individual's or personal data will be passed on to any other parties. The information will be used by the researcher for the purpose of understanding preschool children's sleep. Conversations will be digitally recorded only if the participant gives written consent. Any recording will be used to help recall the accuracy of information given and used only by the researcher for the research goals.

### **What will the results of the research be used for?**

The research will be used in a PhD study in association with Stockton Sure Start and Stockton Borough Council, which may go on to form a bigger project. The study is concerned with the design, implementation and evaluation of two health promotion campaigns targeting three and four year old preschool children's sleep practices.

### **Contact details:**

**Researcher:** Meg Newark, Department of Anthropology, Durham University

**Address:** Parent-Infant Sleep Lab, Queen's Campus, University Boulevard, Thornaby, STOCKTON-ON-TEES, TS17 6BH

**Email:** [m.e.newark@durham.ac.uk](mailto:m.e.newark@durham.ac.uk)

**Telephone :** 0191 3340797/ 07846098943

**Approved by Durham University's Ethics Advisory Committee**



## **APPENDIX E2: INFORMATION SHEET FOR YOUNG CHILDREN'S SLEEP STUDY – NURSERY SESSIONS**

### **What is this project about?**

This project aims to understand more about sleep in preschool children and the sleep practices parents choose for their children, such as bedtimes and where children sleep. It also aims to deliver a number of fun educational short nursery sessions over a four month period for children aged three and four years. The sessions will provide children with a better understanding about why we sleep and why sleep is important, and healthy bedtime and sleep practices. This will be evaluated with children at the end of each session and with parents after all of the sessions have been delivered.

### **How will the nursery sessions be designed and delivered?**

A researcher and a group of local parents are designing the content of sessions (stories, role play, activities etc). Each session will last around half an hour. The sessions will be delivered by the researcher with the usual nursery staff present.

### **How will the information be gathered?**

Information will be gathered via questionnaires and short interviews with parents.

### **What will be involved?**

If you are happy for your child to take part, you will complete a questionnaire now, and will be contacted to take part in an interview around May or June 2010, and then again in another six months time, November 2010. This may be face-to-face or over the telephone. Interviews should last around 20 minutes. It will take place at a time convenient to you and the researcher. You will be asked to provide your view on whether the nursery sessions had any impact upon your child's sleep and activities before bedtime, as well as discussing more generally your experience of your child's sleep.

### **Is involvement in this project voluntary?**

Involvement is entirely voluntary. No payment will be possible for involvement. Participants should not feel under pressure for their child to participate and are free to withdraw from the study at any time and request that any data are destroyed.

### **Will information be confidential?**

Yes, all information will be treated as confidential and no individual's or personal data will be passed on to any other parties. The information will be used by the researcher for the purpose of delivering and evaluating the nursery sessions and understanding preschool children's sleep. Children will only be photographed or video recorded with parent's consent. The use of video recording would only be for evaluation of sessions and to provide short clips during academic presentations at conferences when discussing the project. Photographs may be used in displays and a final project booklet that would be given out for all parents of children who participated. Interviews will be audio-taped only if the participant gives written consent. Any audio-tape recording will be used to help recall the accuracy of information given and used only by the researcher for the research goals.

### **What will the results of the research be used for?**

The research will be used in a PhD study in association with Stockton Sure Start Centres, which may go on to form a bigger project. The study is concerned with the design, implementation and evaluation of two health promotion campaigns targeting three and four year old preschool children's sleep practices.

### **Contact details:**

**Researcher:** Meg Newark, Department of Anthropology, Durham University

**Address:** Parent-Infant Sleep Lab, Queen's Campus, University Boulevard, Thornaby, STOCKTON-ON-TEES, TS17 6BH

**Email:** [m.e.newark@durham.ac.uk](mailto:m.e.newark@durham.ac.uk)

**Telephone :** 0191 3340797/ 07846098943

**Approved by Durham University's Ethics Advisory Committee**



## **APPENDIX E3: INFORMATION SHEET FOR YOUNG CHILDREN'S SLEEP STUDY (CONTROL)**

### **What is this project about?**

This project aims to understand more about sleep in preschool children and the sleep practices parents choose for their children. It also aims to gather parent's opinions of a campaign within the Sure Start Children's Centre about preschool children's sleep.

### **How will the information be gathered?**

Information will be gathered via interviews with parents involved with one of the Sure Start Children's Centres in Stockton.

### **What will be involved?**

If you choose to take part, you will be contacted to take part in an interview around May or June 2010. This may be face-to-face or over the telephone. Interviews should last around half an hour to 45 minutes. It will take place at a time convenient to you and the researcher. You will be asked to provide your view on topics such as activities before bedtime, night waking and how well you think your child sleeps.

### **Is involvement in this project voluntary?**

Involvement is entirely voluntary. No payment will be possible for involvement. Participants should not feel under pressure to participate and are free to withdraw from the study at any time and request that any data are destroyed.

### **Will information be confidential?**

Yes, all information will be treated as confidential and no individual's or personal data will be passed on to any other parties. The information will be used by the researcher for the purpose of understanding preschool children's sleep. Conversations will be audio-taped only if the participant gives written consent. Any audio-tape recording will be used to help recall the accuracy of information given and used only by the researcher for the research goals.

### **What will the results of the research be used for?**

The research will be used in a PhD study in association with Sure Start, which may go on to form a bigger project. The study is concerned with the design, implementation and evaluation of two health promotion campaigns targeting four year old preschool children's sleep practices

### **Contact details:**

**Researcher:** Meg Newark, Department of Anthropology, Durham University

**Address:** Parent-Infant Sleep Lab, Queen's Campus, University Boulevard, Thornaby, STOCKTON-ON-TEES, TS17 6BH

**Email:** [m.e.newark@durham.ac.uk](mailto:m.e.newark@durham.ac.uk)

**Telephone :** 0191 3340797/ 07846098943

**Approved by Durham University's Ethics Advisory Committee**

**APPENDIX F1: CONSENT FORM FOR PRESCHOOL CHILDREN'S SLEEP  
PROJECT: PARENT INTERVENTION & CONTROL GROUP**

**To be completed by all respondents**

*Please cross out  
as necessary*

Have you read the Subject Information Sheet? YES / NO

Have you had an opportunity to ask questions and discuss the study? YES / NO

Have you received satisfactory answers to all of your questions? YES / NO

Have you received enough information about the study? YES / NO

Do you provide consent for you and your child to participate in the study? YES / NO

Do you understand how the information you provide will be used in the study? YES / NO

Who have you spoken to? Dr/Mr/Mrs/Ms/Prof. ....

Do you understand that you are free to withdraw from the study:

- \* at any time
- \* without having to give a reason for withdrawing
- \* and without affecting your position in the University? YES / NO

**Signed** ..... **Date** .....

(NAME IN BLOCK LETTERS) .....

**APPENDIX F2: CONSENT FORM FOR YOUNG CHILDREN'S SLEEP STUDY –  
NURSERY INTERVENTION**

**To be completed by all respondents**

*Please cross out  
as necessary*

Have you read the Subject Information Sheet? YES / NO

Have you had an opportunity to ask questions and discuss  
the study? YES / NO

Have you received satisfactory answers to all of your questions? YES / NO

Have you received enough information about the study? YES / NO

Do you provide consent for you and your child to participate in the  
study? YES / NO

Do you understand how the information you provide will be used in  
the study? YES / NO

Are you willing for your child to be video recorded/photographed  
when the nursery sessions are being delivered? YES / NO

Who have you spoken to? .....

Do you understand that you are free to withdraw from the study:

- \* at any time
- \* without having to give a reason for withdrawing
- \* and without affecting your position in the University? YES / NO

**Signed** ..... **Date** .....

(NAME IN BLOCK LETTERS)

.....

Approved by Durham University's Ethics Advisory Committee

**APPENDIX G: POSTER TO RECRUIT PARTICIPATORY RESEARCH GROUP**



## **ARE YOU THE PARENT, GRANDPARENT OR CARER OF A PRESCHOOL AGED CHILD (2-5 YEARS)?**

Would you be willing to support your local community and Sure Start Children's Centres by helping Durham University design a project promoting preschool children's sleep?



Come along to one of the following meetings at High Flyers Children's Centre to find out more about taking part:

Friday 8<sup>th</sup> May 9.30 am - 10.30 am  
Friday 8<sup>th</sup> May 1.15 pm - 2.15 pm  
Monday 11<sup>th</sup> May 4.00 pm - 5.00 pm

Meetings will be informal, refreshments will be on offer and a limited number of crèche places are available. If you are interested in taking part please tell Gemma McKinnell at High Flyers reception or contact reception on 01642 527802. Crèche places must be booked in advance through Gemma.

Unfortunately, it will not be possible for childminders to place children in their care in the crèche.

**By taking part you can help other families provide the best opportunity for their child to get a healthy night's sleep!**



**APPENDIX H: PARTICIPATORY RESEARCH INFORMATION SHEET***What is participatory research?*

Participatory research involves the key people affected by, or concerned with, an issue. In this case it's you; the parents, grandparents and carers of preschool aged children. You're the people dealing with children's sleep on a daily basis; you decide when, where and how your child goes to sleep. You know how much sleep your child needs. As a primary carer for a child you're also aware of the more challenging issues that surround children's sleep, such as bedtime routines, children resisting bedtime and children waking during the night.

*What will the participatory research involve?*

The participatory research will involve attending a regular meeting to design a promotional campaign to publicise the importance of preschool children getting enough sleep and good quality sleep. You will suggest messages and materials for the campaign, designing posters, leaflets, activity sheets, bed time book lists and a whole lot more! You will be supported through every stage of the participatory research by a researcher from Durham University.

*How often will the participatory research group meet?*

The group will meet at least once a month for a year. Meetings will take place here at High Flyers and last for around an hour and a half. Refreshments will be included.

*Would there be any help with childcare?*

Childcare facilities will be available as long as they are pre-booked through Gemma McKinnel at reception or by ringing 01642 527802.

*What will I get out of being involved?*

Participatory research can make a real difference to your local community and other parents, grandparents and carers of children. Your experience of being a primary carer of a preschool child can help create healthy sleep messages that are relevant, accessible and appealing to the local community. You will have the satisfaction and pride of seeing your work displayed and freely available in certain Sure Start Children's Centres. You will also gain valuable experience of teamwork, communication and expressing your creativity! The participatory research will give you an understanding of how research projects evolve from the ideas stage to the implementation and evaluation of a project. Participatory research meetings aim to be fun and informal. Involvement is entirely voluntary and no payment will be possible for participating.

