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Strategies Used by Parents of Twins to Obtain Sleep

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Abstract

Empirical evidence on how parents of twins manage their need for sleep is non-existent. Lay publications provide advice for parents of multiples, yet their recommendations have not been studied for frequency of use nor effectiveness. Parents of twins were interviewed by telephone regarding strategies they used to obtain sleep during the first 6 months post-birth. Reported strategies were grouped into a priori categories suggested by the literature. Findings indicated that parents attempted various strategies to increase their sleep, but disagreed on their effectiveness. Development and testing of a repertoire of effective strategies tailored for parents of twins is needed.

Life transitions occurring during the initial postpartum weeks are key times when lack of sleep may occur for parents. The demands of early parenthood and their impact on the ability to obtain rest and sleep are exponentially increased for parents of twins. Parenting two small, often preterm infants at once poses high childrearing demands. Preterm infants require more vigilant care (Hummel & Cronin, 2004) and show a preference for nighttime wakefulness (Giganti, Fagioli, Ficca, Cioni, & Salzarulo, 2001) compared to full term infants, which further places parents of twins at risk for sleep restriction. Sleep restriction results in depression and fatigue (Corwin, Brownstead, Barton, Heckard, & Morin, 2005; Dennis & Ross, 2005; Lee & DeJoseph, 1992) that can adversely affect parents' ability to meet childrearing demands.

Most parents of newborns are counseled to obtain adequate sleep, yet few strategies are known to effectively allow new parents to obtain adequate sleep. Daytime naps are one of the most commonly recommended strategies to combat the adverse effects of reduced night sleep time in the early postpartum period. New mothers are often counseled to 'sleep when the baby sleeps.' Yet 47.1% of mothers of singleton infants in one study (N=51) did not nap (Cottrell & Karraker, 2002). For the mothers who did nap, perception of sleep disturbance and the opportunity to nap were more predictive of napping than total nighttime sleep or actual time spent caring for the infant at night. Women who had multiple children at home napped less than women who had only one child (Cottrell & Karraker, 2002), a finding that has implications for mothers of twins who are caring for more than one infant. Another

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study reported that less than half of women (N=37) slept during their baby's longest sleep period (Thomas & Foreman, 2005).

No empirically supported strategies for managing sleep exist to address the unique needs of parents raising twins. Self-help books, typically written by parents of multiples (Laut & Laut, 1999; Lyons, 2003) provide suggestions "from the trenches" yet these recommendations have not been studied for their frequency of use nor tested for their effectiveness. Common recommendations for parents of twins include having parents take turns caring for the infants in 4 to 6 hour shifts during the night, mixing 24 to 48 hours of formula in advance, putting a small refrigerator and bottle warmer in the infants' bedroom to avoid traveling to the kitchen during the night, propping bottles and feeding both infants at once, co-bedding infants in the same crib for the first 3 to 4 months, and putting the twins on a regular coordinated schedule (Laut & Laut, 1999). Other consumer sources recommend that parents alternate turns getting up, that they each "claim" a baby to be responsible for if he/she awakens (Lyons, 2003), or that they bring one or both babies into their bed at night (Gromada, 1999).

Several approaches thought to allow parents of twins to obtain sleep are aimed at encouraging the infants to sleep. Suggestions are given for parents of twins to offer more frequent daytime feedings, massage the babies at bedtime, play the same music each evening prior to bedtime, use "white noise" from a vacuum cleaner, ceiling fan, or humidifier, play a recording of a human heart beat at bedtime (Gromada, 1999), keep lighting levels low, and use extra-large diapers at night that are not changed until morning (Laut & Laut, 1999). A limited number of randomized controlled trials to increase sleep in newborn full term singleton infants have supported the effectiveness of emphasizing day-night differences by holding and stimulating the baby less frequently at night (Pinilla & Birch, 1993; St James-Roberts, Sleep, Morris, Owen, & Gillham, 2001), keeping lighting levels low (St James-Roberts et al., 2001; Wolfson, Lacks, & Futterman, 1992) and educating parents on normal infant sleep patterns (Stremmler et al., 2006; Symon, Marley, Martin, & Norman, 2005; Wolfson et al., 1992). None of the singleton birth strategies have been evaluated for effectiveness in preterm nor multiple infants. Furthermore, only Stremmler's program (Stremmler et al., 2006) added strategies (i.e education on maternal sleep hygiene) aimed at increasing maternal sleep and included both maternal sleep and infant sleep as outcome measures (Stremmler et al., 2006). Although the mothers in the treatment group had 57 more minutes of sleep at night (Stremmler et al., 2006), the multi-faceted approach of the intervention makes it difficult to determine which individual components of the program were helpful.

