Journal of Experimental Research

March 2018, Vol 6 No 1

Email: editorinchief.erjournal@gmail.com editorialsecretary.erjournal@gmail.com

Received: *August 2017*

Accepted for Publication: *Feb., 2018*

Pre- Sleep Crying In Infants: The Perception Of Parents In The South Eastern Region Of Nigeria.

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Abstract:

Crying describes a category of behavioral states and serves many purposes in infants, especially to shut out disturbing stimuli and it is of etiologic significance for eliciting appropriate care for infants. Children are usually unhappy about going to bed and sometimes react to sleepiness by crying. Therefore, they need sleep training in order to transition successfully to sleeping on their own. Sleep is important for both parents and their babies and serious consequences can arise from parental *chronic* sleep deprivation as a result of the infant's inability to fall asleep his own. More efforts are required to create awareness about appropriate care of the crying infant and correct any harmful practices in our environment. This was a hospital based study carried out in the infant immunization clinics of Enugu State University Teaching Hospital Enugu over a six month period from October 2016 to March 2017. A total of five hundred and eleven respondents participated in the study. Among the respondents, 92.6% had experienced pre-sleep cry in their children. Seventy four percent would respond to the crying infant adjusting to sleeping alone by soothing and cuddling, 1.5% would give sedatives, while 0.6% would ignore the infant completely. We recommend that more efforts should be channeled towards counselling parents and caregivers about effective sleep training techniques so they can make informed choices and reduce the risk of future complications related to poor sleep training techniques.

Keywords: pre-sleep crying, infants, sleep training, Nigeria

INTRODUCTION

Crying describes a category of behavioral states and serves many purposes in infants, especially to shut out painful or disturbing stimuli (Brazelton, 1999). It's also a social signal which affects the parents' response to the infant and the developing parent-infant relationship (Benson and Haith, 2010). Therefore it is of etiologic significance for eliciting appropriate care for the infant (Brazelton, 1999).

Sleep problems differ in young children and adults (Ferber, 2006). Children are usually unhappy about going to bed and sometimes react to sleepiness by crying, unlike adults who complain about not getting enough sleep (Ferber, 2006). Therefore, they need sleep training in order to transition successfully to sleeping on their own.

Sleep training is the process of helping a baby learn to fall asleep on his own and stay asleep through the night (Baby Center Medical Advisory Board, 2016b). On the average this starts between 4 and 6 months, by which time babies have typically started to develop a regular sleep-wake cycle and have stopped feeding frequently at night (Baby Center Medical Advisory Board, 2016b). There are many approaches to sleep training such as the Sears method (Sears et al. 2005) and the "Cry it out" method (Baby Center Medical Advisory Board, 2016b). The Sears method (Sears et al. 2005) involves quickly responding to the needs of babies. The advocates of this method prefer a 'no-tears' approach and suggest that "cry it out" techniques can result in negative associations with bedtime and sleep that could last a lifetime (Sears et al. 2005). However, several sleep experts disagree with this position (Baby Center Medical Advisory Board, 2016b) and the most common approach in developed countries is the "Cry it out" method. The goal of this sleep training method is not to ignore the crying child, rather the cry is viewed as an inevitable side effect as the infant adjusts to sleeping on his own (Baby Center Medical Advisory Board, 2016a).

However, this cry it out method is a western solution to the dissolution of extended family life in the 20th century and is viewed as inhuman in traditional African societies where the approach to sleep training is different (Narvaez, 2011). In such societies, crying is

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essentially recognized as a sign that something is wrong with the baby and so should not be allowed to cry. The approach to sleep training is usually to breast feed, soothe and cuddle, similar to the Sears method. The extended family system provides close relatives like mothers-in-law, cousins, and aunties to help out during this trying period. However, changing demographics and urbanization have limited the availability of such family members to offer this support and parents may engage in harmful practices to cope with the pressure.