*What will the data, messages and materials produced through participatory research be used for?*

The participatory research will form part of the researcher's PhD study, and may go on to form a bigger project. The study aims to explore whether a healthy sleep campaign for preschool children, designed through participatory research, has an impact on parental knowledge and concern for their child's sleep, and whether these impacts upon the sleep practices parents choose for their child.

*Do I need any special skills to be involved in the participatory research?*

All you need apart from your experience and interest in preschool children's sleep is plenty of enthusiasm!

If you're interested in taking part please contact:

Researcher: Meg Newark, Parent-Infant Sleep Lab, University of Durham

Telephone: 0191 3340797

E-mail: [m.e.newark@durham.ac.uk](mailto:m.e.newark@durham.ac.uk)

## APPENDIX 11

Now for the science!

Why is sleep so important for young children?

Research has shown...

- The growth hormone is released during sleep, which helps regulate children's growth and development
- Sleep restores brain metabolism, which means that it helps our brains to work effectively
- When you're asleep your brain stores information about your experiences during the day, helping you to remember information and learn new skills. This is especially important for children who are experiencing and learning new things every day so have lots of information to store!
- Sleep makes it easier for children to adjust to new experiences, such as entering nursery or progressing to school
- Getting enough sleep reduces the likelihood of behavioural problems occurring
- Not getting enough sleep has been found to be associated with weight gain, and short sleep duration has been found to be a predictor of current and future obesity.

What is Sleep Solutionz?

Sleep Solutionz is a project involving a group of mums from Stockton who meet at High Flyers Sure Start Children's Centre once a month with a researcher from Durham University.

Anne-Marie, mum of Liam I, explains below.



"We discuss our children's sleep, and the different issues that we've got to deal with as they get older and progress to the next stage of development. We offer support for one another and try out different suggestions to deal with any issues we might be having with our children's sleep. We want to get families thinking about their children's sleep because it's so important for a child's development and it can really affect mums and dads too. We'll be producing a number of posters and leaflets over the coming months looking at children's sleep with our own suggestions of how to deal with any issues. This is a project by local parents for local parents and we'd be delighted if you want to get involved. We'd also appreciate your feedback or suggestions."

To find out more, ring 0191 334 0797, or speak to a member of staff at your local Sure Start Children's Centre.



A SureStart Children's Centre



Everything you need to know for a blissful bedtime for you and your child



## The blissful bedtime routine

Starts and finishes at the same time everyday

Calming or 'winding down' activities that can be part of a routine include:



- A bath
- Quiet games

- A bottle, or a milky drink, or a little supper
- Brushing teeth



- A bedtime story
- Singing



- A massage
- A cuddle

Karen, mum of Lucy 8, Adam 6, and Martha 2



"A bedtime routine in our family means that we all know where we are at. **I think children thrive on a routine, they like to know what's coming next, and so do we.** I love spending quality time with my family on an evening and then once the kids are in bed it gives my husband and I a chance to spend some time together alone."

**If your child struggles to settle at night you might try one of these tips:**

- Make sure that your child is comfortable in their bed with anything they might need near by, such as a dummy, teddy bear or security blanket
- You could leave something that smells of you with your child to make them feel secure, such as a top you've been wearing (be very careful not to leave anything that could be a choking or suffocation hazard)
- If you no longer use your baby monitor you could try switching the monitor around so that your child has the receiver and can hear the familiar sounds of you moving around downstairs and won't feel as alone in the bedroom

## What helps children to sleep?

- A dark bedroom
- A temperature that's not too hot or too cold (around 18°C)
- A bedroom that's not too noisy
- Going to bed & getting up at the same time everyday
- Exposure to natural sunlight soon after waking
- Not having electronic equipment in the bedroom
- Not watching television or playing on the computer in the hour before bed
- Not playing exciting games or exercising in the hour before bed
- Not eating a big meal in the hour before bed
- Not having caffeinated drinks in the six hours before bed

## APPENDIX I2

**You are not alone!**

Night waking is something that most families struggle with at one time or another.

It's no reflection on your parenting skills if you can't get something to work that was successful for a friend.

Children vary in their temperament and their sleep need and there is not one solution that fits all.

Try not to let night time become a power struggle. If your child is old enough to understand, explain why they must stay in their bed and go back to sleep. A reward chart might help!

Emma, mum of Daisy 5, and Lola 2, explains below:



"From my experience, night waking is not something that lasts forever, one night after constant night waking Lola slept through and then continued to do so. However, change of routine can disrupt their pattern and you may end up back to square one."

### What factors in night waking?

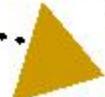
There are a number of factors that affect children's sleep and can increase night waking. These include:

- Illness and teething
- Breast feeding: a breast fed baby is more likely to wake more frequently for feeding and this is completely normal and natural
- Change of routine, such as holidays or starting nursery
- Changing from a cot to a bed
- A new baby in the family (change in attention)

#### What is Sleep Solutionz?

"Sleep Solutionz is a project by local parents for local parents looking at children's sleep. We'd be delighted if you want to get involved and appreciate your feedback or suggestions."

To find out more, ring 0191 334 0797, or speak to a member of staff at your local Sure Start Children's Centre.

 A SureStart Children's Centre

 Durham University

 E.S.F.C  
ECONOMIC & SOCIAL  
RESEARCH  
COUNCIL

 Stockton-on-Tees  
BOROUGH COUNCIL

December  
2009



**Dealing with  
night waking:  
young children &  
babies**



## Dealing with tantrums & crying

- It's difficult to listen to a child crying or shouting but if there is no sign of distress it's worth staying calm and leaving the child a while to see if they will settle on their own
- If you go to your child, don't turn on the light, and try not to make eye contact or conversation, but you could make a soothing noise
- Children get into a pattern of waking and crying, so it is likely that your child will wake again. When this happens wait longer before responding, you could try doubling the length of time after each bout of crying. If your child gets out of bed, keep returning them to their own bed whilst explaining that they must stay there
- It is difficult to maintain this behaviour, and you could get support from a partner or a friend overnight to help you to stick to the plan. If you are finding it too difficult then don't worry, this isn't the technique for you, but there will be another one
- Research has found that controlled crying is not suitable for children under one year of age, as they are not developed enough to understand

Stacey, mum of Ruby, 21 months, describes her families experience below:



"Ruby has never slept the whole way through the night, and is 21 months now! From being a newborn she was a catnapper, with daytime sleeps 20 minutes here and there. Daytime sleep is fine, you can make as much noise as you want and she will sleep through it. Night time is a different story! Going to bed is usually okay, the main problem is between midnight and 4 am when Ruby will wake frequently.

**We have tried many different techniques, all of which have been unsuccessful.** We have tried stay in bed, controlled crying, ignoring, me staying in the room without talking until she went to sleep (and I went to bed at 5 am!), and Dad putting her to bed instead of me.

The reason we decided to allow Ruby into our bed was that her Dad needed to be up early for work, she has an older sister who needs to sleep for school, and I also need some sleep to function the next day, especially if I am going to work.

**At the present time it works fine for us, as we all manage to get some decent sleep!**

I think as long as you and your partner communicate and are on the same wavelength regarding bed-sharing, then it is only a problem for other people."

(Bedsharing is not suitable if you are on any form of medication or have been drinking alcohol or smoke)

## Night waking with twins

Linda, mum of Lilly and Poppy, 2 years, describes her families experience below:



"We decided from the beginning we were not going to separate the girls and they would share a room. Initially they shared a Moses basket and it amazed us they could lay side by side one screaming and the other completely oblivious fast asleep.

They are almost two now and have only recently started to sleep all the way through (both at the same time that is). **Having a bedtime routine is so important.** The girls know after Ceebees bedtime story that we all sing the bedtime song it's time for peeps. **We did use the controlled crying method, which did work, it's not easy but you have to persevere."**

## APPENDIX I3

### Toilet Training



Karen, mum of Lucy 9, Adam 7, and Martha 2

"My experience with potty training my three children has been very different. My eldest Lucy (now 9), was dry at around 18 months and seemed to take it all in her stride, however I did have the benefit of allowing her to run round nappy-free in the garden in the Summer months with the potty always on hand. Adam (now 7), took a little longer and was able to use the potty/toilet at around 2 and a half. I did try and coax him into trying at around age 2, but was unsuccessful. Martha (3 in May) was dry at age 2 and again, I did attempt to try her with the potty at just after 18 months, but was unsuccessful.

My advice to mums is not to stress about the age of the child still wearing nappies, and introduce the potty, concept of wearing "big pants" gradually. Look for signs that they are ready, ie showing an interest in the toilet, staying dry for longer periods, telling you when they are doing a wee wee or poo poo! Take their cue and you will not be rushing your child when they are not ready and stressing yourself out. Lots of praise and promise of stickers, treats for successful trips to the potty is also a good idea. Before you know it you will be waving good-bye to nappies for good."



### What is Sleep Solutionz?

Sleep Solutionz is a project involving a group of mums from Stockton who meet at High Flyers Sure Start Children's Centre once a month with a researcher from Durham University.

Anne-Marie, mum of Liam 1, explains below:



"We discuss our children's sleep, and the different issues that we've got to deal with as they get older and progress to the next stage of development. We offer support for one another and try out different suggestions to deal with any issues we might be having with our children's sleep. We want to get families thinking about their children's sleep because it's so important for a child's development and it can really affect mums and dads too. We'll be producing a number of posters and leaflets over the coming months looking at children's sleep with our own suggestions of how to deal with any issues. This is a project by local parents for local parents and we'd be delighted if you want to get involved. We'd also appreciate your feedback or suggestions."

To find out more, ring 0191 334 0797, or speak to a member of staff at your local Sure Start Children's Centre.



### Handy hints for your child's development

Progressing from a cot to a bed, toilet training, phasing out the evening bottle and dummies



## Is it time to move from a cot to a bed?

Sarah and Damian, mum and dad to Caitlin, 23 months old



"Caitlin has been in a cot bed now since she was 13 months old (last month moved into a single bed). She has always been determined and started walking at 10 months never liking to be strapped into anything chair/pram etc. I had put Caitlin in her cot one night and walked out to get something, she was screaming to get out and I watched her manage to get her foot right over the top of the bar. I told my husband that as soon as she gets her ankle over she will be out and sure enough the next night I was walking back into her room when she hurled herself over the cot. I screamed and ran to her but luckily she landed on her feet, bounced and grabbed for the sides of the cot, needless to say the bars came off that night. She took to the bed fine, just hated the door being shut which was the next obstacle!!

She has always gone to bed no problem but when I started leaving her she would keep coming out of her room. We tried the controlled method and held the door shut, she would be screaming and trying the door handle so we had to keep putting her back (this would go on for about 3 hrs). On the third night I walked out, shut the door and held it. I heard her get up, try the door handle then sigh and go back to bed. She is generally good on the whole now but does get up in the middle of the night on occasion and come into our bed."