A pilot study was conducted to gather information from mothers and fathers on their experiences and perspectives of how they managed their need for sleep during the first 6 months following the arrival home of their twin infants. The research question was: What strategies did parents of twins employ to obtain sleep in the first 6 months after taking their babies home?

Methods

Data were gathered from mothers and fathers of twins during separate structured audio taped telephone interviews. The mean twin age at the time of data collection was 15.1 months ($SD = 2.3$; range 11-18 months). Mothers and fathers were interviewed separately.

Sample and setting

A convenience sample of 8 families with twins was recruited. All participants had delivered twins in one of two local hospitals and had participated in an earlier pilot study of sleep

patterns and fatigue in parents of twins. Either mothers or fathers could participate in the telephone interviews without the other's involvement in the study. Eight mothers and seven fathers agreed to be interviewed. All participants were heterosexual couples residing in the same household, able to read and write English, over 18 years of age, and had twins born at 33 weeks gestation. The twins were the first children for the couple, had not required a Level 3 NICU stay > 7 days for either twin, and had not required any unusual care-taking needs upon discharge (e.g. technologically dependent).

Instruments

An investigator-developed form was used to collect data on key demographic variables. Each telephone interview was audio-recorded using a speaker phone and 2 tape recorders. The following question was asked of participants: What things did you do to get the sleep you needed in the first 6 months after taking your babies home? In addition, participants were asked to comment on how well the attempted strategies worked to increase their sleep.

Procedures

Following IRB approval from two hospitals where the mothers had originally delivered their twins, letters were sent to 10 families with twins to invite them to participate in the study. A consent form was included with the letter together with a stamped envelope to facilitate return to the researcher. A stamped postcard to enable couples to decline participation was also included in the recruitment mailing. Once the signed consent form was received by the researcher, parents were phoned to arrange a mutually agreeable time for the telephone interviews. The purpose of the study and risks and benefits of participation were reviewed. Parents were informed that the interview would be audio taped. The principal investigator and a student research assistant conducted the 20-minute phone interviews using a semi-structured interview guide developed by the principal investigator. All parents were in their homes while interviewed. Notes were taken during the interviews to record strategies related to the parent, strategies related to encouraging the infant to sleep, and strategies that altered the environment in a way that promoted sleep for either/both parent and infant. Recorded responses were read back to parents for clarification as needed. Audio tapes were transcribed verbatim by the research assistant. Following the interview, each parent was mailed a \$10 department store gift card as a token of appreciation.

Analysis

SPSS software (version 13.5, SPSS Chicago, IL) was used to analyze descriptive statistics regarding the sample characteristics. Responses were categorized into *a priori* categories of "Strategies Related to Self", "Strategies Related to Infants", and "Strategies Related to Environment." The *a priori* categories were established based on the types of recommendations previously tested in mothers of singleton infants (Pinilla & Birch, 1993; St James-Roberts et al., 2001; Stremler et al., 2006; Symon et al., 2005; Wolfson et al., 1992) and recommendations given to mothers of twins in consumer publications (Gromada, 1999; Laut & Laut, 1999; Lyons, 2003). The number of times each strategy was reported by a couple or by a parent was noted. Audio tapes were reviewed to verify responses recorded during the telephone interviews. Responses were coded independently into the *a priori* categories by the two investigators, both of whom had extensive clinical backgrounds as advanced practice nurses in neonatal and maternal-child settings. One coder was a mother of twins. The two investigators met to discuss coding until 100% agreement was reached.

