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The effect of developmental activities, embedded into parents activities of daily living, on supine sleeping infant milestone development

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CHAPTER 1 INTRODUCTION

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1.1 Background to the Study

"Dismantling or revising of daily routines for the insertion of intervention requires a deep understanding of family routines and their meaning to family members." (p251)[10]

Human occupational engagement, or how humans construct their routines and enfold themselves in the activities of their lives, is a core concept of occupational therapy.

None are as involved in this orchestration of time as those undertaking the work of 'mothering'. Mothers are afforded the role of being the keepers of time,[10] and are charged with the task of managing both their own time and that of their children through the construction of efficient routines.

The case in point to the introductory quote, exploring the insertion of apparently benign interventions, is the parental education campaign designed to reduce the incidence of Sudden Infant Death Syndrome (SIDS). The "Back to sleep" (BTS) campaign and its corollary, "prone to play", is designed to mitigate the effects of developmental delay found to be caused by infants sleeping in supine.

The programme was advocated in the early 1990's, at the prompting of a variety of paediatric research forums such as (but not limited to) the American Academy of Pediatrics (AAP), who established a link between the prone sleeping posture and SIDS.[4] Although it is

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recognized that the prone posture is not the only risk factor for SIDS[11, 12] it is considered to be a significant one.[12] The BTS campaign aims to reduce prone sleeping to less than 10% of the American infant population.[11] A shift in family education took place that encouraged parents to put their newborn infants to sleep lying on their sides or back, rather than prone.[5] Various results suggested an initial reduction in the SIDS rates of up to 50%, following the implementation of this education programme, in countries around the world.[13] In the United States, the AAP recommendations also resulted in a change in policy in crèches and day care settings, resulting in 37.3% of facilities exclusively placing the infants in their charge to sleep on their backs.[14]

Within a relatively short period of time of the BTS programme being initiated, doctors noticed, and anecdotally described, a delay in developmental milestones in babies who were placed supine to sleep.[5] This has subsequently been researched and several studies support these observations.[15-18]

A significant difference in rolling at four months between infants who slept prone compared to those who slept either supine or in side-lying was found by Jantz, Blosser and Fruechting (1997).[5] No specific data were collected regarding how the babies were placed during the day time, and it is assumed that this is the same position as the sleeping position, based on the work of Mildred, Beard, Dallwitz and Unwin.[19] Many of these early findings have been duplicated. Babies that slept in supine were slower in supported sitting, in creeping on their stomachs, four-foot crawling and pulling to stand.[20]

Further, the BTS education programme expounded the benefits of using a "prone position to play"[11, 14] for infants, in order to mitigate the negative effects of sleeping in supine. It has been found that in homes and day care facilities alike there is a reduced implementation

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of the "prone to play" principle and studies have suggested that many people simply are not aware of this second part of the campaign.[14] Some parents or caregivers are fearful of putting their infants prone at any time[19] and still others realize, after a period of time, that the infant dislikes the prone position, and consequently parents reduce the use of a prone position in their routine.[16] It is also suggested that parents find it difficult to gauge how much time their baby spends in prone and that the measured time is actually a fraction of that which parents estimated it to be.[5, 14, 16]

If one considers the "prone to play" component of this campaign from a mother's point of view the juxtaposition of *time* and *resources* which are assumed in the idea of a 'simple intervention' comes into play. The apparent simplicity in the tasks of caring for an infant masks the complexity of the balancing of time. Therapists, therefore, have to consider very carefully what it means to add a 'simple stimulation activity' for infants to a mother's routine. Although keenly aware of the need to provide developmental opportunities for their children, mothers experience a sense of time pressure, such that, for every task added, another task has to give way.[10, 21]

Further, the literature relating to a family-centred therapy approach suggests that intervention strategies need to be tailored to real life for the *parents* in order to be incorporated into practice. Rather than impacting directly on infants, early intervention practices should aim to extend the parents range of skills that they can employ to help their child on an ongoing basis.[22] Studies indicate that mothers find it difficult to implement traditional, therapist-directed interventions at home,[23, 24] but that they are skilful at adjusting and adapting what they are shown in therapy in order to help their children.[24] The focus of the intervention needs to be the building of the parent-child relationship, in order to optimize the developmental potential of an infant.[25]