"We also had to take the stairgate off at the top of the stairs 2 months ago as she nearly did the same thing as with the cot sides. She is now content coming and going as she pleases, she goes to her room, gets a book she wants and comes back down."

## How to phase out the evening bottle?



Stacey and John, mum and dad to Ruby, 23 months old

"I replaced all of Ruby's bottles except the evening one by her first birthday. I was quite happy for her to have her milk in a bottle on a night for longer, as it settled her down for the night, and it was Ruby's cue for bedtime. The more months that went by the more I thought she was reliant on it, and I don't mind admitting that I was very nervous about getting rid of it. I imagined it to be a very big deal for her. When Ruby was 22 months old I decided to replace the evening bottle. We went to the shops together to buy a 'special' big girls cup, (pink with butterflies, her favourite), and she understood when I explained simply to her, that this was her cup for milk for bedtime. I also bought two cups in case one was lost/broken etc. We went home and Ruby helped me to put all of her bottles into the bin, which she didn't cry at.

Night time came and she helped to pour milk into her big girl cup, then had the same routine as every night before. She laid down and refused to drink from the cup! She asked for her bottle, and I reminded her that we had put them in the bin. She rolled over and went to sleep without drinking her milk.

The next night I gave her her new cup again, and again she refused to drink from it. So every night after that I made her some supper instead, so she now has cereal about half past six instead. And she still has never drank from her new cups! Overall I think that taking that last bottle of her was a much bigger deal for me than it was for Ruby."



## Giving up dummies!

If you think it's time for your child to give up dummies then you could try and reduce the amount of time your child has a dummy. For example, taking the dummy away during periods of the day when your child is busy and distracted by other things. A good way to get rid of the dummy altogether, which has been tried and tested by us, is to give all your child's dummies to someone important. For example, you and your child could leave the dummies out with a glass of milk and a mince pie for Santa. Or you could try hanging them on the door handle for the Easter bunny. This also allows your child to be involved in the process of moving on from dummies. The advantage of doing it on a 'big' day is that children are already distracted by everything else going on!

"We think it's important to bin all of the dummies so you're not tempted to let your resolve break if you do have a disturbed night or two. Good luck!

## APPENDIX 14

### Sleep & Obesity

Did you know that research has found that not enough sleep can increase a child's risk of becoming overweight or obese in the future?

This is because the appetite hormones ghrelin and leptin are affected by lack of sleep. Ghrelin is increased, which stimulates appetite and increases food intake, whilst leptin is reduced, which prevents the body from feeling full (this is true for adults too!) The end result is that children may be hungrier, especially for carbohydrate rich foods.

Research has also found that it's important to get up and about as children need plenty of natural daylight and fresh air to help them to get a good night's sleep.

### Getting Active!



Here are a few ways of getting active, whatever the weather! Dance to the radio, balloon/ball keepy uppy and catch, hula hooping, playing games like musical statues,

hide and seek or Simon Says, visiting the park, or going to Stay and Play or soft play.



### What is Sleep Solutionz?

Sleep Solutionz is a project involving a group of mums from Stockton who meet at High Flyers Sure Start Children's Centre once a month with a researcher from Durham University.

Anne-Marie, mum of Liam I, explains below:



"We discuss our children's sleep, and the different issues that we've got to deal with as they get older and progress to the next stage of development. We offer support for one another and try out different suggestions to deal with any issues we might be having with our children's sleep. We want to get families thinking about their children's sleep because it's so important for a child's development and it can really affect mums and dads too. We'll be producing a number of posters and leaflets over the coming months looking at children's sleep with our own suggestions of how to deal with any issues. This is a project by local parents for local parents and we'd be delighted if you want to get involved. We'd also appreciate your feedback or suggestions."

To find out more, ring 0191 334 0797, or speak to a member of staff at your local Sure Start Children's Centre.



March 2010



Sleep



Eat



Exercise

## Healthy Lifestyles

Mum, Sarah, talks about her experience with daughter, Caitlin, 2 years old.

"Here's Caitlin helping in the garden - always one to get stuck in where anything physical is involved. It was her birthday last week and we bought her a tool belt as she is always helping dad - not the typical quiet little girl!!"



Caitlin has always been quite active so I don't mind giving the odd treat every now and again although I tend to leave choc treats to a minimum as I know when she goes to see her grandparents she will get these (I thought I would leave this as her treats). She eats quite healthy really and loves yoghurts and fruit but I think my downfall is me not varying her diet much. I tend to get stuck in the trap of giving the same things so meal times are probably getting quite boring for her (and us). I find it helpful talking to other mums as they give you ideas of what else to try. I have also found it helpful when going to playgroups with some of the other mums and having lunch together afterwards. The children are always pinching each others food so they get to try different things as well and try things they don't always get at home.



To get her veggies into her I often make an omelette and disguise broccoli and green beans in it, also grating in some cheese and ham. She tends not to notice as much as she would if it was just put on her plate."

Mum, Linda, explains how her and husband, Kevin have approached food and activity with twins, Poppy and Lilly, 2 years old.

"We have always tried to encourage the girls to eat healthy and they have been introduced to most types of fruit & vegetables. They didn't always like them first time round but we never gave up and kept trying different combinations they like most things except sprouts!

We have treats as well, every weekend we have bacon/sausage sandwiches for breakfast with the obligatory tomato ketchup. We always eat breakfast as a family I think if they see you eating it encourages them to eat the same things.



The girls are naturally very active & are always dancing. Santa brought them musical instruments for Christmas and they love to dance round the room to the music banging the drum & shaking the tambourine its tiring just watching never mind the noise levels.



They loved the recent snow and spent hours outside building "Snow people" it great to see them enjoying themselves and its better for them than being cooped up inside."



## Surprising Snacks

- Frozen bananas! Just pop one in the freezer in it's skin, peel and eat like an ice lolly!
- Fruit kebabs, use any combination, such as melon, pineapple, mango, grapes and kiwi fruit
- Veg sticks, carrots, celery, peppers, radishes and sweetcorn are all delicious
- Cherry tomatoes, watch out though as they can be a bit messy!
- Mashed banana on fingers of bread
- Cooked cauliflower or broccoli spears
- A handful of frozen peas
- Pumpkin and sunflower seeds
- Home made popcorn, the microwave bags are fast and easy, and tasty without adding salt or sugar
- Look out in your local Sure Start for the Terrific Treats for Tiny Teeth leaflets with easy recipes for simple snacks and light meals

Anne-Marie, mum of Liam, 19 months, suggests having a teddy bear's picnic with lots of small dishes, which Liam enjoys and it encourages him to try new things. You could also try blending vegetables into a tomato sauce when making pasta as a way to get more vegetables into little ones.



## APPENDIX 15



Stacey and John, with daughter Ruby, 2.

"The difference in our household at bedtime from when I came to the first meeting last June, to now, is immense. Ruby has

always been a light and poor sleeper, and as I have previously said we found we were all much happier when bedsharing, as it generally meant more sleep for everyone. When Ruby was 22 months old we decided to be very firm and stick to putting her in her own bed every night for the whole night, and we knew if we relented in the middle of the night then all our efforts would have been pointless. It was very hard and stressful at the beginning, but talking about it and being supportive to each other helped a lot.

Ruby still wakes through the night, but generally goes back off to sleep fairly quickly, and the amount of times we are getting up through the night is gradually reducing. The girls in the group have offered invaluable support, and it is nice to openly discuss what is sometimes seen as the taboo subject of bedsharing, it appears that a lot of people do it, but not a lot like to admit to it. We have shared great tips and suggestions with each other, a lot of which you can find in previous leaflets."

### In Memory of Sarah Jane Roberts



Sarah made a very valuable contribution to the project and is sadly missed by us all.



Meg Newark, Lead Researcher on the Young Children's Sleep Study. "I want to take the opportunity to thank everyone who has contributed to Sleep Solutionz and especially the families that have been

involved in producing the leaflets. I have loved working with the mums in the group; it's been fun, interesting and very enlightening! It's provided me with a wealth of information on the issues parents face regarding their children's sleep, and practical solutions to try, many of which would not have come to light if this project hadn't been parent led. This is the last leaflet we will be producing but we will be feeding back on the impact that the project has had using our notice boards in Sure Start Children's Centres and local nurseries. Please do get in touch using the number below if you'd like to find out more."

### What is Sleep Solutionz?

Sleep Solutionz is a project involving a group of mums from Stockton who meet at High Flyers Sure Start Children's Centre once a month with a researcher from Durham University.

Anne-Marie explains: "We discuss our children's sleep, and the different issues that we've got to deal with as they get older and progress to the next stage of development. We offer support for one another and try out different suggestions to deal with any issues we might be having with our children's sleep. We want to get families thinking about their children's sleep because it's so important for a child's development and it can really affect mums and dads too. We've produced a number of posters and leaflets over the last six months looking at children's sleep with our own suggestions of how to deal with any issues. This is a project by local parents for local parents and we'd be delighted if you want to get involved. We'd also appreciate your feedback or suggestions." To find out more, ring 0191 334 0797, or speak to a member of staff at your local Sure Start Children's Centre.



A SureStart Children's Centre



Stockton-on-Tees  
ECONOMY 100% LOCAL



April 2010

Sharing Our Stories!

Our final leaflet





Karen and Rob, with their children, Lucy 8, Adam 6, and Martha 2.

"I became part of the Sleep Solutions Parental Team to help with my daughter Martha, who constantly wakes up extremely early every single morning. It was great to get advice from other mums about how to tackle the problem, and also for me to share my parental experience regard-

ing my older children. I've learned lots of great hints and tips over the past months but the best thing I've learned is that I have realised I am not the only mum who sometimes thinks "Help, my toddler is getting the better of me!!" I have learned that we all at some point have sleep issues, food battles, dummy dilemmas, toilet training and toddler tantrums to deal with. However, I know I am not alone and we can all get through these tough stages, and most things tend to sort themselves out - eventually!

Martha still gets up very early of a morning and I'm hoping when she starts nursery this will improve. Until then, I will continue to go to bed at the same time as my older children, and keep hoping for the day that one morning I will wake up when its light, instead of when its still dark!"



Linda and Kevin, with their children Poppy and Lilly, 2.

"When I was first approached to attend the sleep project I thought why not; what have I got to lose

as basically it couldn't get any worse! At the time our twin girls, Poppy and Lilly, were 22 months old and had never really slept all night; whether that be in their cots or our bed. Whilst they still rarely sleep all night they are much better and spend most nights in their own cots. This is down to trying and persevering with

methods we discussed in our sessions; namely controlled crying.

