

Never Sleep with Baby? Or Keep Me Close But Keep Me Safe: Eliminating Inappropriate “Safe Infant Sleep” Rhetoric in the United States

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Abstract: Creating public health messages regarding how mothers should sleep close and safely with their babies is tricky and complex. It requires an appreciation of what exactly the term “sleeping with baby” and “co-sleeping” can mean. It also requires sensitivity to what parents will or can do if told emphatically “never sleep with your baby.” In the United States, well-intentioned public health messages from prominent government agencies about safe infant sleep have increasingly used language that equates “safe infant sleep” with the absence of the mother. Many messages seemingly imply that all forms of “co-sleeping” are dangerous and that those parents that practice it are acting irresponsibly. Messages such as “babies sleep safest alone” conflict with both laboratory and epidemiological findings as well as with recommendations from most medical organizations, including the American Academy of Pediatrics, who state that mothers and babies should sleep on separate surfaces close together in the same room. Moreover, studies reveal that breastfeeding and forms of co-sleeping, including both roomsharing and bedsharing, are functionally interdependent and that many mothers worldwide find that they can manage their own and their infant’s needs more easily by adopting at least intermittent bedsharing. Hence, simple, unqualified recommendations against ever bedsharing are not likely to be followed. According to recent studies the most effective public health recommendations are likely to be those that educate parents and facilitate parents in implementing bedsharing safeguards alongside their own choices. This approach does not exclude informing parents of what we know can be dangerous about some bedsharing practices, nor where and when it should be avoided altogether. Rather, it acknowledges that while separate surface co-sleeping in the form of roomsharing should always be recommended, nonetheless, many parents will appreciate and benefit from the opportunity to learn how to reduce the risks associated with bedsharing.

Keywords: Co-sleeping public health messages, bedsharing, breastfeeding, parental behavior and decision making.

INTRODUCTION

Mothers and other caregivers sleep in close proximity to infants (commonly referred to as “co-sleeping”) in almost all human cultures, and, although these infant sleep practices take a diverse array of forms, they are generally accepted as normative and safe [1, 2]. To be precise, “co-sleeping” should be defined as any situation in which a committed mother sleeps within sensory range of an infant (on the same or different surface) permitting mutual monitoring, sensory access and regulation [3]. In many societies in the US, Europe, Australia, New Zealand and elsewhere there is a contentious, ongoing debate regarding the relative benefits and detriments, safety and risk associated with one form of co-sleeping in which adults (usually the mother or parents) and infants share the same sleeping surface in an adult bed (i.e. bedsharing). Up until recently, there has been a uniquely “western” cultural trend emphasizing the importance of infant “independence” in conjunction with solitary infant sleep, particularly in the United States, that has relegated

“co-sleeping” practices to relative anonymity, obscurity, or, even, criminality [2, 4]. However, there is increasing recognition among scientists and the public alike that many millions of parents and infants have slept and continue to sleep together “in secret” despite whatever cultural and medical proscriptions to the contrary may exist [2]. For example, it is now known that nearly half of all breastfeeding mothers in the United States and Great Britain frequently, if not routinely, bring their baby to sleep with them for some or all of the night [4-7]. Despite fervent disagreements in many quarters about the safety of bedsharing and although it has taken nearly twenty years for many pediatric researchers to fully recognize and incorporate the cross-culturally and parochially common practice of co-sleeping into studies on infant health, there is now widespread recognition of the contribution made to infant well-being by nighttime parent-infant sleep proximity [e.g. 2, 8-10], particularly when associated with breastfeeding.

MOTHER-INFANT NIGHTTIME PROXIMITY AND BREASTFEEDING: MUTUALLY REGULATORY BEHAVIORS PROMOTING INFANT HEALTH

In a heretofore unprecedented acknowledgement of the importance of mother-infant nighttime proximity in promo-

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ting infant health and survival in the US, in 2005 the American Academy of Pediatrics (AAP) recommended that infants never sleep alone outside the proximity of an adult caregiver [9]. From a functional perspective the term “roomsharing”, a form of co-sleeping [11] draws attention away from who really provides the protection, which is usually the mother and/or father, rather than the four inert walls of the room. Indeed, the lowering of SIDS rates that separate surface co-sleeping offers are not generalized to the mere presence of other bodies, such as young siblings, in the infant’s room, as Mitchell and Thompson [12] pointed out almost a decade ago. Rather the protective effects, one can postulate, most likely involve ‘something’ that occurs specifically between the infant and the committed caregiver(s), such as, potentially, proactive mutual sensory exchanges that influence the infant’s sleep architecture and arousals in beneficial ways [13-15] and/or the simultaneous opportunity for the caregiver to monitor, detect and respond to infants needs, endangerments, or physiological crises [2].