This period of crying before sleep or "pre-sleep crying" can be a source of distress to parents and other caregivers. Sleep is important for both parents and their babies. Serious consequences can arise from parental c*hronic* sleep deprivation as a result of the infant's inability to fall asleep on his own (Callahan, 2015). Studies have demonstrated the association between infant sleep problems and maternal depression (Bayer et al. 2007; Martin et al. 2007; Wake et al. 2006). For instance, mothers of infants with sleep problems are at higher risk of postpartum depression with approximately 10-15% of U.S. mothers reported being depressed during the first year of their baby's life (Barclay, 2008). In addition, infants of depressed mothers had less secure attachment and behavioral problems particularly issues with eating, sleeping, temper tantrums, and separation difficulties (Martins and Gaffan, 2000; Murray and Cooper, 1997; Essex et al. 2002; Murray et al. 2011). Increased depression and anger towards these infants have also been documented amongst fathers (Cook et al. 2017). Furthermore, desperate parents seeking a quick solution to their baby's sleep issues resort to medications such as antihistamines and benzodiazepines with adverse consequences. The case is now being made that misuse of pharmaceuticals, over-the-counter medications and other types of drugs and alcohol on children should be considered a form of child abuse (Yin, 2010).

This study aimed to examine patterns, beliefs, and attitudes regarding the responses of caregivers to the crying child adjusting to sleeping on his own. It is hoped that the findings of this study will create more awareness about appropriate care of the crying infant and correct any harmful practices in our environment.

MATERIALS AND METHODS

Study Area

This was a hospital based study carried out in the infant immunization clinics of Enugu State University Teaching Hospital Enugu, over a six month period from October 2016 to March 2017. The hospital is a tertiary health facility situated in Enugu, the capital city of Enugu State, South east Nigeria. It is located on latitude $6^{o}27^{'}$N and $7^{o}30^{'}$E (Enugu, 2017). The city has a population of 722,664 according to 2006 Nigerian census (Enugu, 2017). The inhabitants are mainly Igbos and Christianity is the most popular religion. The infant immunization unit offers routine immunization services as contained in the National Programme on Immunization (NPI) for children aged 0-24 months. The unit runs 3 immunization clinics in a week. Other activities of the clinics include growth monitoring, general health education on infant feeding especially breast feeding, Oral Rehydration Therapy (ORT) and cord care. An average of 1044 caregiver – child-dyads attend the immunization clinics every month.

Study design

This cross-sectional descriptive and analytical study was carried out among mothers and care givers of babies aged 0-24 months attending infant welfare clinics for routine immunization. Structured interviewer administered questionnaires were used to interview the mothers consecutively during the immunization clinics. Written and informed consent was obtained from each respondent prior to the interview. All interviews were administered by pre-trained research assistants.

The following maternal demographic information was obtained; age of mothers, tribe, religion and number of children. The socioeconomic class of the respondents was stratified into low, middle and upper socioeconomic class using Oyedeji's socioeconomic classification (Oyedeji, 1985). Furthermore, inquiries were made on whether or not the respondents had heard about or experienced pre-sleep crying in their children, what they thought was responsible for it and various actions taken by these mothers when they experienced pre-sleep crying in their children.

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Data analysis

Data cleaning was done after each day's interview and where ambiguity existed, the research assistant involved was called for clarification. Data was collated and analyzed using SPSS version 20. Results were presented in tables using percentages, proportions and 95% confidence interval where appropriate. Statistical significance was set at P-value < 0.05.

RESULTS

A total of five hundred and eleven (511) respondents participated in the study, 78.3% were females and 21.7% males. Forty-five percent of the respondents were aged between 31-35years and 53.0% had nursed 1-3 children. Majority of respondents were Christians (92.6%) of Igbo ethnicity (99.6%) and belonged to the upper socioeconomic class (70.6%), Table 1.