The meetings have also helped in that they have made me realise we are not alone and that really as parents we all basically have the same anxieties and worries. I have learnt not to beat myself up if the girls do happen to spend the night in our bed, although now if it does happen it is usually because one of them is under the weather. Both girls still have dummies but again with help from the sessions we are gradually weaning them off them using books and methods recommended to us. Finally, through the project, I have met and made some lovely friends along the way and would strongly recommend that if you are ever asked to attend something similar then go for it!"



Sarah and Damian with daughter Caitlin, 2.

"It has been great listening to everyone else's experiences, tips and techniques in trying to get through the 1st milestones in a baby's life. It has made me not feel so

alone when I have been having trouble with something, and having talked to the other mums found they have come up with some good tips on how to deal with it. Giving up the bedtime bottle turned out to be easier than I thought and after only 2 nights of asking and me saying "no we have a drink downstairs now before going to bed" she accepted this and no longer asks. We all agree that these milestones are more of a big deal for us than for the children and we should give them a bit more credit for how they deal with change - they're actually quite good!!!

My next stages are giving up the dummy (yes I am scared!) and potty training. A couple of the mums in the group have older children so I will definitely be taking on board their experiences and trying to do what has worked for them.

With our second child due in September my aim is to have Caitlin potty trained in the summer, one less bottom to change! I will definitely try and get the baby into her bedroom a lot earlier than I did with Caitlin. I will try putting the baby in their own room during the day and putting them to

bed whilst still awake which I didn't do before. Caitlin stayed in a moses basket downstairs with me all day and we took her up to bed on a night when we went, so I think that was my downfall when trying to get her to sleep without us when she went in her own room, fingers crossed."



Anne-Marie and Chris with son Liam, 20 months.

"I've really enjoyed taking part in the sleep research study, I found it very interesting and I've picked up quite a few tips along the way

(like buying blackout curtains for Liam's bedroom and making sure he gets plenty of fresh air and exercise during the day!)

I remember being quite surprised by what I was hearing at the first meeting, my problems didn't seem so bad when I heard what some of the other mums were saying about their sleepless nights! As a first time mum I was always questioning myself, not knowing if what I was doing was right and some days I just felt as though I was doing everything wrong (especially after very little sleep!). The meetings helped me realise that every baby/child is different, they all have different needs and are soothed in different ways, it's just a case of figuring out what works for you and your child. Liam didn't really seem to sleep very much even when he was born, but he has settled down much better now that he has a routine in place.

The thing I liked best about the group is that you could ask any question no matter how silly you thought it was and you'd get a variety of solutions and these were things that people had tried so you know they work. We also got information from the sleep research lab at Durham University which helped us to understand why sleep was important. It was also nice being able to share our experiences with others through the leaflets we produced. If you're struggling through at the moment just remember, you aren't the only one and things will get better, it really doesn't last forever!"



**About You**

What age group do you fall into?

Under 20      20-24      25-30      31-35      35 and  
over

How often do you use your local Sure Start Children's Centre?

How many children do you have and what are their gender & ages?

Do you have a bedtime routine for your child?

Do you have any issues with your child's sleep? (ie. Wakes too early, night waking etc.)

# *Certificate of Achievement*

---

Received this award for being a

## Super Sleeper

In the Young Children's Sleep Project



After completing the following:

- Identifying bedtime items and what they are used for
- Naming day-time and night-time animals and matching them with their sleeping place
- Turning the nursery into a bedroom and role playing getting ready for bed
- Making dream catchers
- Making dens and pretending to camp out
- Taking part in pyjama day

# Young Children's Sleep Project: Redhill Nursery



## Getting Ready for Bed

We read 'Tigers love to say goodnight' by Sue Mongredien, a rhyming story about a boy and his tiger going through their bedtime routine: having a glass of milk, taking a bath, putting on pyjamas, reading a story & turning off the light.



We talked about what we do on an evening before we go to bed & whether we have any special teddies that go to bed with us.

We took it in turns to pull items out of a bag and say what they were and what the boy in the story did with them before bed, like a toothbrush, flannel and cup.

## While You Were Sleeping

We read the animal counting book by John Butler, 'While you were sleeping' and identified all the animals in the pictures and what noises they made. We then talked about animals that sleep at night and animals that sleep during the day. We matched up photos of animals with their sleeping places.



'A bat comes out at night' said Oliver. 'I don't think that he lives in a basket' said Jerome.

## Peace At Last

We put on our pyjamas, cleaned our teeth and got into our very own bed at nursery! We read a story called 'Peace at last' by Jill Murphy, which is all about why we need quiet to sleep and a comfortable bed. Then we pretended to fall asleep.



We talked about how we fall asleep at night time and get up in the morning. We talked about how important it is for our sleep to fall asleep in the dark and go outside in the daylight when we get up.

We made a special sky in the nursery, half was night and half was day, so that we could go to sleep in the dark and get up in the light.



We had porridge for our breakfast at snack time. Fynn said that Peanut could be Goldilocks.



## Dream Catchers

We made Native American dream catchers from paper plates, string, feathers, beads and glitter.



We talked about how dream catchers look like spiders' webs but instead of catching flies they catch bad dreams. We all thought about if we could remember having dreams.

## Den Making

We went in the garden and made dens from fabric, chairs and the things we found outside, like the fence and trees.

We



talked about if we'd ever gone away and stayed in a tent or a caravan and what it would be like to sleep outside. We read 'Whatever Next' by Jill Murphy about a bear who builds a rookery and takes it to the moon when he should be getting ready for bed.

## Pyjama Day

We came to nursery in our pyjamas and played lots of physical activity games, like 'What time is it Mr Wolf?' - Bedtime of course! We talked about how we felt before we played the games and how we felt after playing games. 'Exhausted!' said Paige. We talked about how playing games and getting plenty of fresh air and natural light during the day can help us to sleep. We thought about why quiet time is so important before bed to help us to sleep.



**APPENDIX M: WEIGHTINGS FOR COMPOSITE SCORES**

<b>BEDTIME BEHAVIOUR</b>			
<b>QUESTION NO</b>	<b>QUESTION</b>	<b>RESPONSES</b>	<b>SCORES</b>
7.3	Does child go willingly to bed?	Always	0
		Often	1
		Occasionally	2
		Never	3
7.4	Does child ask to stay up later or try to stall bedtime?	Always	3
		Often	2
		Occasionally	1
		Never	0
<b>NIGHT WAKING BEHAVIOUR</b>			
<b>QUESTION NO</b>	<b>QUESTION</b>	<b>RESPONSES</b>	<b>SCORES</b>
10.1	Does child wake up during night?	Always	3
		Often	2
		Occasionally	1
		Never	0
		N/A	0
10.2	Does child get out of bed during night?	As 10.1	
10.3	Does child get into parents' bed during night?		
10.4	Does child get into siblings' bed during night?		
<b>MORNING WAKING BEHAVIOUR</b>			
<b>QUESTION NO</b>	<b>QUESTION</b>	<b>RESPONSES</b>	<b>SCORES</b>
13.1	Does child wake up too early?	Always	3
		Often	2
		Occasionally	1
		Never	0
13.2	Does child need to be woken up?	As 13.1	
13.3	Does child want to stay in bed?		
<b>PARENTAL SATISFACTION WITH CHILD'S BEDTIME ROUTINE &amp; SLEEP</b>			
<b>QUESTION NO</b>	<b>QUESTION</b>	<b>RESPONSES</b>	<b>SCORES</b>
17.1	Child gets enough sleep?	Strongly agree	1
		Agree	1
		Disagree	0
		Strongly disagree	0

<b>QUESTION NO</b>	<b>QUESTION</b>	<b>RESPONSES</b>	<b>SCORES</b>
17.2	Parent would like child to sleep for longer?	Strongly agree	0
		Agree	0
		Disagree	1
		Strongly disagree	1
17.3	Parent would like child to go to bed earlier?	As 17.2	
17.4	Child has a bedtime routine?	As 17.1	
17.5	Parent would like to establish a better bedtime routine?	As 17.2	
<b>DAYTIME BEHAVIOUR</b>			
<b>QUESTION NO</b>	<b>QUESTION</b>	<b>RESPONSES</b>	<b>SCORES</b>
17.6	Child complains about being tired during the day	Strongly agree	1
		Agree	1
		Disagree	0
		Strongly disagree	0
17.7	Child struggles to concentrate during the day	As 17.6	
<b>PARENTAL KNOWLEDGE OF MEDICALLY RECOMMENDED SLEEP PRACTICES</b>			
<b>QUESTION NO</b>	<b>QUESTION</b>	<b>RESPONSES</b>	<b>SCORES</b>
18.1	Exercise during the day helps children to sleep	Strongly agree	1
		Agree	1
		Unsure	0
		Disagree	0
		Strongly disagree	0
18.2	Playing energetic games in the hour before bedtime helps children to sleep	Strongly agree	0
		Agree	0
		Unsure	0
		Disagree	1
		Strongly disagree	1
18.3	Caffeinated products do not affect children's sleep	As 18.2	
18.4	A big meal in the hour before bedtime helps children to sleep	As 18.2	
18.5	Calming activities in the hour before bedtime helps children to sleep	As 18.1	
18.6	Watching television in the hour before bedtime helps children to sleep	As 18.2	
18.7	Playing computer games in the hour before bedtime helps children to sleep	As 18.2	
18.8	Bedrooms should be dark to help children to sleep	As 18.1	

<b>QUESTION NO</b>	<b>QUESTION</b>	<b>RESPONSES</b>	<b>SCORES</b>
18.9	Noise in the bedroom can help children to sleep	As 18.2	
18.10	The temperature of the bedroom can help children to sleep	As 18.1	
18.11	A set bedtime helps children to sleep	As 18.1	
18.12	It is important to expose children to daylight soon after waking	As 18.1	

