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Bed-sharing and related factors in early adolescents

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ABSTRACT

Objective: To investigate the prevalence of bed-sharing and examine correlates of bed-sharing habits in early adolescents.**Methods:** Participants were 1452 early adolescents from 10 primary schools in Shanghai, China. Children's health status and past history, family environment and parents' attitude towards bed-sharing, and children's sleep arrangements were surveyed. Sleep was assessed by the Children's Sleep Habit Questionnaire. Tanner stage was determined by the endocrinologist.**Results:** The median of age was 10.83 years (range: 9.42–12.92; 95% confidence interval [CI]: 10.79–10.83) and boys accounted for 51.17%. The prevalence of bed-sharing was 16.8%. Positive parental attitude toward bed-sharing (OR: 9.87; 95% CI: 6.57–14.83), asthma (OR: 2.15; 95% CI: 1.16–3.98), smaller residential space (OR: 1.90; 95% CI: 1.17–3.09), extended family (OR: 1.59; 95% CI: 1.16–2.18), and being physically less mature (OR: 2.39; 95% CI: 1.16–4.91) increased the likelihood of bed-sharing. Bed-sharers were more likely to have bedtime resistance (OR: 12.20; 95% CI: 8.59–17.33), sleep anxiety (OR: 3.76; 95% CI: 2.74–5.15), and poor sleep quality (OR: 3.21; 95% CI: 2.28–4.81) compared to non-bed-sharers. Furthermore, bed-sharing was associated with daytime sleepiness (OR: 1.53; 95% CI: 1.10–2.13) but not with sleep duration.**Conclusions:** Bed-sharing is highly prevalent among Chinese early adolescents and is significantly related to sleep quality. Parental positive attitude toward bed-sharing was the most determining factor.

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1. Introduction

'Co-sleeping' is an umbrella term that generally is considered to include the practices of bed sharing with a caretaker(s) or other family members, proximate sleeping arrangements, and room sharing during sleep. A large-scale cross-cultural survey involving 17 countries found that the incidence of co-sleeping in the first 3 years of life was highest in India (72.6%) and lowest in the United Kingdom (5.0%) [1]. In general, more than half of the families reported this practice in Asian countries as compared to rates lower than 10% in European countries [1]. In addition to the differences between countries, significant racial and ethnic differences in co-sleeping were found even within the same country [2]. As a result, professionals need to recognize the cultural environment in which children sleep,

and be knowledgeable about how the cultural beliefs and values of both families and professionals may interact with the characteristics of each child [3].

Bed-sharing involves children and parent(s) sharing the same bed during the night. Mainly parental attitudes and motivations have been thought to influence whether or not a child sleeps with parents [4]. Parents commonly choose their children's sleep arrangements on the basis of cultural beliefs or values, and professional advice [3]. However, across cultures much controversy exists regarding the potential benefits and risks associated with bed-sharing [5–8]. For instance, in Western countries children's development of independence and individualism is cardinal, and thus especially the hazards of bed-sharing might be stressed. As a result, bed-sharing is less likely to be considered appropriate or desirable [2,9,10]. However, in Asian countries, childrearing practices emphasize the development of interdependence and family closeness; therefore bed-sharing has been generally accepted by parents [11,12]. Epidemiologic studies confirm these cultural practices.

Bed-sharing may predominantly be thought of as a child-care practice limited to infancy in some cultures. Yet studies involving school-age children have shown that bed-sharing is still common beyond infancy: 12.4% of Saudi Arabian school-age children [13] and,

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especially in Asia, 18.0% [14] to 23.0% [12] of Chinese school-age children. Age is another important factor for parents in choosing sleeping arrangements. It is furthermore acknowledged that bed-sharing practices generally decline with age [15]. Interestingly, longitudinal studies showed that bed-sharing during infancy was not predictive of bed-sharing during childhood, whereas bed-sharing during childhood tended to persist for longer periods of time [16]. This has been ascribed to bed-sharing being a difficult habit for children to give up once the pattern has become a routine [17]. Given the high rates of bed-sharing persisting into childhood especially in China and in other Asian countries, it is interesting to explore its continuance in early adolescence. That is, families may face challenges when children reach adolescence since youth may progressively develop autonomy and independence [18,19]. Similarly, adolescence, being characterized as a dynamic developmental period marked by reduced sleep with increased daytime sleepiness or changing sleep habits, might be a determinant [20]. Thus, the cross-cultural beliefs and values may conflict with the needs and biological characteristics of the child entering puberty.

