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Parent decision factors, safety strategies, and fears about infant sleep locations

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ABSTRACT

Infant sleep safety is a primary concern of parents. Infant sleep locations vary around the world. Purpose: This pilot study investigated the decision factors, fears, and safety strategies reported by parents internationally. Methods: participants (n = 49) recruited online from 10 countries completed an anonymous Internet survey in English and submitted a picture of the infant's primary nighttime sleep location. Pictures were coded into 'shared' (29%) or 'separate' (71%) sleep surfaces. Results: primary decision factors about infant sleep location were safety, comfort, family sleep quality, and overall ease. Parents maximized safety by providing a clear sleep surface, no blankets, no toys, sleep sack use, and a firm mattress. Different worries and fears emerged depending on the sleep surface. Conclusion: differences in the specific worries and strategies used by parents when deciding whether to share or not share a sleep surface with an infant may be used to tailor future interventions.

1. Introduction

There is great debate around the world between clinicians, policymakers, and parents about where infants are safest when asleep (Ball & Volpe, 2013; Bartick & Smith, 2014). This debate has been generated, in part, by improved science surrounding sleep-related infant death (Salm Ward & Balfour, 2015). Concurrently, a populist consumer movement has emerged that frequently conflicts with the scientific literature by promoting bed-sharing. Underpinning this movement is a parenting philosophy that suggests mothers and infants should maintain near continuous proximity after birth as popularized by terms such as the "fourth trimester" (Karp, 2010, 2012) and "attachment parenting" (Attachment Parenting International, 2015). Over time, studies in several countries have consistently found that a significant percentage of parents place sleeping infants in locations that expose infants to environmental hazards including the sharing of sleep surfaces with adults, placement to sleep on soft or uneven surfaces, and non-supine positioning (Ball & Volpe, 2013; Colson et al., 2005; Hauck, Singore, Fein, & Raju, 2008; Hauck & Tanabe, 2008; Tappin, Ecob, & Brooke, 2005; Vennemann et al., 2009). Recently, Batra et al. (2016) conducted nighttime video assessments of 160 infants in the United States. They found that at 1 month, 28% of infants slept in more than one location at night and that placement in the second location was on a non-recommended sleep surface (meaning not a firm, flat, separate place) for nearly all (91%) of those infants.

There is agreement across several countries that exposure to some environmental factors such as smoking, alcohol or other substances, prone sleep positioning, and sleeping on soft sleep surfaces are threats to infant health and safety (Academy of Breastfeeding Medicine Protocol Committee, 2008; Ministry of Health – Manatū Hauora, 2015; Moon & Task Force On Sudden Infant Death Syndrome, 2016; Public Health Agency of Canada, 2014; UNICEF United Kingdom, 2015). Perhaps the greatest debate is whether infants sleep safely when sharing a sleep surface with a parent. While the debate continues, every night around the world, parents make decisions about where to place their infant to sleep. Although there are some studies on these decision factors within individual countries such as the USA (Chianese, Ploof, Trovato, & Chang, 2009; Joyner, Oden, Ajao, & Moon, 2010), Canada (Eni, Phillips-Beck, & Mehta, 2014) and the UK (Rudzik & Ball, 2015), few studies examine which factors are common across multiple countries.

For example, Joyner et al. (2010) interviewed 83 low and middle class African-American mothers in the USA for reasons they choose to roomshare or bedshare. Major reasons why women choose to keep their infant within the mother's bedroom rather than in a separate room included space, convenience, and infant safety. Safety was the biggest factor when making decisions about the infant's sleep surface (i.e., separate or shared) followed by comfort, convenience, and space (Joyner et al.). Similarly, Eni et al. (2014) interviewed 65 Canadian First Nations women about breastfeeding determinants and found that all women who breastfed also bedshared. Women reported feeling more secure being close to the infant, that they felt a bedsharing

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sleeping arrangement helped reduce accidents such as falling asleep with the infant while sitting in a chair, and that they felt a greater sense of bonding (Eni et al.). In the UK, Rudzik and Ball's (2015) 7 focus groups of women with infants (n = 40) revealed that breastfeeding women used bedsharing to protect their own sleep.

While many studies investigate the prevalence of bedsharing and the characteristics of populations in different countries that chose to bedshare or roomshare, we did not find recent published studies that further investigated decision factors pertaining to infant sleep surface in Australia, Asia, Europe, or South America. Furthermore, we found no published studies that employed photography to observe infant sleep environments and only two articles that used video observations including one in a monitored laboratory (Volpe, Ball, & McKenna, 2013) and one observing the home environment (Batra et al., 2016).