## REFERENCES

- Acebo, C., Sadeh, A., Seifer, R., Tzischinsky, O., Hafer, A., & Carskadon, M. A. (2005). Sleep/wake patterns derived from activity monitoring and maternal report for healthy 1-to 5-year-old children. *Sleep, 28*(12), 1568-1577.
- Adair, R. H., & Bauchner, H. (1993). Sleep problems in childhood. *Current Problems in Pediatrics, 23*(4), 147-142.
- Adam, E. K., Snell, E. K., & Pendry, P. (2007). Sleep timing and quantity in ecological and family context: a nationally representative time-diary study. *Journal of Family Psychology, 21*(1), 4-19.
- Agras, W. S., Hammer, L. D., McNicholas, F., & Kraemer, H. C. (2004). Risk factors for childhood overweight: A prospective study from birth to 9.5 years. *Journal of Pediatrics, 145*(1), 20-25.
- American Academy of Sleep Medicine, 2005, *The International Classification of Sleep Disorders, Revised: Diagnostic and Coding Manual. 2nd ed.* [online] Available at: <http://www.esst.org/adds/ICSD.pdf> [Accessed 12 November 2012]
- Ancoli-Israel, S., Cole, R., Alessi, C., Chambers, M., Moorcroft, W., & Pollak, C. P. (2003). The role of actigraphy in the study of sleep and circadian rhythms. *Sleep, 26*(3), 342-392.
- Anders, T. F., Sadeh, A., & Appareddy, V. (1995). Normal sleep in neonates and children. In: R. Ferber & M. Kryger eds. 1995. *Principles and practices of sleep medicine in the child*. Philadelphia: W.B. Saunders, pp.7-18.
- Andreasen, A. R. (1995). *Marketing Social Change*: San Francisco: Jossey-Bass Publishers.
- Armour, D., & Paton, C. (2004). Melatonin in the treatment of insomnia in children and adolescents. *Psychiatrist, 28*, 222-224.
- Armstrong, K. L., O'Donnell, H., McCallum, R., & Dadds, M. (1998). Childhood sleep problems: Association with prenatal factors and maternal distress/depression. *Journal of Paediatrics and Child Health, 34*(3), 263-266.
- Association of Public Health Observatories (2010) *Health Profile 2010: Stockton-on-Tees* [pdf] Available at: [www.apho.org.uk/resource/view.aspx?RID=91944](http://www.apho.org.uk/resource/view.aspx?RID=91944) [Accessed 5 January 2011]
- Association of Social Anthropologist (2011) *Ethical Guidelines for Good Research Practice* [online] Available at: <http://www.theasa.org/ethics/guidelines.shtml> [Accessed 24 May 2012]
- Bandura, A. (1989). Social cognitive theory. In R. Vasta (Ed.) (1989) *Annals of child development. Vol. 6. Six theories of child development (pp. 1-60)*. Greenwich: JAI Press.
- Barbour, R. (2007). *Doing Focus Groups*. London: Sage Publications.
- Bates, J. E., Viken, R. J., Alexander, D. B., Beyers, J., & Stockton, L. (2002). Sleep and adjustment in preschool children: sleep diary reports by mothers relate to behavior reports by teachers. *Child Development, 73*(1), 62-74.

- BBC News (2010) *Lie in for Teenagers has Positive Results* [online] Available at: <http://news.bbc.co.uk/1/hi/education/8579951.stm> [Accessed 22 March 2010]
- Bernard, H. R. (2006). *Research Methods in Anthropology. 4th ed.*: Oxford: Rowman and Littlefield Publishers.
- Betts, N. M., Baranowski, T. and Hoerr, S.L. (1996). Recommendations for Planning and Reporting Focus Group Research. *Society for Nutritional Education*, 28(5), 279-281.
- Blunden, S. (2011). Behavioural treatments to encourage solo sleeping in pre-school children: an alternative to controlled crying. *Journal of Child Health Care*, 15(2), 107-117.
- Bolyard, D., & Cavins, G. (2008). Pediatric Sleep Apnea Diagnosis: Implications for Practice. *The Journal for Nurse Practitioners.*, 4(7), 519-524.
- Bonuck, K., Parikh, S., & Bassila, M. (2006). Growth failure and sleep disordered breathing: A review of the literature. *International Journal of Pediatric Otorhinolaryngology*, 70(5), 769-778.
- Borbely, A. A., & Achermann, P. (1999). Sleep homeostasis and models of sleep regulation. *Journal of Biological Rhythms*, 14(6), 557-568.
- Bourdieu, P. (1977). *Outline of a Theory of Practice*. Cambridge: Cambridge University Press.
- Bourdieu, P. (1998). *Practical Reason*: Cambridge: Polity Press.
- Boynton, P. M., & Greenhalgh, T. (2004). Selecting, designing, and developing your questionnaire. *British Medical Journal*, 328, 1312-1315.
- Boynton, P. M., Wood, G. W., & Greenhalgh, T. (2004). Reaching beyond the white middle classes. *British Medical Journal*, 328(7453), 1433-1436.
- Britten, N. (1995). Qualitative interviews in medical research. *British Medical Journal*, 311(6999), 251-253.
- Brown, C. A. (1997). Social Marketing and Applied Anthropology: A Practitioners View of the Similarities and Differences Between Two Research-Driven Disciplines. In J. M. T. Wallace (Ed) (1997) *Practicing Anthropology in the South*: Georgia: University of Georgia Press.
- Bryne, B. (2004). *Qualitative Interviewing*. In: C. Seale, ed. 2004. *Researching Society and Culture. 2nd ed.* London: Sage Publications: pp.179-92.
- Buckhalt, J. A., El-Sheikh, M., & Keller, P. (2007). Children's sleep and cognitive functioning: race and socioeconomic status as moderators of effects. *Child Development*, 78(1), 213-231.
- Burgess, R. G. (1996). *In the Field: An Introduction to Field Research*. London: George Allen & Unwin.
- Cain, N., & Gradisar, M. (2010). Electronic media use and sleep in school-aged children and adolescents: A review. *Sleep Medicine*, 11(8), 735-742.
- Cameron, D. E., Frazer, P., Rampton, H. B., & Kay, R. (1992). Researching language: Issues of power & method. *London: Routledge*.
- Cancer Research UK, 2009, *Children Ask Parents to Quit Smoking*. [online] Available at:

<http://www.cancerresearchuk.org/cancer-info/news/archive/cancernews/2009-09-15-children-ask-parents-to-quit-smoking-in-new-government-campaign> [Accessed 25 November 2012]

- Caudill, W., & Plath, D. W. (1966). Who Sleeps by Whom? Parent-Child Involvement in Urban Japanese Families. *Psychiatry*, 29(4), 344-366
- Cavendish, L. (2010) TVs, computers and siblings: the main reasons children aren't getting enough sleep. *The Daily Telegraph*. 24 Feb.
- Charlier, N., Glover, M., & Robertson, J. (2009). Keeping Kids Smokefree: lessons learned on community participation. *Health Education Research*, 24(6), 949-956.
- Chavin, W., & Tinson, S. (1980). The developing child: children with sleep difficulties. *Health Visitor*, 53(11), 477-480.
- Chen, M. Y., Wang, E. K., & Jeng, Y. J. (2006). Adequate sleep among adolescents is positively associated with health status and health-related behaviors. *BioMed Central Public Health*, 6.
- Clark, A. (2005). Ways of seeing: Using the Mosaic approach to listen to young children's perspectives. In A. Clark, A. T. Kjørholt, & P. Moss (Eds) (2005) *Beyond Listening: Children's perspectives on early childhood services*: Bristol: The Policy Press.
- Clark, A. (2010). Young Children as Protagonists and the Role of Participatory, Visual Methods in Engaging Multiple Perspectives. *American Journal of Community Psychology*, 46(1-2), 115-123.
- Cornwall, A., & Jewkes, R. (1995). What is participatory research? *Social Science & Medicine*, 41(12), 1667-1676.
- Crabtree, V. M., Korhonen, J. B., Montgomery-Downs, H. E., Jones, V. F., O'Brien, L. M., & Gozal, D. (2005). Cultural influences on the bedtime behaviors of young children. *Sleep Medicine*, 6(4), 319-324.
- Dahl, R. E. (1998). The development and disorders of sleep. *Advances in Pediatrics*, 45, 73-90.
- Dahl, R. E., & El-Sheikh, M. (2007). Considering sleep in a family context: introduction to the special issue. *Journal of Family Psychology*, 21(1), 1-3.
- Davis, K. F., Parker, K. P., & Montgomery, G. L. (2004a). Sleep in infants and young children: Part one: normal sleep. *Journal of Pediatric Health Care*, 18(2), 65-71.
- Davis, K. F., Parker, K. P., & Montgomery, G. L. (2004b). Sleep in infants and young children: part two: common sleep problems. *Journal of Pediatric Health Care*, 18(3), 130-137.
- De Bock, F., Fischer, J. E., Hoffmann, K., & Renz-Polster, H. (2010). A participatory parent-focused intervention promoting physical activity in preschools: design of a cluster-randomized trial. *Bmc Public Health*, 10.
- De Vaus, D. (2004). *Surveys in Social Research*. 5th ed.: London: Routledge
- Dennison, B. A., Russo, T. J., Burdick, P. A., & Jenkins, P. L. (2004). An intervention to reduce television viewing by preschool children. *Archives of Pediatrics & Adolescent Medicine*, 158(2), 170-176.
- Denzin, N. K. & Lincoln, Y.S. (Ed.). (2008). *Strategies of Qualitative Enquiry*. 3rd ed: London: Sage Publications.

- Department for Education (2003). *Every Child Matters*. Norwich: The Stationary Office
- Department for Education and Skills (2007). *A Unique Child: Health and Wellbeing*. Nottingham: DfES Publications
- Department for Education and Skills (2007) *Governance Guidance for Sure Start Children's Centres and extended schools* [pdf] Available at: [http://www.shropshire.gov.uk/schools.nsf/viewAttachments/MCOT-8K6MAY/\\$file/every-child-matters-outcomes-framework.pdf](http://www.shropshire.gov.uk/schools.nsf/viewAttachments/MCOT-8K6MAY/$file/every-child-matters-outcomes-framework.pdf) [Accessed 10 October 2010]
- Department of Health (2004) *Choosing Health: Making Healthier Choices Easier* [online] Available at: [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/@ps/documents/digitalasset/dh\\_133489.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_133489.pdf) [Accessed 16 December 2009]
- Dewald, J. F., Meijer, A. M., Oort, F. J., Kerkhof, G. A., & Bogels, S. M. (2010). The influence of sleep quality, sleep duration and sleepiness on school performance in children and adolescents: A meta-analytic review. *Sleep Medicine Reviews, 14*(3), 179-189.
- Ditrano, C. J., & Silverstein, L. B. (2006). Listening to parents' voices: Participatory action research in the schools. *Professional Psychology-Research and Practice, 37*(4), 359-366.
- Dollman, I., Ridley, K., Olds, T., & Lowe, E. (2007). Trends in the duration of school-day sleep among 10-to 15-year-old South Australians between 1985 and 2004. *Acta Paediatrica, 96*(7), 1011-1014.
- Dworski-Riggs, D., & Langhout, R. D. (2010). Elucidating the Power in Empowerment and the Participation in Participatory Action Research: A Story About Research Team and Elementary School Change. *American Journal of Community Psychology, 45*(3-4), 215-230.
- Eckerberg, B. (2004). Treatment of sleep problems in families with young children: effects of treatment on family well-being. *Acta Paediatrica, 93*(1), 126-134.
- Edwards, P., Roberts, I., Clarke, M., DiGuseppi, C., Pratap, S., Wentz, R., et al. (2002). Increasing response rates to postal questionnaires: systematic review. *British Medical Journal, 324*(7347), 1183.
- Einarsdottir, J. (2011). Icelandic Children's Early Education Transition Experiences. *Early Education and Development, 22*(5), 737-756.
- El-Sheikh, M., Buckhalt, J. A., Keller, P. S., Cummings, E. M., & Acebo, C. (2007). Child emotional insecurity and academic achievement: the role of sleep disruptions. *Journal of Family Psychology, 21*(1), 29-38.
- Ferber, R. (1994). *Sleep disorders in children*. London: Fireside.
- Gallasch, J., & Gradisar, M. (2007). Relationships between sleep knowledge, sleep practice and sleep quality. *Sleep and Biological Rhythms, 5*(1), 63-73.
- Garrett, A. (1970). *Interviewing: Its principals and methods*: USA: Family Service Association of America.
- Gaylor, E. E., Burnham, M. M., Goodlin-Jones, B. L., & Anders, T. F. (2005). A longitudinal follow-up study of young children's sleep patterns using a developmental classification system. *Behavioral Sleep Medicine, 3*(1), 44-61.