Whether referred to as “co-sleeping” or “proximate sleep” (as the AAP prefers to call it, [9]) a variety of laboratory, home, and survey studies clearly demonstrate that breastfeeding and various forms of co-sleeping are functionally interdependent in at least three important ways: 1) the closer the mother sleeps to the baby during the night the more the number of breastfeeding sessions [16-19]; 2) to get more sleep and to placate or settle their infants the decision to breastfeed often lead mothers to adopt routine bedsharing for at least part of the night [4, 20-23] even where they never intended to do so [24, 25] (Fig. 1); and, finally, 3) compared with non-bedsharing, breastfeeding mothers bedsharing-

breastfeeding mothers breastfeed their infants for a greater number of months [4, 27].

It is well documented and widely accepted that breastfeeding provides a multitude of protective benefits to infant health and development. On a primary level, breastmilk confers a range of innate immunological agents, such as antimicrobial and complement proteins and enzymes, that protect the infant’s gastrointestinal tract and respiratory system from infection until the neonate immune system is functionally mature and efficient [26]. Breastmilk also delivers maternal secretory immunoglobulin A (sIgA) to the infant, allowing an inter-generational transfer of specific immune function, as infants gain acquired immune defenses reflective of maternal pathogen exposures and, hence, protection against likely antigenic challenges [27].

Although these immunological benefits likely evolved in more pathogen-dense settings than are often encountered today in many industrialized nations, it has been demonstrated that even in the US around 720 infants die each year solely because they were not breastfed [28]. Similarly, Forste *et al.* [29] demonstrated that breastfed infants were 80% less likely to die before age 1 than those who never breastfed, even controlling for birth weight. Forste *et al.* conclude, “Analyses of infant mortality indicated that breastfeeding accounts for the race difference in infant mortality in the United States as least as well as low birth weight does [29: pp. 291]”. These figures are perhaps less surprising when considering that breastfeeding has been shown to reduce the incidence of a range of diseases known to affect children worldwide, including respiratory infections, ear infections,