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The problem for parents in implementing the 'prone to play' principle is therefore, that it stands outside of the tasks of human occupation that a mother-infant dyad would normally be engaged in, or taxes the energy, time and resources of that dyad. In order for a programme to successfully be translated into habit it needs to be integrated into the normal occupational tasks that a new mother has to master.[7]

1.2 Statement of the Problem

Now that a substantial move toward the BTS campaign is in place, research has shown a delay in milestone achievement in babies who sleep supine as opposed to prone.[16] The panacea for this – as nurses and midwives at Well Baby clinics advise parents – is for parents to put their babies in prone during awake and supervised time, but this is often difficult to achieve, because this advice falls outside of the normal activities that mothers build into their daily routines.[26] Further, many parents do not use prone positioning with their infants for fear of the perceived risks. The advice given by the AAP to 'play in prone' is seldom conveyed with the same degree of importance as is 'sleeping in supine'. In failing to understand that this directive, outside of the normal activities of daily living (ADL), is too onerous, nurses, doctors and therapists involved in early infant development leave mothers to attempt to fit supervised prone time in the time spaces between feeding, bathing, dressing, caring for and interacting with their infants. Despite a keen awareness of the developmental needs of their infants, this extra time is more than most mothers can incorporate in their daily routine.

1.3 Purpose of the Study

The purpose of this study is to determine whether a programme of defined activities, embedded into a mother's ADL, will affect the

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motor development of supine sleeping infants up to six months of age. Infants included in the programme, which challenges their postural muscles, will be compared to a usual care group of supine sleeping infants who are not involved in this programme.

1.4 Justification for the Study

The extent to which some infants are delayed may be sufficient to result in a misdiagnosis of developmental delay or to prompt therapeutic intervention,[16, 27] which may be unnecessary. It also appears that it is difficult for parents to gauge how much time their infants are actually spending playing in prone. This suggests that the current practice, of providing parents with a 'target' of a certain length of time spent in prone per day, would be ineffective advice for doctors, nurses and therapists to use.

Further, since parents gauge the well-being of their infants in the first year of life by their developmental milestones, it is anxiety provoking for them to realise that their infant is delayed and any means to reduce that anxiety is a worthy pursuit for the medical profession.

Lack of prone positioning may result in the excessive use of baby seats, baby bouncers and walking rings.[28] Mothers make use of infant positioning tools as an expedient means to entertain or protect their infants while they are involved in normal tasks of ADL.[28] If one could embed the tasks, for infant stimulation, into tasks which a mother otherwise needs to do, would she be able to enfold both tasks into her construction of a routine?

Occupational therapists work to understand how humans construct routines and habits. Without that understanding, there is a sense that to simply add an exercise or intervention to a client's life is a

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small matter, easily accomplished by the client, when the reality might be completely opposite.

This research addresses a method of teaching parents to challenge the postural muscles of their infants through the vehicle of an ADL-embedded postural control programme, in a manner that is more likely to become habitual in the parents normal routine. This may also reduce the observed delays for these infants who are placed supine to sleep.

1.5 Aims of the Study

- To design a postural control programme for infants, in which defined stimulatory activities are embedded into the everyday activities of the parents, in keeping with the occupational therapy philosophy of embedded activity.
- To determine whether parents are able to incorporate new techniques into their daily activities, which challenge the postural control of their infants, and
- To evaluate whether this is developmentally advantageous to supine sleeping infants.

1.6 Objectives of the Study

- To design and pilot a postural control programme for infants, in which defined prone activities are embedded into the everyday activities of the parents.
- To compare the motor development of supine sleeping infants after six months of age whose parents incorporate an activities programme, embedded into their normal activities of daily

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living (ADL), that challenge the infants' postural muscles with infants whose parents do not.

- To evaluate the participation of parents in incorporating postural control activities which are embedded into their own ADL.

1.7 Null Hypothesis

There will be no difference after six months, in the motor development of supine sleeping infants, whose parents incorporated activities embedded into their normal ADL to challenge their infants' postural muscles and those infants whose parents did not.

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