- Giannotti, F., & Cortesi, F. (2009). Family and Cultural Influences on Sleep Development. *Child and Adolescent Psychiatric Clinics of North America*, 18(4), 849-861.
- Gordon, R., McDermott, L., Stead, M., Angus, K. & Hastings, G. (2006). *A Review of the Effectiveness of Social Marketing Physical Activity Interventions* London: The National Social Marketing Centre.
- Gray, C., & Winter, E. (2011). Hearing voices: participatory research with preschool children with and without disabilities. *European Early Childhood Education Research Journal*, 19(3), 309-320.
- Gregory, A. M., Eley, T. C., O'Connor, T. G., Rijdsdijk, F. V., & Plomin, R. (2005). Family influences on the association between sleep problems and anxiety in a large sample of pre-school aged twins. *Personality and Individual Differences*, 39(8), 1337-1348.
- Grenfell, M. (2008). *Pierre Bourdieu Key Concepts*. Stocksfield: Acumen Publishing Ltd.
- Grier, S., & Bryant, C. A. (2005). Social marketing in public health. *Annual Review of Public Health*, 26, 319-339.
- Gupta, N. K., Mueller, W. H., Chan, W., & Meininger, J. C. (2002). Is obesity associated with poor sleep quality in adolescents? *American Journal of Human Biology*, 14(6), 762-768.
- Hale, L., & Hale, B. (2010). Treat the source not the symptoms: why thinking about sleep informs the social determinants of health. *Health Education Research*, 25(3), 395-400.
- Hampshire, K., Hills, E., & Iqbal, N. (2005). Power relations in participatory research and community development: A case study from northern England. *Human Organization*, 64(4), 340-349.
- Hampshire, K., Porter, G., Owusu, S., Mariwah, S., Abane, A., Robson, E., et al. (2012). Taking the long view: temporal considerations in the ethics of children's research activity and knowledge production. *Childrens Geographies*, 10(2), 219-232.
- Harcourt, D. (2011). An encounter with children: seeking meaning and understanding about childhood. *European Early Childhood Education Research Journal*, 19(3), 331-343.
- Hayward, C. R. (2000). *De-facing power*. Cambridge: Cambridge University Press.
- Health Technology Assessment, 1999, *Health Promoting Schools and Health Promotion in Schools: Two Systematic Reviews*. [online] Available at: <http://www.hta.ac.uk/fullmono/mon322.pdf> [Accessed 1 February 2013]
- Healy, A. (1972). Sleep Patterns of Preschool Children - General Principles and Current Knowledge. *Clinical Pediatrics*, 11(3), 174-177.
- High, P., Hopmann, M., LaGasse, L., & Linn, H. (1998). Evaluation of a clinic-based program to promote book sharing and bedtime routines among low-income urban families with young children. *Archives of Pediatrics & Adolescent Medicine*, 152(5), 459-465.
- Hollander, J. A. (2004). The Social Contexts of Focus Groups. *Journal of Contemporary Ethnography*, 33(5), 602-637.

- Horne, J. (1992). Annotation - Sleep and its Disorders in Children. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 33(3), 473-487.
- Horstman, M., Aldiss, S., Richardson, A., & Gibson, F. (2008). Methodological issues when using the draw and write technique with children aged 6 to 12 years. *Qualitative Health Research*, 18(7), 1001-1011.
- Horwath, C. C. (1999). Applying the transtheoretical model to eating behaviour change: challenges and opportunities. *Nutrition Research Reviews*, 12(2), 281-317.
- Iglowstein, I., Jenni, O. G., Molinari, L., & Largo, R. H. (2003). Sleep duration from infancy to adolescence: reference values and generational trends. *Pediatrics*, 111(2), 302-307.
- Israel, B. A., Schulz, A. J., Parker, E. A., & Becker, A. B. (1998). Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health*, 19, 173-202.
- James, A. (2007). Giving voice to children's voices: Practices and problems, pitfalls and potentials. *American Anthropologist*, 109(2), 261-272.
- Jenni, O. G., & LeBourgeois, M. K. (2006). Understanding sleep-wake behavior and sleep disorders in children: the value of a model. *Current Opinion in Psychiatry*, 19(3), 282-287.
- Jenni, O. G., Molinari, L., Caflisch, J. A., & Largo, R. H. (2007). Sleep duration from ages 1 to 10 years: variability and stability in comparison with growth. *Pediatrics*, 120(4), e769-776.
- Jenni, O. G., & O'Connor, B. B. (2005). Children's sleep: An interplay between culture and biology. *Pediatrics*, 115(1), 204-216.
- Johnson, C. M. (1991). Infant and Toddler Sleep - A telephone survey of parents in one community. [Article]. *Journal of Developmental and Behavioral Pediatrics*, 12(2), 108-114.
- Johnson, N., & McMahon, C. (2008). Preschoolers' sleep behaviour: associations with parental hardiness, sleep-related cognitions and bedtime interactions. *Journal of Child Psychology and Psychiatry*, 49(7), 765-773.
- Jones, C. H. D. (2011). *Exploring the Short-Sleep Obesity Association in Young Children*: Durham University.
- Kelly, P. J. (2005). Practical suggestions for community interventions using participatory action research. *Public Health Nursing*, 22(1), 65-73.
- Kerr, S., & Jowett, S. (1994). Sleep problems in pre-school children: a review of the literature. *Child: Care, Health and Development*, 20(6), 379-391.
- Kitzinger, J. (1995). Qualitative research. Introducing focus groups. *British Medical Journal*, 311(7000), 299-302.
- Klackenberg, G. (1982). Sleep Behavior Studied Longitudinally - Data from 4-16 years on duration, night-awakening and bed-sharing. *Acta Paediatrica*, 71(3), 501-506.
- Klackeng, G. (1968). Development of Children in a Swedish Urban Community. A Prospective Longitudinal Study. *Acta Paediatrica*, 57, 28-47.
- Kotler, P. (1982). *Marketing for nonprofit organizations*. 2nd ed. New Jersey: Prentice-Hall.

- Kotler, P., Roberto, N., & Lee, N. (2002). *Social Marketing: Improving the Quality of Life*: London: Sage Publications.
- Kotler, P., & Zaltman, G. (1971). Social Marketing - Approach To Planned Social Change. *Journal of Marketing*, 35(3), 3-12.
- Kuhn, B. R., & Elliott, A. J. (2003). Treatment efficacy in behavioral pediatric sleep medicine. *Journal of Psychosomatic Research*, 54(6), 587-597.
- Kuhn, B. R., & Weidinger, D. (2000). Interventions for infant and toddler sleep disturbance: A review. *Child & Family Behavior Therapy*, 22(2), 33-50.
- Kvale, S. (2007). *Doing Interviews*. : London: Sage Publications.
- Liu, X. C. (2004). Sleep and adolescent suicidal behavior. *Sleep*, 27(7), 1351-1358.
- Lofland, J. (1971). *Analyzing Social Settings*: California: Wadsworth.
- Lumeng, J. C., Somashekar, D., Appugliese, D., Kaciroti, N., Corwyn, R. F., & Bradley, R. H. (2007). Shorter sleep duration is associated with increased risk for being overweight at ages 9 to 12 years. *Pediatrics*, 120(5), 1020-1029.
- Marketing Week, 2008, *Positives of Pester Power* [online] Available at: <http://www.marketingweek.co.uk/positives-of-pester-power/2059328.article> [Accessed 05 December 2012]
- Martin, A., Barajas, R. G., Brooks-Gunn, J., & Hale, L. (2011). Parenting services may be an opportunity for improving bedtime routines among at-risk preschoolers. *Behavioural Sleep Medicine*, 9(4), 237-242.
- Martin, M. (1996). Issues of power in the participatory research process. In: K. de Koning, & M. Martin, eds. 1996 *Participatory research in health: Issues and Experiences*: London: Zed Books.
- Matricciani, L., Olds, T., & Petkov, J. (2012). In search of lost sleep: Secular trends in the sleep time of school-aged children and adolescents. *Sleep Medicine Reviews*, 16(3), 203-211.
- Matricciani, L. A., Olds, T. S., Blunden, S., Rigney, G., & Williams, M. T. (2012). Never Enough Sleep: A Brief History of Sleep Recommendations for Children. *Pediatrics*, 129(3), 548-556.
- May, T. (2001). *Social Research: Issues, methods and process.3rd ed.*: Buckingham: Open University Press.
- Mays, N., & Pope, C. (1995). Rigour and qualitative research. *British Medical Journal*, 311(6997), 109-112.
- McAlister, A. L., Perry, C. L., & Parcel, G. S. (2008). How Individuals, Environments, and Health Behaviours Interact: Social Cognitive Theory. In K. Glanz, B. K. Rimer & K. Viswanath, eds. 2008 *Health Behavior and Health Education: Theory, Research, and Practice. 3rd ed.* San Fransisco: Jossey-Bass.
- McColl, E., Jacoby, A., Thomas, L., Soutter, J., Bamford, C., Steen, N., et al. (2001). Design and use of questionnaires: a review of best practice applicable to surveys of health service staff and patients. *Health Technology Assessment*, 5(31), 1-256.
- McCormick, B., Stone, I., & Team, C. A. (2007). Economic costs of obesity and the case for government intervention. *Obesity Reviews*, 8, 161-164.
- McIntyre, A. (2008). *Participatory Action Research* London: Sage Publications.