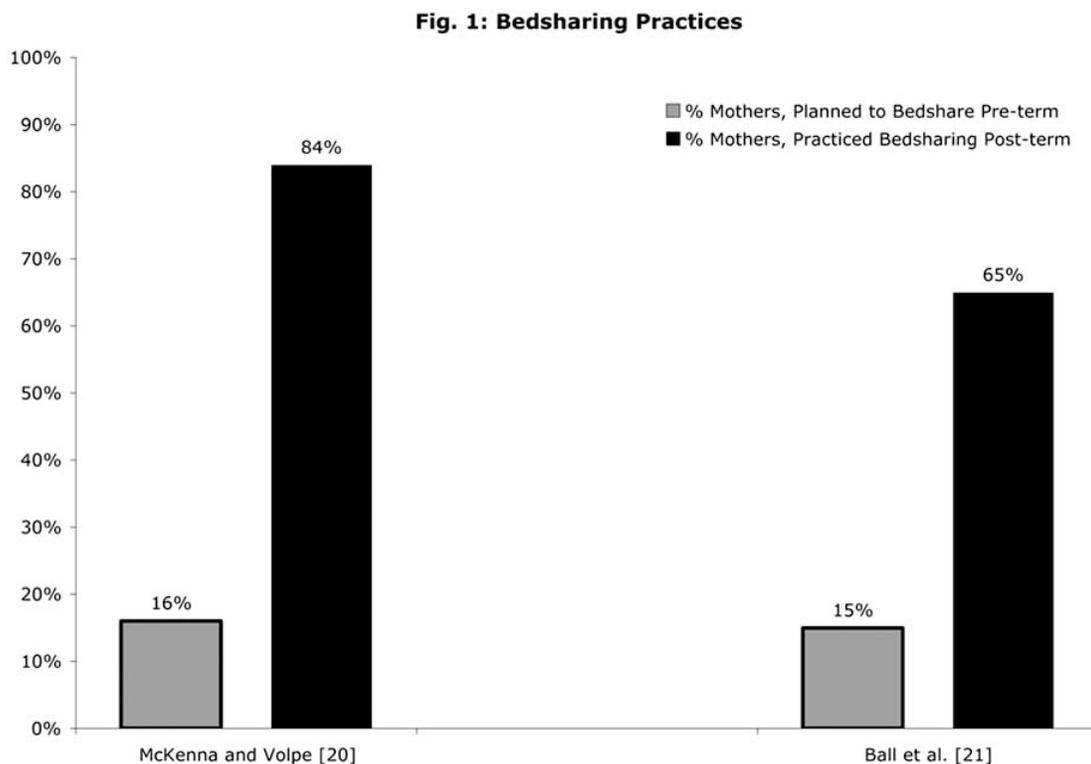


Fig. (1). Data from McKenna and Volpe [20] (n=200) and Ball *et al.* [21] (n=40). Comparison reflects percentage of mothers who planned to sleep with their babies before giving birth versus the percentage who actually bedshared, at least occasionally, in the months after parturition.

otitis media, and childhood cancers [30-32]. Data are also emerging to suggest that prolonged breastfeeding may lead to lower occurrence of allergy [33], autoimmune dysfunction, such as celiac disease [34], and insulin-dependent diabetes (Type 2) [35]. Although results are mixed [36], some evidence indicates that increased breastfeeding duration may decrease the likelihood of overweight and obesity [37].

Most pertinent to the subject at hand, Venneman *et al.* [38] recently demonstrated that infants who are formula fed are twice as likely to die of SIDS than breastfed infants based on a case control study of 333 SIDS cases compared to 998 aged matched controls in Germany, from 1998-2001, consistent with previously published reports [39]. While we are not aware of any studies which demonstrate that bedsharing, specifically, is absolutely critical for breastfeeding success, nearly half of all breastfeeding mothers in the United States and Great Britain regularly bring their babies to sleep with them for some part of the night [4-7] (Fig. 1). Along these lines, McCoy *et al.* [22] found that women who elect to breastfeed are twice as likely to sleep with their babies in the first month than mothers who bottle-feed. In a randomized, non-blinded trial, Ball and colleagues also showed that mother-infant sleep proximity and consequent ease of access to breastfeeding led to higher suckling frequency on the postnatal ward [18]. While the percentages of breastfeeding mothers who bedshare will vary from culture to culture, it is clear that breastfeeding and forms of co-sleeping, such as bedsharing, that privilege mother-infant nighttime proximity are mutually reinforcing. That breastfeeding alone reduces the risk of SIDS and, at the same time, increases the chances that mothers will adopt at least intermittent bedsharing, which, in turn, further reinforces and increases breastfeeding, complicates singular and unqualified recommendations against the practice of bedsharing among nonsmoking, non-drug-using mothers [2].

Much of the ongoing disagreements regarding the appropriateness of bedsharing and whether it should be outrightly discouraged as a practice in some contemporary societies stem from the mixed results of case control, epidemiological studies in identifying the circumstances under which bedsharing (or other forms of same surface co-sleeping) represent a risk factor for Sudden Infant Death Syndrome (SIDS) and/or unexpected infant death (SUID). Consequently, there are contrasting views on how those risks can be best communicated to parents. Certain studies that have documented increased risks for bedsharing have operationalized inconsistent definitions of bedsharing (e.g. categorizing deaths on sofas or recliners as bedsharing deaths) and have lacked relevant details of the circumstances within which infants die [40-42]. Conversely, studies that include appropriate covariates and confounders, such as specific details on infant sleep location, parental alcohol, tobacco, or drug use, have shown slightly elevated [10, 43, 44] or no difference [8, 45] in risk for bedsharing infants of breastfeeding, non-smoking, unintoxicated mothers.

“SLEEPING WITH BABY” IS NOT, AFTER ALL, CONTROVERSIAL?

Despite dissention over the issue of bedsharing among researchers invested in issues of infant sleep safety and

SIDS/SUID prevention, we suggest there is a range of relevant, seminal points on which most interested parties will agree. For example, given common North American and European sleep environments, bedsharing should probably not be generically recommended to any given population or sub-group in these societies because of the diverse ways in which it is practiced and the complex factors that coalesce to determine its relative safety or risk. Scientific evidence demonstrates that we should recommend against dangerous forms of co-sleeping, such as those that take place on waterbeds, recliners, couches or sofas, or in small cramped spaces [45-47]. Parents should be generally counseled against same-surface co-sleeping practices that occur under circumstances in which other children or unrelated adults are included [47, 48], where pre-or post natal smoking and or drug and alcohol use is involved [8, 10, 46], or where any other known adverse factors related to soft bedding or dangerous furniture arrangements are present [8, 47, 49]. Moreover, while there may never be agreement between all interested constituencies over whether any kind of bedsharing can be made safe [e.g. 50, 51], to our knowledge, all groups involved in researching these issues acknowledge the importance of making a general recommendation in favor of *co-sleeping* where mothers and infants sleep in relative proximity in the same room at night, though not specifically on the same surface (AAP’s “roomsharing”, [9]).