Results

The sample consisted of 8 non-Hispanic White families with twins. Eight mothers and seven fathers were interviewed separately (one father chose not to participate). Mean maternal age

was 31.6 ($SD = 3.3$) and the mean paternal age was 32.0 ($SD = 3.8$). Mean years of education were 16.3 ($SD = 2.4$) for mothers and 15.6 ($SD = 1.1$) for fathers. Annual reported family income was high, with 37.5% reporting income between \$60-79,000 and 62.5% reporting income at or above \$80,000. All but two sets of twins were born prior to term (mean twin gestational age = 35.8 weeks, $SD = 1.8$, range 33.6-38.5 weeks).

Strategies related to self

Attempted strategies to obtain sleep reported by mothers and fathers that involved modifications of personal behavior are listed in Table 1. The most frequently reported strategy involving self was taking shifts or alternating turns caring for the infants by both mothers and fathers. Mothers were more likely than fathers to report that assistance from relatives allowed them to sleep, to sleep when both infants slept, to sleep in the infants' room, and to catch up on sleep during the weekend. Fathers were more likely than mothers to report that they took shifts or alternated turns with the mother to care for the infants and to nap whenever an opportunity arose. Other strategies mentioned once each by parents included "letting everything go" (household tasks), and propping bottles during the infants' feedings.

Strategies related to infants

Several strategies were utilized to encourage the infants to sleep. The most commonly reported strategies related to the infants were, in order of frequency, getting the twins on the same feeding/sleeping schedule, putting the infants in swings or bouncy chairs, and keeping the infants up late (bedtime at 11:00 pm or later) while stretching out their naps (no naps after 6:00 pm) to encourage longer night sleep. Only two mothers reported putting their infants in the same crib to encourage them to sleep. Strategies related to the infants mentioned once each by only one parent in the sample included using a pacifier, feeding the infants rice cereal before bedtime, giving them water at night so they wouldn't get used to nighttime meals, warming the feeding, and giving a bath before bedtime.

Strategies related to the environment

All parents reported structuring the environment in some manner in order to encourage the twins to sleep. The most commonly reported strategies included using either music or "white noise" such as a ceiling fan or humidifier in the room where the twins slept, decreasing lighting, and allowing the babies to "sleep where they may" rather than only in the crib. One couple reported bringing the twins' crib into the parents' room and another reported decreasing stimulation (general household activity) prior to bedtime.

Discussion

Parents interviewed for this study reported a variety of attempted strategies to increase their sleep during the first 6 months they cared for their twins. Strategies related to modifications of the parent's behaviors and actions, to encouraging sleep in the infant, and to altering the environment to promote sleep for either/both parent and infant. Although many strategies reported were similar to those recommended in lay publications for parents of multiples, parents in this sample did not agree on their effectiveness during the early postpartum months. One family stated they "tried everything" without success. While data gathered in this study provide beginning evidence of strategies attempted by parents of twins, insight into the effectiveness of these strategies is still lacking.

Parents in this sample attempted to increase their sleep by assigning caretaking shifts, a recommendation made in the literature (Neifert & Thorpe, 1990). Yet parents who took turns caring for the infants admitted that they both arose from bed if both infants needed

feedings at the same time. One father thought setting 4 to 5 hour shifts for parents to take turns at night resulted in one parent losing all sleep for the entire stretch of duty. Similar to observations made by previous researchers (Cottrell & Karraker, 2002; Thomas & Foreman, 2005), sleeping while the infants was difficult for new parents to implement. The twins often didn't sleep at the same time. Fathers in this sample who curtailed work hours to assist in child care used infant nap time to catch up on employment responsibilities by telecommuting; similar to previous studies (Cottrell & Karraker, 2002), mothers used infant nap time to catch up on necessary household tasks (laundry, meal preparation).