- Meltzer, L. J., & Mindell, J. A. (2004). Nonpharmacologic treatments for pediatric sleeplessness. *Pediatric Clinics of North America*, 51(1), 135-151.
- Merrell, C., & Tymms, P. (2010). Changes in children's cognitive development at the start of school in England 2001–2008. *Oxford Review of Education*.
- Milan, S., Snow, S., & Belay, S. (2007). The context of preschool children's sleep: racial/ethnic differences in sleep locations, routines, and concerns. *Journal of Family Psychology*, 21(1), 20-28.
- Minde, K. (1999). Commentary: Empirically supported treatments in pediatric psychology: Bedtime refusal and night wakings in young children. *Journal of Pediatric Psychology*, 24(6), 483-484.
- Mindell, J. A. (1999). Empirically supported treatments in pediatric psychology: Bedtime refusal and night wakings in young children. *Journal of Pediatric Psychology*, 24(6), 465-481.
- Mindell, J. A., Du Mond, C. E., Sadeh, A., Telofski, L. S., Kulkarni, N., & Gunn, E. (2011a). Efficacy of an internet-based intervention for infant and toddler sleep disturbances. *Sleep*, 34(4), 451-458.
- Mindell, J. A., Du Mond, C. E., Sadeh, A., Telofski, L. S., Kulkarni, N., & Gunn, E. (2011b). Long-term efficacy of an internet-based intervention for infant and toddler sleep disturbances: one year follow-up. *Journal of Clinical Sleep Medicine*, 7(5), 507-511.
- Mindell, J. A., & Durand, V. M. (1993). Treatment of childhood sleep disorders: generalization across disorders and effects on family members. *Journal of Pediatric Psychology*, 18(6), 731-750.
- Mindell, J. A., Kuhn, B., Lewin, D. S., Meltzer, L. J., Sadeh, A., American Academy of Sleep, M., et al. (2006). Behavioral treatment of bedtime problems and night wakings in infants and young children.[erratum appears in Sleep. 2006 Nov 1;29(11):1380]. *Sleep*, 29(10), 1263-1276.
- Mindell, J. A., & Meltzer, L. J. (2008). Behavioural sleep disorders in children and adolescents. *Annals Academy of Medicine Singapore*, 37(8), 722-728.
- Mindell, J. A., Owens, J., Alves, R., Bruni, O., Goh, D. Y., Hiscock, H., et al. (2011). Give children and adolescents the gift of a good night's sleep: A call to action. *Sleep Medicine*, 12(3), 203-204.
- Mindell, J. A., Sadeh, A., Kohyama, J., & How, T. H. (2010). Parental behaviors and sleep outcomes in infants and toddlers: a cross-cultural comparison. *Sleep Medicine*, 11(4), 393-399.
- Mindell, J. A., Sadeh, A., Wiegand, B., How, T. H., & Goh, D. Y. (2010). Cross-cultural differences in infant and toddler sleep. *Sleep Med*, 11(3), 274-280.
- Mindell, J. A., Telofski, L. S., Wiegand, B., & Kurtz, E. S. (2009). A nightly bedtime routine: Impact on sleep in young children and maternal mood. *Sleep*, 32 (5), 599-606.
- Mishler, E. (1986). *Research interviewing: Context and narrative*: Cambridge: Harvard University Press.
- Moore, B. A., Friman, P. C., Fruzzetti, A. E., & MacAleese, K. (2007). Brief report: Evaluating the bedtime pass program for child resistance to bedtime - A randomized, controlled trial. [Article]. *Journal of Pediatric Psychology*, 32(3), 283-287.

- Morelli, G. A., Oppenheim, D., Rogoff, B., & Goldsmith, D. (1992). Cultural Variation in Infants Sleeping Arrangements - Questions of independence. *Developmental Psychology*, 28(4), 604-613.
- Morgan, D. L. (1997). *Focus Groups As Qualitative Research*. 2nd ed.: London: Sage Publications
- Moser, C. A. & Kalton, G. (2001). *Survey Methods in Social Investigation*. 2nd ed.: Aldershot: Ashgate.
- Moturi, S., & Avis, K. (2010). Assessment and treatment of common pediatric sleep disorders. *Psychiatry*, 7(6), 24-37.
- Nakash, R. A., Hutton, J. L., Jorstad-Stein, E. C., Gates, S., & Lamb, S. E. (2006). Maximising response to postal questionnaires--a systematic review of randomised trials in health research. *BioMed Central*, 6, 5.
- National Cancer Institute, 2005, *Theory at a Glance: A Guide for Health Promotion Practice* [online] Available at: <http://www.cancer.gov/cancertopics/cancerlibrary/theory.pdf> [Accessed 25 November 2012]
- National Institutes of Health; National Heart, Lung, and Blood Institute; National Center on Sleep Disorders Research (2006) *Guide to selected publicly available sleep-related data resources* [pdf] Available at: <http://www.nhlbi.nih.gov/about/ncsdr/research/sleep-datasets-july-06.pdf> [Accessed 12 November 2009]
- National Health Service (2010) *How Much Sleep do Kids Need?* [online] Available at: <http://www.nhs.uk/Livewell/Childrensleep/Pages/howmuchsleep.aspx> [Accessed 23 February 2011]
- National Sleep Foundation (2004) *Sleep in America Poll Summary of Findings* [online] Available at: <http://www.sleepfoundation.org/sites/default/files/FINAL%20SOF%202004.pdf> [Accessed 16 December 2009]
- Newark, M., Barclay, K., Cross, L., Cummins, S., Ferguson, S., & Swales, A.-M. (2011). Sleep Solutionz: taking part. *Community practitioner : the journal of the Community Practitioners' & Health Visitors' Association*, 84(2), 38-39.
- Nixon, G. M., Thompson, J. M. D., Han, D. Y., Becroft, D. M., Clark, P. M., Robinson, E., et al. (2008). Short sleep duration in middle childhood: Risk factors and consequences. *Sleep*, 31(1), 71-78.
- Noland, H., Price, J. H., Dake, J., & Telljohann, S. K. (2009). Adolescents' sleep behaviors and perceptions of sleep. *Journal of School Health*, 79(5), 224-230.
- O'Brien, L. M., & Gozal, D. (2004). Neurocognitive dysfunction and sleep in children: From human to rodent. *Pediatric Clinics of North America*, 51(1), 187-202.
- Owens, J. (2008). Classification and epidemiology of childhood sleep disorders. *Primary Care*, 35(3), 533-546.
- Owens, J., Maxim, R., McGuinn, M., Nobile, C., Msall, M., & Alario, A. (1999). Television-viewing habits and sleep disturbance in school children. *Pediatrics*, 104(3), pp.e27.

- Owens, J. A. (2005). Introduction: Culture and sleep in children. *Pediatrics*, *115*(1), 201-203.
- Owens, J. A., Belon, K., & Moss, P. (2010). Impact of Delaying School Start Time on Adolescent Sleep, Mood, and Behavior. *Archives of Pediatrics & Adolescent Medicine*, *164*(7), 608-614.
- Owens, J. A., Fernando, S., & Mc Guinn, M. (2005). Sleep disturbance and injury risk in young children. *Behavioral Sleep Medicine*, *3*(1), 18-31.
- Owens, J. A., Palermo, T. M., & Rosen, C. L. (2002). Overview of current management of sleep disturbances in children: II - Behavioral interventions. *Current Therapeutic Research-Clinical and Experimental*, *63*(Supplement B), B38-B52.
- Owens, J. L., France, K. G., & Wiggs, L. (1999). Behavioural and cognitive-behavioural interventions for sleep disorders in infants and children: A review. *Sleep Medicine Reviews*, *3*(4), 281-302.
- Paavonen, E. J., Porkka-Heiskanen, T., & Lahikainen, A. R. (2009). Sleep quality, duration and behavioral symptoms among 5-6-year-old children. *European Child and Adolescent Psychiatry*, *18* (12), 747-754.
- Pandi-Perumal, S. R., Trakht, I., Spence, D. W., Srinivasan, V., Dagan, Y., & Cardinali, D. P. (2008). The roles of melatonin and light in the pathophysiology and treatment of circadian rhythm sleep disorders. *Nature Clinical Practice Neurology*, *4*(8), 436-447.
- Patel, S. R., & Hu, F. B. (2008). Short sleep duration and weight gain: A systematic review. *Obesity*, *16*(3), 643-653.
- Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods*. 2nd ed.: London: Sage Publications.
- Perry, B., & Dockett, S. (2011). 'How 'bout we have a celebration!' Advice from children on starting school. *European Early Childhood Education Research Journal*, *19*(3), 373-386.
- Peterson, R. A. (2000). *Constructing Effective Questionnaires*: London: Sage Publications.
- Pollock, J. I. (1994). Night-Waking at 5 Years of Age - Predictors and Prognosis. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *35*(4), 699-708.
- Pope, C., & Mays, N. (1995). Reaching the parts other methods cannot reach: an introduction to qualitative methods in health and health services research. *British Medical Journal*, *311*(6996), 42-45.
- Porter, G., Townsend, J., & Hampshire, K. (2012). Children and young people as producers of knowledge. *Childrens Geographies*, *10*(2), 131-134.
- Punch, K. (2003). *Survey Research: The Basics*: London: SAGE Publications.
- Quach, J., Hiscock, H., Canterford, L., & Wake, M. (2009). Outcomes of child sleep problems over the school-transition period: Australian population longitudinal study. *Pediatrics*, *123*(5), 1287-1292.
- Ramchandani, P., Wiggs, L., Webb, V., & Stores, G. (2000). A systematic review of treatment of settling problems and night waking in young children. *Western Journal of Medicine*, *173*(1), 33-38.