GETTING THE MESSAGE AND RHETORIC RIGHT: WE ARE NOT THERE YET

Despite what we feel is general agreement on these issues, this pragmatic framework is not being translated appropriately for public consumption in the US and is failing to deliver the best possible advice to parents. For example, three major public health campaigns, currently underway in the US, have adopted the following slogans: “Babies sleep safest alone.” New York State: Office of Children and Family Services, [52]; “For you to rest easy, your baby must rest alone.” Philadelphia (PA) Department of Human Services, [53, 54]; “Never sleep with your baby. Not even for a moment.” Indiana Department of Child Services, [55]. In New York’s campaign, even though brochures and posters acknowledge in fine print, relative to the bold yellow “Babies sleep safest alone” headline, that roomsharing is recommended, it is not mentioned in either the TV or radio ads produced by this campaign [52]. The life-saving role of breastfeeding, associated with nighttime mother-infant proximity, is in no sense highlighted or even mentioned in the various recorded media presentations. In the Philadelphia campaign, brochures include multiple large headlines dictating that “Sleeping Safely” means infants are put to sleep alone. Similar to the New York handouts, the AAP’s recommendation is relegated to the brochure’s second page, in small print in the bottom corner [54].

Finally, during the last five months of 2009 the state of Indiana launched a statewide anti-co-sleeping campaign, which includes a video dramatization that airs on local television channels around dinnertime and other popular family viewing periods. The video opens with a scene of a mother and her partially obstructed infant sleeping on a couch being awakened by a proud father (out of view) filming the scene of his wife and baby and whose voice we

hear speaking softly to them while he films and approaches. The video captures the wife awakening to the horrifying discovery that her baby is not breathing. As she starts screaming for the husband to call 911 the father stammers in disbelief into the phone that the baby is not breathing as he desperately seeks aid on the phone as his wife continues to scream and cry, "She's not breathing, she's not breathing". The screen lingers with her sobs and cries then it darkens, with white text against a black background, presenting stark statistics about how many infants die each year in "unsafe sleep environments" followed by a text message saying: "Never sleep with your baby. Not even for a moment". The State of Indiana Department of Child Services, responsible for these commercials, also emphasizes the following take home message in large, emboldened text on their "safe sleep" website, "Remember: Put Your Baby to Bed Alone" [55].

Undoubtedly, these assumedly well-intentioned, if misguided, campaigns are aimed at reducing infant deaths that occur under circumstances of unsafe same surface co-sleeping, including those that take place when bedsharing is practiced irresponsibly. However, public health campaigns that frame their messages around infants sleeping *alone* are not consistent with scientific evidence, evolutionary principles, or human biology. Indeed, there is a certain level of inherent contradiction in this approach. On one hand, it seems that those spearheading these safe infant sleep campaigns in the US assume that the general public must be proffered easily intelligible, simplistic recommendations; and, yet, on the other hand, they expect them, on their own, to be able to reconcile headlines emphasizing that "infants sleep best alone" with the fact that babies sleep most safely when they are near their mothers (or caregivers). Unintentionally, these campaigns have created a scenario in which they are proffering a message (infants sleep best alone) that may increase the prevalence of a known risk factor (solitary infant sleep) for the very thing they are attempting to prevent (infant deaths) [8, 10, 12]. It seems to us that even the most ardent bedsharing opponents would see the inconsistency and folly in trading one SIDS/SUID risk factor (unsafe same surface co-sleeping) for another (solitary infant sleep). Future research should aim towards investigating the behavioral effects of public health messages that use ambiguous, simple phrases regarding infant sleep location, such as "babies sleep safest alone" or "never sleep with your baby", to fully assess the extent to which they may lead parents to practice solitary infant sleep, as we suggest here.

WHAT PUBLIC HEALTH STRATEGIES WILL PROVE THE MOST EFFECTIVE?