Bed-sharing in children is furthermore known to be associated with socio-demographic factors such as extended families, families of low socioeconomic status, single-parent households, and parental work status as well as child health problems [2,10,21]. Bed-sharing has further been associated with child and parent anxiety, and issues of separation and sleep management [22]. However, studies investigating the association between sleep problems and bed-sharing in infants and younger children yielded inconsistent findings [8,10,11,13,21,23]. Furthermore, one longitudinal study indicated that bed-sharing in infancy and early childhood was not related to either sleep problems, pathology nor to problematic consequences, nor was it related to beneficial consequences at ages 6 and 18 years [8].

In the realm of their changing social relationships and individual needs for sleep, few studies investigated related factors of bed-sharing in early adolescence, which might be different for younger children. Therefore the present study aimed to assess the prevalence of bed-sharing in early adolescents in Shanghai, China, and to explore socio-demographic and child factors associated with bed-sharing, and further to investigate the association between bed-sharing, sleep duration, and sleep problems.

2. Methods

2.1. Sample

The study was conducted from November to December 2009. Through a stratified, randomly clustered sampling method, six urban districts and four suburban and rural districts in Shanghai were selected. That is, within each of the districts one primary school was randomly chosen, and fifth-grade students and their parents were recruited. The study was approved by the ethics committee of Shanghai Children's Medical Center, and written informed consent was obtained from the parents.

2.2. Measures

Children were assessed at their school during school hours. Parents completed our survey on children's sleep arrangements and parental attitude about bed-sharing and child's sleep, and questions related to children's health and socio-demographic characteristics.

2.2.1. Sleep arrangement and parental attitude

Sleep arrangement was determined by a 'yes' or 'no' response to a single question: "Does your child sleep in your (the parents) bed during the night?" As for parents' attitude toward bed-sharing,

parents could respond they "approved", "neither approved nor objected" (neutral response), or "objected" sharing their bed with their child.

2.2.2. Sleep problems and sleep duration

We used the Children Sleep Habit Questionnaire (CSHQ), which is a 33-item questionnaire to assess children's sleep [24]. A Chinese version of the CSHQ was developed by translation and back-translation showing a good reliability, content, and construct validity [25]. Parents were asked to report their child's sleep habits during the past month. Items are rated on a three-point scale, ie, usually (five to seven times per week), sometimes (two to four times per week), and rarely (zero to once per week). The 33 sleep items were conceptually grouped into eight subscales: bedtime resistance, sleep-onset delay, insufficient sleep, sleep anxiety, night wakings, parasomnias, sleep-disordered breathing, and daytime sleepiness [25].

In addition, we collected information about the child's evening bedtime and wake-up time for weekdays and weekends during the past month. The average reported nighttime sleep (hereafter sleep duration) was calculated as the weighted average of weekday and weekend sleep durations using the formula: $[(\text{weekday sleep duration} \times 5) + (\text{weekend sleep duration} \times 2)]/7$.

2.2.3. Pubertal development

Our research team included a senior endocrinologist from Shanghai Children's Medical Center, who scored pubertal development per Tanner staging.

2.2.4. Child health-related conditions and socio-demographic questions

The socio-demographic information included: gender, age, family structure (single-parent family/nuclear family/extended family), maternal educational level (middle school and below/high school/university and above), household income (<1500/1500–2000/>2000 RMB/month; 1 RMB equals 0.16 USD or 0.15 Euro), residential area per capita (<15/15–25/>25 m²/cap), and chronic illnesses (asthma, otitis media, chronic allergic rhinitis, adenoid/tonsillar hypertrophy, attention deficit hyperactivity disorder, and atopic dermatitis).

2.3. Statistical analysis

Prior to inferential analyses, data were descriptively analyzed (not reported). Therefore, abnormally distributed data were reported by median and range and percentage for categorical variables. Logistic regression modeling was performed to estimate the strength of relations (expressed as odds ratios [ORs] and 95% confidence interval [CI]) between socio-demographics, family and child factors, sleep, and bed-sharing. In a first round of analyses, we investigated the relationship between socio-demographics and child factors with bed-sharing practice. To increase generalizability, as well as to enhance our understanding of bed-sharing practices, in a second round of analyses we adjusted for age, maternal education, and sex. Analyses were a posteriori stratified by gender. In a third round of analyses, the Mann–Whitney test and logistic regression analysis were applied to explore bed-sharing, sleep duration, and sleep problems. All analyses were performed using the Statistical Program for Social Sciences (SPSS) for Windows, version 17.0. Statistical significance was set at p -value < 0.05.

3. Results

The median age was 10.83 years (range: 9.42–12.92; 95% CI: 10.79–10.83) and boys accounted for 51.17% of the sample ($N = 1452$). In Table 1, basic information for the sample was presented. Of all

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