- Ramos, K. D., & Youngclarke, D. M. (2006). Parenting advice books about child sleep: Cosleeping and crying it out. *Sleep*, 29(12), 1616-1623.
- Rapoff, M. A. (1999). *Adherence to pediatric medical regimens* New York: Kluwer Academic/Plenum Publishers.
- Reid, M. J., Walter, A. L., & O'Leary, S. G. (1999). Treatment of young children's bedtime refusal and nighttime wakings: a comparison of "standard" and graduated ignoring procedures. *J Abnorm Child Psychol*, 27(1), 5-16.
- Reilly, J. J., Armstrong, J., Dorosty, A. R., Emmett, P. M., Ness, A., Rogers, I., et al. (2005). Early life risk factors for obesity in childhood: cohort study. *British Medical Journal*, 330(7504), 1357-1359.
- Rickert, V. I., & Johnson, C. M. (1988). Reducing Nocturnal Awakening and Crying Episodes in Infants and Young-Children - A comparison between scheduled awakenings and systematic ignoring. *Pediatrics*, 81(2), 203-212.
- Roberts, D. N., M. (2010). Time for Bed. *Under 5: Magazine of the Pre-school Learning Alliance*, Nov/Dec. London: Pre-school Learning Alliance.
- Rubin, A. & B.abbie, E.R. (2007). *Essential Research Methods for Social Work*: Canada: Cengage Learning.
- Ryan, G. W. & Weisner, T. (1996). Content analysis of words in brief descriptions: How mothers and fathers describe their children. In: V.C. de Munk & E.J. Sobo, eds. 1998. *Using the Methods in the Field: A Practical Introduction and Casebook*: London: Sage Publications: 57-68.
- Sadeh, A., Gruber, R., & Raviv, A. (2003). The effects of sleep restriction and extension on school-age children: What a difference an hour makes. *Child Development*, 74(2), 444-455.
- Schostak, J. (2006). *Interviewing and Representation in Qualitative Research*: Berkshire: Open University Press.
- Scott, R. A. & Shore, A. R. (1979). *Why Sociology Does Not Apply: A Study of the Use of Sociology in Public Planning* New York: Elsevier.
- Sekine, M., Yamagami, T., Handa, K., Saito, T., Nanri, S., Kawaminami, K., et al. (2002). A dose-response relationship between short sleeping hours and childhood obesity: results of the Toyama Birth Cohort Study. *Child Care Health and Development*, 28(2), 163-170.
- Skanfors, L. (2009). Ethics in Child Research: Children's Agency and Researches "ethical radar". *Childhoods Today*, 3(1), 1-22.
- Skouteris, H., McCabe, M., Swinburn, B., & Hill, B. (2010). Healthy eating and obesity prevention for preschoolers: a randomised controlled trial. *Bmc Public Health*, 10.
- Sleep Scotland, 2012, *Sound Sleep*. [online] Available at: [http://www.sleepscotland.org/teen\\_school\\_workshops.php](http://www.sleepscotland.org/teen_school_workshops.php) [Accessed 10 May 2012]
- Snell, E. K., Adam, E. K., & Duncan, G. J. (2007). Sleep and the body mass index and overweight status of children and adolescents. *Child Development*, 78(1), 309-323.
- Spilsbury, J. C., Storfer-Isser, A., Drotar, D., Rosen, C. L., Kirchner, H. L., & Redline, S. (2005). Effects of the home environment on school-aged children's sleep. *Sleep*, 28(11), 1419-1427.

- Stake, R. E. (2008). Qualitative Case Studies. In: N. K. Denzin & Y. K. Lincoln, eds. 2008. In D. Lincoln (Ed.), *Strategies of Qualitative Enquiry*. 3rd ed (pp. pp.485-499): London: SagePublications.
- Stearns, P. N., Rowland, P., & Giarnella, L. (1996). Children's sleep: Sketching historical change. [Article]. *Journal of Social History*, 30(2), 345-366.
- Story, M., Sherwood, N. E., Himes, J. H., Davis, M., Jacobs, D. R., Jr., Cartwright, Y., et al. (2003). An after-school obesity prevention program for African-American girls: The Minnesota GEMS pilot study. *Ethnicity & Disease*, 13(Supplement 1).
- Stuttaford, M., & Coe, C. (2007). The "learning" component of participatory learning and action in health research: Reflections from a local sure start. *Qualitative Health Research*, 17(10), 1351-1360.
- Sugden, R. (2008). Why incoherent preferences do not justify paternalism. *Constitutional Political Economy*, 19, 226–248.
- Summerbell, C. D., Waters, E., Edmunds, L. D., Kelly, S., Brown, T., & Campbell, K. J. (2005). Interventions for preventing obesity in children. *Cochrane Database of Systematic Reviews* (Art. No.: CD001871. DOI: 10.1002/14651858.CD001871.pub2. ).
- Sweitzer, S. J., Briley, M. E., Roberts-Gray, C., Hoelscher, D. M., Harrist, R. B., Staskel, D. M., et al. (2011). Psychosocial Outcomes of Lunch is in the Bag, a Parent Program for Packing Healthful Lunches for Preschool Children. *Journal of Nutrition Education and Behavior*, 43(6), 536-542.
- Swinburne, C. (2005). Bedtime blues. Helping your children get a good night's sleep. *Nursing standard*, 19(44), 22-23.
- Taheri, S. (2006). The link between short sleep duration and obesity: we should recommend more sleep to prevent obesity. *Archives of Disease in Childhood*, 91(11), 881-884.
- Taheri, S., Fleming, P., Leary, S., Ness, A., Henderson, J., Golding, J., et al. (2006). Preliminary data regarding childhood sleep from the avon longitudinal study of parents and children (ALSPAC). *Sleep*, 29, A76-A76.
- Taheri, S., Lin, L., Austin, D., Young, T., & Mignot, E. (2004). Short sleep duration is associated with reduced leptin, elevated ghrelin, and increased body mass index. *PLoS Medicine*, 1(3), 210-217.
- Taillard, J., Philip, P., Coste, O., Sagaspe, P., & Bioulac, B. (2003). The circadian and homeostatic modulation of sleep pressure during wakefulness differs between morning and evening chronotypes. *Journal of Sleep Research*, 12(4), 275-282.
- Tees Valley Unlimited (2010) *Tees Valley Statistics Card* [pdf] Available at: <https://www.teesvalleyunlimited.gov.uk/media/50790/statistics%202010.pdf> [Accessed 18 November 2010]
- The British Academy for Humanities and Social Sciences, 2012, *Nudging Citizens Toward Localism?* [online] Available at: <http://www.britac.ac.uk/policy/Nudging-citizens-towards-localism.cfm> [Accessed 18 December 2012]
- The Sleep Council, 2009, *Wake up call for Schools*. [online] Available at:

- <http://www.sleepcouncil.org.uk/2009/10/wake-up-call-for-schools/>  
[Accessed 19 September 2010]
- The Sleep Council, 2012, *Teachers Say Lack of Sleep Devastates School Day*.  
[online] Available at: <http://www.sleepcouncil.org.uk/2012/03/teachers-say-lack-of-sleep-devastates-school-day/> [Accessed 09 August 2012]
- Thome, M., & Skuladottir, A. (2005). Changes in sleep problems, parents distress and impact of sleep problems from infancy to preschool age for referred and unreferred children. *Scandinavian Journal of Caring Sciences*, 19(2), 86-94.
- Tikotzky, L., & Sadeh, A. (2010). The role of cognitive-behavioral therapy in behavioral childhood insomnia. *Sleep Medicine*, 11(7), 686-691.
- Timmons, V., Critchley, K., Campbell, B. R., McAuley, A., Taylor, J. P., & Walton, F. (2007). Knowledge translation case study: A rural community collaborates with researchers to investigate health issues. *Journal of Continuing Education in the Health Professions*, 27(3), 183-187.
- Underwood, L. E., Azumi, K., Voina, S. J., & Vanwyk, J. J. (1971). Growth Hormone Levels During Sleep in Normal and Growth Hormone Deficient Children. *Pediatrics*, 48(6), 946-954.
- Unicef (2010) *A Summary of the United Nations Convention on the Right of the Child* [pdf] Available at: <http://unicef.org.uk/Documents/Publication-pdfs/crcsummary.pdf> [Accessed 25 April 2011]
- Van Willigen, J. (2002). *Applied Anthropology. An Introduction. 3rd ed.* London: Bergin & Garvey.
- Viswanathan, M., Ammerman, A., Eng, E., Garlehner, G., Lohr, K. N., Griffith, D., et al. (2004). Community-based participatory research: assessing the evidence. *Evidence report/technology assessment*, (99), 1-8.
- von Kries, R., Toschke, A. M., Wurmser, H., Sauerwald, T., & Koletzko, B. (2002). Reduced risk for overweight and obesity 5-and 6-y-old children by duration of sleep - a cross-sectional study. *International Journal of Obesity*, 26(5), 710-716.
- Wade, C. A., Ortiz, C., & Gorman, B. S. (2007). Two-session group parent training for bedtime noncompliance in head start preschoolers. *Child & Family Behavior Therapy*, 29(3), 23-55.
- Wallerstein, N. B., & Duran, B. (2006). Using community-based participatory research to address health disparities. *Health promotion practice*, 7(3), 312-323.
- Ward, T. M., Gay, C., Anders, T. F., Alkon, A., & Lee, K. A. (2008). Sleep and napping patterns in 3-to-5-year old children attending full-day childcare centers. *Journal of Pediatric Psychology*, 33(6), 666-672.
- Weissbluth, M. (1995). Naps in Children: 6 months-7 years. *Sleep*, 18(2), 82-87.
- Wiggs, L. (2007). Are children getting enough sleep? Implications for parents. *Sociological Research Online*, 12(5).
- Williams, S., Lowe, P., & Griffiths, F. (2007). Embodying and embedding children's sleep: Some sociological comments and observations. *Sociological Research Online*, 12(5).
- Winnicott, D. W. (1958). Transitional Objects and Transitional Phenomena. *Collected Papers. New York: Basic Books.*

- Wolf, A. W., Lozoff, B., Latz, S. and Paludetto, R. (1996). Parental Theories in the Management of Young Children's Sleep in Japan, Italy and the United States In: S. Harkness & C.M. Super eds. (1996) *Parents' Cultural Belief Systems*: London: The Guilford Press.
- Wong, M. M., Brower, K. J., Fitzgerald, H. E., & Zucker, R. A. (2004). Sleep problems in early childhood and early onset of alcohol and other drug use in adolescence. *Alcoholism: Clinical & Experimental Research*, 28(4), 578-587.
- World Health Organisation, 2006, *What is the Evidence on School Health Promotion in Improving Health or Preventing Disease and Specifically, What is the Effectiveness of the Health Promoting Schools Approach?* [online] Available at: [http://www.euro.who.int/\\_data/assets/pdf\\_file/0007/74653/E88185.pdf](http://www.euro.who.int/_data/assets/pdf_file/0007/74653/E88185.pdf) [Accessed 28 January 2013]
- Worthman, C. M., & Brown, R. A. (2007). Companionable sleep: Social regulation of sleep and cosleeping in Egyptian families. *Journal of Family Psychology*, 21(1), 124-135.
- Yokomaku, A., Misao, K., Omoto, F., Yamagishi, R., Tanaka, K., Takada, K., et al. (2008). A study of the association between sleep habits and problematic behaviors in preschool children. *Chronobiology International*, 25(4), 549-564.
- Zee, P. C., & Turek, F. W. . (1999). Introduction to sleep and circadian rhythms. In F.W. Turek & P.C. Zee eds. 1999. *Regulation of sleep and circadian rhythms* (pp. pp. 1-17): New York: Marcel Dekker Inc.
- Zuckerman, B., Stevenson, J., & Bailey, V. (1987). Sleep Problems in Early-Childhood - Continuities, Predictive Factors and behavioral-Correlates. *Pediatrics*, 80(5), 664-671.