1.1. Purpose and objectives

To being to fill these gaps, the purpose of our study was to describe where infants sleep at night around the world and the factors that influence parent's decisions. To achieve the stated purpose, the objectives of this study were to describe parent: 1) Decision factors influencing infant sleep location, 2) Worries and fears about infant sleep location, and 3) Strategies for maximizing sleep location safety.

1.2. Products in which infants are placed for sleep

Studies have identified that infants sleep in diverse places and, not uncommonly, in multiple locations at night (Ball & Volpe, 2013; Joyner et al., 2010). Irrespective of safety considerations, infant sleep locations that have been described in the literature and consumer product websites include, but are not limited, to bassinets, Moses baskets, cribs, co-sleepers (bedside and in-bed), play yards, couches, inclined sleepers, and adult beds (Table 1) (Chu, Hackett, & Kaur, 2015; Thompson & Moon, 2015). In another example, the indigenous Māori population of New Zealand are working with health care professionals to test the Wahakura and pēpi-pod® sleep environments (products placed in the adult bed that have sidewalls and are made of a firm woven material or plastic), which are believed to better represent the population's cultural and family values (Abel & Tipene-Leach, 2013).

Manufacturers of juvenile products also affect the global debate about infant sleep safety. The global baby care market, which is projected to grow to USD $66.8 billion by 2017 (Statista, 2015) is rapidly proliferating consumer products intended for infant sleep. Similarly, there is a commensurate increase in products that may not be intended infant sleep, but are being used for infant sleep including car seats, inclined swings, slings and wraps, hammocks, bouncers, and strollers (Table 1) (Batra, Midgett, & Moon, 2015; Kids in Danger, 2015; Shapiro-Mendoza et al., 2015).

Table 1
Examples of products used for infant sleep.

Product category
Adult bed
Bassinet
Basket (e.g., Moses basket)
Bouncer
Car seat
Co-sleeper (bedside)
Crib
Hammock
In-bed sleeper
Inclined sleeper
pēpi-pod®
Play yard
Sling
Stroller
Swing
Travel bed
Wahakura
Wrap

1.3. Factors affecting infant product markets and significance to nursing practice

Many factors affect whether a product is sold in a country. Factors such as global demographic changes, the flow of capital, technological progress, trade laws and international treaties can affect product availability in a given country (World Trade Organization, 2013). The ubiquity of transnational travel and migration of people (World Trade Organization, 2013) means that health care workers and researchers need more information about the sleep practices of parents and infants internationally in order to account for differences in behavior and to understand differences in parenting practices. Nurses and parents struggle to align safety guidelines with family culture and values, and researchers are challenged to build interventions that attend to the unique contexts of individual families (Ball & Volpe, 2013). In particular, nurses around the world may interact with families who are using products that are new on the market, may be minimally tested, and are not addressed by infant sleep safety policies. Nurses in these situations may need to make decisions about the safety of products they see being used in the home having manufacturer guidelines pertaining to correct assembly and use, but without clear guidance from professional health organizations. Our study seeks to link observational (photographic) infant sleep location data with parent decision factors so that researchers can begin to explore how to influence those decision factors to promote infant sleep safety in populations around the world.

2. Methods

This pilot study used a mixed-methods, exploratory, descriptive, non-experimental design.

2.1. Participant selection

A convenience sample of 49 parents was recruited through online posting. To be included, participants met the self-report criteria of being a caregiver of an infant between 0 and 12 months, able to read and write English, and access to an Internet connection that was capable of uploading a photograph. Participants were recruited on social media through extensive posting to Facebook, Twitter, and LinkedIn. Recruitment emails were distributed through nursing networks and listservs and to dozens of individual “mommy bloggers”. Specifically on social media, recruitment efforts were targeted to posting on mother/father/parents groups in individual countries using the county's name (e.g., Brazil) were targeted systematically by continent. Only sites utilizing English were used for recruitment purposes.

The 49 participants represented ten different countries and lived in the continents of Asia (n = 4), Europe (n = 4), North America (n = 38), Oceania (n = 2), and South America (n = 1). Three participants reported living in North America, but reported a different continent of origin. One participant reported living in Europe, but reported a different continent of origin. Relative to the infant, participants were either mothers (98%) or fathers (2%). Participants reported being married (88%), co-habiting (10%), or single (2%). The mean number of children reported by participants was 1.6 (±0.93), range 1 to 5. Average infant age at the time of data collection was 6.6 (±3.0), range 1 to 12 months. Report of type of infant feeding included breast milk only (43%), other food/milk/drink (33%), breast milk and formula (10%), baby food or mashed regular food (10%), and formula only (4%). Participants provided online consent, and the study was conducted with human subject's approval from the affiliated university's Institutional Review Board.