"Parental motivations to bed share outweighed the concerns and the warnings of [clinicians]. An understanding of parents' perspectives on bed sharing should inform counseling to promote safe sleeping practices [56: pp. 26]".

Exactly how parents will interact with and respond to their infants, especially in regards to something as complex and controversial as where infants end up sleeping in the middle of the night, is subject to a wide variety of sometimes quickly shifting and multi-faceted factors, as most parents discover and many survey studies reveal [5-8, 25, 55]. In

addition to familial belief systems and general cultural ideologies [57], human biology (e.g. infant and parental temperaments and basic nutritional and physiological needs, including the ability of many parents to get more sleep by bedsharing) plays an exceedingly important role, too [2, 58]. In formulating public health recommendations and in providing the most useful safe infant sleep information, especially as regards bedsharing, those approaches that will reach the most number of caregivers will likely reflect not just what professionals want but what parents want, think and feel, emotionally. Indeed, as argued by Sackett, one of the essential components of "evidence based medicine" is the practical integration of patient values and beliefs into clinician advice [59, 60]. Accordingly, recommendations are likely to be most successful when they resonate with parents' every day experiences, which in this context include parental feelings about how they want to care for infants and the parent-child behaviors and interactions that transpire in real world situations. Parental observations of how they and their infants respond to clinical or public health recommendations are valid and crucial. Simple top-down declarations that mothers and fathers should never sleep with their infants are not, in our view, either appropriate or sufficient and are unlikely ever to be widely effective, as discussed in more detail elsewhere [2, 4].

Several recent studies provide a beginning point for understanding what parents believe and what they are interested in hearing, both of which are highly relevant to the success of public safety campaigns regarding bedsharing. For example, Ateah and Hamelin [61] recently found that 89% of their participants associated bedsharing with increased infant risk but 72% also reported occasional to regular bedsharing with their infants. The authors observe that regardless of real or perceived risks, mothers are still bedsharing with their infants.

Chianese *et al.* [56] conducted one of the most detailed studies aimed at understanding the parental motivations of bedsharing caregivers, focusing on a relatively impoverished urban sample in the US. Many of the participants identified potential risks associated with bedsharing, in particular the risk of overlaying or smothering from blankets or pillows. Despite these potential risks, as was also true in Ateah and Hamelin [61], the researchers found that caregivers identified a list of primary reasons given for bedsharing: better caregiver and infant sleep, convenience, tradition, child safety, and parent and child emotional needs. Notably, parental motivations to bedshare outweighed any perceived risk, and, "Many parents expressed their belief that bedsharing is protective against SIDS because the parents would immediately know if the baby stopped breathing [56 pp. 29]". Other protective factors identified by parents included safety from external threats such as fires or aggressive siblings. Participants who reported having had a conversation with their healthcare provider regarding bedsharing recalled that they were advised not to bedshare but, if they did, to avoid extra pillows and to place the infant in a supine position.

Participants reported not being influenced by the recommendations against bedsharing but generally found the risk reduction suggestions helpful. As the research team put it, "Common to all groups was the finding that clinicians'

advice against bedsharing did not influence parents' decision, but advice to increase safety would be appreciated [56 pp. 26]".

Interestingly, reasons for bedsharing given by this poor, urban sample are remarkably similar to those provided in another study by a selected middle to high socio-economic sub-group of mostly breastfeeding mothers (93% of the sample) from a variety of industrialized countries including the US, Canada, Australia, New Zealand and Great Britain [24]. McKenna and Volpe [24] conducted an internet-based study of 200 caregivers to determine parental beliefs, experiences, and evaluations of co-sleeping practices. Many parents reported that bedsharing evolved as a natural response to nighttime feedings regardless of their initial intentions to have their infant sleep separately. Of the bedsharing mothers in the sample, only 15.9% had intended to bedshare while the remaining 84.1% had arrived at bedsharing despite non-bedsharing plans (Fig. 1). The primary motivating factors to bedshare reported were ease of breastfeeding (25.4%) (see also [23]) and increase of parental sleep (26%). Additional factors reported were the promotion of parent-infant bonding (9.2%) and the reduction of infant crying (7.7%).

