

Original article

Sleep pattern and problems in healthy toddlers

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Abstract

Objective: Sleep habits and sleep disturbances vary with age biological, psychological and socio-cultural environment. To understand this normality we conducted a questionnaire based survey among parents of healthy toddlers in Coimbatore city.

Method: A questionnaire cum interview based study elicited responses from the parents. This questionnaire focused on demographic factors, sleep pattern, practices and related problems with open ended and close ended questions.

Key words: sleep pattern, sleep problems, toddlers

Introduction

Sleep related problems and are not uncommon in children and may persist in adulthood (1). Disrupted or deficient sleep impacts every aspect of a child's growth and development.(2-5) sleep problems can be a result of both types of sleep issues (disorders and problems), it is important to have a better understanding of sleep pattern issues prevalent in pediatric community . Sleep disorders are readily identified if a child has prominent snoring or excessive daytime sleepiness, yet many sleep related problems may go unrecognized. One reason is that sleep issues are not frequently raised by care givers during health visits (6, 7). In addition, pediatric health care providers have limited training in pediatric sleep (8), cursory questions related sleep and limited patient contact time. One study of two general pediatric clinics found that a discussion of sleep issues is rare, diagnosis uncommon, and treatment guidelines lacking (9). Many studies suggest that night-time sleep pattern in childhood is mainly determined by the environment (10, 11). Multiple factors within the home have been shown to

influence the sleep duration and pattern. In an sample of over 5000 children aged from birth to 36 months, a regular bedtime routine and limited TV exposure were among the strongest predictors of longer sleep at night (12). As there are also marked ethnic and socio-economic differences in the sleep duration of young children (13), it is essential to know the sleep pattern of the community. This study therefore aimed to analyze the sleep pattern of healthy toddlers in Coimbatore city.

Material and methods

Healthy toddlers (1-3 years) attending PSG well baby/vaccination clinic at PSG hospitals Coimbatore, India were included for this cross sectional prospective study. Toddlers with chronic medical illness and on any sedative drugs were not included. The Institutional ethics committee approved the study. Written informed consent was taken from parents / caregivers. A questionnaire is adapted and translated in Tamil from two previous studies (14, 15). This questionnaire focused on demographic factors, sleep duration, bedtime rituals and sleep related disturbances with open ended and close ended

questions among participants. Parents are asked to recall the child's sleep behaviors over a "typical" recent week. Items are rated on a 3-point scale: "usually" if the sleep behavior occurred 5 to 7 times per week; "sometimes" for 2 to 4 times per week; and "rarely" for 0 to 1 time per week. The questionnaire was administered via interview by trained health assistant.

Categorical variables were summarized by proportions while the continuous variables were summarized by means and standard deviations. Frequency data applied for responses from open ended questions. Data analysis was done using SPSS15.

Results

Demographic factors

A total of 186 completed responses from parents of toddlers were collected over six month period. Responses from parents only were taken final statistical analysis. The mean age of the toddlers was 20(+ 4.5) months with sex ratio of 55:45 of boys and girls.

Sleep duration

The total reported average duration of sleep in the study population was 11.5±2.5 hours including day time sleep. Mean duration of day time sleep was about 1.30±30minutes.18 % of the kids had no regular day time sleep. The median time for falling asleep 8.30 pm (range 7 to 11.30pm) and wake up time 6.30am (range 4.30 to 8.30am). Early sleep onset time reported in children who are not taking regular day time nap. Only 30 % of kids usually had regular sleep duration and timings.

Sleep practices

Co -sleeping with either one or both parents was prevalent among 82% of the total sample. About 12% of kids were sleeping with grant parents and others.

About 6 % of parents allowed their kids to sleep in separate bed in the same room. Working parent's babies slept late in the night (median time 9.30pm) and woke up late in the morning (median time 7.40am) due to more playing in the night and undisturbed sleep in the morning hours. Commonly reported bedtime routines are bed time stories 40%, songs with patting (28%), swaddling and rocking (30%). Significant number of babies (45 %) watching television before falling asleep.

Table -1 sleep problems

Sleep problems	Boys N=102 (54.8%)	Girls N=84 (45.2%)	Total (N=186)
Over all	45	40	85 (45.6%)
Bed time resistance	23	27	50 (27%)
Irregular timings	19	23	42(23%)
Fragmented sleep	15	18	33(18%)
Frequent Night waking	24	20	44(24%)
Bruxism	10	7	17(9%)
Day time drowsiness	30	20	50(27%)
Restless leg syndrome	10	6	16(9%)
No sleep problem	52	49	101

Quality of sleep and sleep disturbances

About 20% of parents perceived that their child is not sleeping well due to reasons such as bed time resistance, irregular timings, fragmented sleep, frequent awakenings due to probable night terrors and night mares , teeth grinding and difficulty in falling asleep and getting up. They encountered one or more such issues regularly. The reported above sleep disturbances (one or more) in the study group were 45.6% though many parents felt such disturbances were not significant (refer table no-1). Bruxism was reported in 9 % of children. About 25% children reported to frequent night waking without any obvious reasons.Only 15 percent of babies

between one to two years required 1 or 2 night feeds and bowel movements which were rare after two years. Day time drowsiness reported in 27%. As co-sleeping with parents either single or both parents observed in 83 percent of samples sub group comparisons were not done. There were no significant sex differences in the study group.

Discussion

Sleep plays vital role in the neuro-cognitive development of children. Enquiring parents about their children's sleep pattern should be part of every child care visits. Evaluating sleep pattern and disorders requires an understanding of changes in sleep occurs with developmental maturation. Children sleep pattern also varies with age, ethnicity and cultural background. There are only few studies from India evaluated sleep pattern among preschool children. This study was done in Coimbatore a tier 2 city where in both parents are mostly working. In the past, children were generally considered to be so called "good-sleepers", but recent reports do not support this myth (16). Most sleep problems may start in late infancy and become a major issue for toddlers. Adequate and sound sleep is crucial for successful learning in children. Daytime behaviors in children may also be influenced by nighttime problems. The overall prevalence of sleep disorders in children of

Conclusion

Toddlers sleep largely depends with parent's child rearing practices and sleep ecology. Sleep related problems are common and most issues are not perceived as serious illness warranting medical attention. Addressing babies sleep pattern and educating sleep hygiene in early years of life should be a part of health care visits as sleep determines development and behavior.

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our study is 45 %. The sleep problems reported in similar studies from other countries varies from 20-50%. Bed time resistance and irregular timings were the most common concerns reported in this study. Frequent night waking lead to increased day time drowsiness in this group (50%). Our study results were comparable to a sleep study from Iran using BEARS tool in Preschool and School-aged children (17). A Similar study from Singapore reported identical pattern of sleep duration and sleep related problems in mixed Asian population.

The prevalence of co-sleeping among Indian children is comparable to studies from all Asian and culturally similar countries (19, 20). As children's sleep patterns are more likely to be influenced by the sleep pattern of co-sleeping parents, it is essential that co-sleeping adults to practice well sleep hygiene. Sleep problems were more common in developing countries than developed countries. The lower rate of sleep problems reported from developed countries may be explained in view of higher levels of knowledge of sleep hygiene and screening programs. (19, 21). The following are the limitations. Small cross-sectional questionnaire based study and may not represent entire community. Accuracy of self reporting is not clear in this study.

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