Similar to previous findings, although assistance from relatives was appreciated (Beck, 2002), it was insufficient (Chang, 1990). Parents in the current study reported that assistance was too brief to prevent chronic sleep restriction and voiced frustration that assistance from relatives disappeared after the first week. Grandmothers or other female relatives stayed overnight for a week at most before returning to their own employment responsibilities. Financial constraints prohibited the use of hired help for the parents in this sample.

Parents in this sample that placed their infants in swings or bouncy chairs felt these devices were effective in encouraging infant sleep. Movement experienced by infants using these devices provides vestibular stimulation that acts to soothe and quiet fussy infants (Schaper, 1982). Most families in the current study felt that getting the twins on the same feeding and sleeping schedule was eventually effective. Putting twins on the same schedule has previously been described (Beck, 2002; Robin, Corroyer, & Casati, 1996). However, in the early weeks when the infants fed slowly and frequently (typically 2 to 3 hours apart), parents reported at most an hour's opportunity for sleep before it was time for the next feeding.

All families in this sample used "white noise" or music in some form to encourage their twins to sleep, a strategy acknowledged to be useful but sometimes habit-forming (Ferber, 1985). One father reported that playing music "made the babies sleepy" but was not felt to increase parental sleep time. Emphasizing day/night differences by decreasing lighting and decreasing stimulation in the evening was thought to be effective by parents in this study, confirming findings in the literature (St James-Roberts et al., 2001; Wolfson et al., 1992).

Implications for future research

Sleep patterns reflect behaviors that are amenable to intervention. Results from this pilot project provide guidance to more specifically elicit information on strategies parents of twins find effective in increasing their own sleep. A study on the sleep patterns of mothers and fathers of twins is currently underway that will allow data to be collected prospectively on the use and effectiveness of these strategies as part of a sleep diary completed by parents. Once effective strategies that increase parental sleep have been identified, future intervention protocols can be designed and systematically tested to develop a repertoire of effective strategies applicable to families with twins.

Limitations

A primary limitation of this pilot study is the use of a small sample homogeneous sample. The strategies reported by participants in this sample may not be representative of those used by parents of twins who are of higher or lower income, of different races and ethnicities, or are unmarried. Further study is needed in larger and more diverse samples.

Conclusion

This study provides beginning empirical evidence of the strategies attempted by parents of twins to increase their sleep in the early postpartum weeks after the discharge of their twins. Additionally, because the majority of the twins were prior to term, this study provides

beginning evidence of strategies used by parents caring for preterm infants. While some of the reported strategies were similar to those used by parents of singleton infants, results document the need for identification and testing of effective strategies specifically tailored for families of twins.

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Table 1
Commonly Reported Strategies Related to Self (n=8 mothers, n=7 fathers)

Strategies	# of Mothers	# of Fathers
Taking shifts or alternating turns	5	6
Receiving help from relatives	4	2
Sleeping when babies slept	4	1
Sleeping in babies' room	3	0
Napping whenever able	1	2
Going to bed earlier myself	1	1
Catch up sleep on weekends	2	0

Table 2
Commonly Reported Strategies Related to Infants (n=8 mothers, n=7 fathers)

Strategies	# of Mothers	# of Fathers
Same feeding/sleeping schedules for twins	4	5
Using baby swings/bouncy chairs	4	2
Bedtime after 11:00pm/no naps after 6:00pm	3	2
Offering late night bottles	2	2
Swaddling babies tightly	1	2
Holding/rocking babies to sleep	1	2
Bringing babies to parents' bed if awakened	1	1
Letting babies "cry it out"	1	1
Putting twins in the same crib	2	0

Table 3
Commonly Reported Strategies Related to Environment (n=8 mothers, n=7 fathers)

Strategies	# of Mothers	# of Fathers
Using "white noise" where babies slept	5	6
Decreasing lighting	4	5
Allowing babies to "sleep where they may"	4	1
Decreasing noise level	2	1