The majority of the respondents also reported that bedsharing was a highly personal choice that reflected their strong emotional attachment to and desire to bond further with their infant. They described a strong instinct to sleep with their infants as a natural way of providing comfort, support and love. While the desire to express parental love through same surface co-sleeping is not exactly a factor that has been included in case control studies as a potentially relevant variable that confounds relative risk, or as one of the reasons why parents bedshare in the first place, its effects may be great, particularly as regards the likelihood that stringent proscriptions against bedsharing will be followed. Consider comments made by a caseworker for New York's Office of Children and Family Services (OCFS), a self described "foot soldier" in the state's anti-bedsharing campaign [52, 62], "Because I have two perspectives on bedsharing—that of an insider because of my job, and that of an outsider because of the choices I have made in my home—I see that 'Babies Sleep Safest Alone' opposes not only my values, but the values of the very agency that created the campaign [62: pp. 48]".

Angie notes that by calling any and all bedsharing "extremely dangerous" the OCFS dictates "that the practice should be viewed as a threat and advised against, regardless of circumstances [62: pp. 48]". He goes on to argue, "This blanket approach is out of step with a belief commonly held in social services that all families are unique, presenting different situations and strengths [62: pp. 48]". He highlights that breastfeeding improves infant health and safety while parental exhaustion, obesity, and drug use put babies at risk. In terms of interventions he argues, "The logic is simple... Changes that are the least disruptive preserve the integrity of a family and are more likely to be followed [62: pp. 49]". He points out that parents can be taught relatively simple but important actions concerning bedsharing safety that can make a difference. In his view education is a more effective

strategy than "asking mom, dad and baby to stop bedsharing, buy a crib, and change their entire nighttime routine" which he suggests "is highly intrusive, and is a request more likely to be ignored or only appear to be followed—for instance, by buying a crib and not using it [62: pp. 49]". Although this represents, of course, but one anecdotal example, it brings to bear a variety of troublesome issues endemic to anti-bedsharing recommendations that do not consider the underlying reasons why bedsharing is increasingly entrenched as a desirable parenting behavior (among those who practice it). In failing to address every day realities of evolved human biology, parental and infant emotions, individual values and beliefs, and inter-cultural behavioral variation general condemnations of bedsharing are likely to fall short and fail to make their intended impact on infant well-being.

CONCLUSION

Although the safety of bedsharing is frequently debated, particularly in the US, a range of scientific data indicate that mother-infant sleep proximity and breastfeeding are closely intertwined behaviors and separate surface co-sleeping reduces the risks for SIDS when practiced safely. However, inaccurate and unqualified phrases used, ostensibly, to promote "safe infant sleep", such as "never sleep with your baby", or "babies sleep best alone", are likely to give parents the wrong impression as to the most optimal, health promoting infant sleep practices. In reality these slogans collapse remarkably different forms of co-sleeping, varying in degrees of safety and relative benefit, into a catchall category to be avoided by parents. Moreover, insofar as "sleeping with your baby" also encompasses all forms of same surface sleeping arrangements and, also, separate surface "proximate" co-sleeping behaviors that function to save infant lives, we argue that this phrase or premise should never be used as a proxy for dangerous sleep practices.

One specific step toward developing more effective public health campaigns and medical advice that are likely to be heeded by parents in their day-to-day lives is to move beyond the exclusive use of case-control studies as basis for making recommendations regarding infant sleep practices. Parental values, underlying biological and emotional predispositions of mothers and infants, infant characteristics and needs for contact and proximity, parental needs for sleep, feeding methods (breast or bottle), and family belief systems intersect in powerful ways to determine what parents actually do, what parental decisions make sense, and whether or not those particular decisions protect or endanger the infant. Indeed, in his definition of evidence based medicine, Sackett [60] suggests that patient values, clinical exceptions to recommendations, and input from those most affected by recommendations are critical to the effectiveness of public health approaches. A host of emerging data, discussed above, suggest that for a variety of legitimate biological, cultural, and personal reasons generic recommendations against bedsharing under all circumstances are likely to be modified in practice or outrightly ignored by many parents, who, along with their infants, would be better served by advice on how to reduce or eliminate modifiable risk factors in the bedsharing environment, should they practice it, even occasionally.

Still, regardless of one's position on bedsharing, seminal, complementary findings from a variety of research fields can be configured and reconciled such that we can create effective public health messages that maintain the integrity of parental rights, emphasize the importance of breastfeeding for maternal and infant health, and clarify the importance of mothers and infants sleeping close to one another on separate surfaces in the same room. We can make better efforts to ensure that the most up-to-date scientific findings, using the principles of evidence based medicine, are properly translated into public health messages and medical recommendations in order to maximize our collective efforts towards improving infant well-being and decreasing infant deaths.

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