Socio-demographic profile of respondents

	Frequency	Percent
Age group		
<25	28	5.5
26 - 30	89	17.4
31 - 35	230	45.0
36 - 40	125	24.5
>40	39	7.6
Sex		
Male	111	21.7
Female	400	78.3
Number of children		
None	35	6.8
1 - 3	271	53.0
4 - 6	184	36.0
>6	21	4.1
Socio-economic class		
Lower	30	5.9
Middle	120	23.5
Upper	361	70.6

Among the respondents, 92.6% had experienced pre-sleep crying in their children compared to a very small proportion of 7.4% who had no experience. About 2/3rd (71.8%) of the respondents believed that pre- sleep cry is a normal phenomenon in infants. For those who believed that this is normal, their major sources of information were from family members (16.5%), Doctors (10.4%), and Nurses (3.4%).

About the perceived causes of pre sleep crying, 46% of the respondents believed that it was caused by sickness. Table 2 shows other perceived causes of pre-sleep crying in infants.

Table 2: Perceived causes of pre-sleep crying in infants

	Frequency	Percent
No comment	17	16.0
sign of sickness	46	43.4
sign of hunger	16	15.1
sign of stubbornness	5	4.7
sign of impending danger/death	2	1.9
Others	20	18.9
Total	106	100.0

Care givers response to children exhibiting pre-sleep crying varied as shown in table 3. Seventy four percent would resort to soothing and cuddling, 13.5% would feed the child, while a very small fraction of 0.6% would ignore the crying child adjusting to sleeping alone.

Table 3 Caregivers' response to children exhibiting pre-sleep cry.

	Frequency	Percent
Soothe and cuddle	350	74.0
Ignore	3	0.6
Give sedative	7	1.5
Feed	64	13.5
Others	49	10.4
Total	473	100.0

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As a major source of worry to the respondents in this study, majority (75.1%) complained about pre-sleep cry to a doctor and were told that it is a normal phenomenon by 57.5% of the doctors. About 2/3rd (65.4%) of the respondents believed the pre-sleep cry is beneficial compared to 34.6% who believed otherwise. Most of the enumerated beneficial effects include; helps babies to sleep better (70.6%) and lung exercise (15.6%).

There was a significant relationship between the perception of pre-sleep crying as a normal phenomenon and the gender (p= 0.010) and the age (p=0.022) of the respondents. However, there was no significant association with the socioeconomic class, number of children and the ethnicity of the respondents (Table 4).

Table 4: Relationship between normalcy of pre-sleep crying and selected demographics.

	Do you think this is normal			
	Yes	**No**	χ^2	**P value**
Age group				
<25	13 (56.5)	10 (43.5)	11.435	0.022
26 – 30	51 (70.8)	21 (29.2)		
31 – 35	182 (82.7)	38 (17.3)		
36 – 40	93 (77.5)	27 (22.5)		
>40	28 (73.7)	10 (26.3)		
Gender				
Male	68 (68.0)	32 (32.0)	6.707	0.010
Female	299 (80.2)	74 (19.8)		
Number of children				
None	23 (79.3)	6 (20.7)	3.570	0.312
1 – 3	184 (74.2)	64 (25.8)		
4 – 6	145 (81.5)	33 (18.5)		
>6	15 (83.3)	3 (16.7)		
Socio-economic class				
Lower	18 (75.0)	6 (25.0)	1.278	0.528
Middle	92 (81.4)	21 (18.6)		
Upper	257 (76.5)	79 (23.5)		

DISCUSSION

Our study showed that pre-sleep crying is a very common phenomenon among infants in South Eastern Nigeria and majority of the infant caregivers perceived it as normal. This is in keeping with the position of most experts and researchers who believe that crying is a common response of healthy infants to different stimuli **(**Benson and Haith, 2010; Brazelton, 1999).

The predominant care-giver's response to pre-sleep crying in the present study was to soothe and cuddle and this is in consonance with

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the well-studied Sears method which advocates quick response to baby's need (Sears et al. 2005). Normally the extended family setting in the study environment has offers some degree of relief as grandmothers and other family members are always around to offer some help. However industrialization and urbanization are causing a shift from the extended family system towards the independent family system (Gugler and Flanagan, 1978). In addition, there are increasing time challenges for women who have to combine their professional careers and care of the family. These factors lead desperate parents seeking a quick solution to their baby's sleep issues resort to some harmful practices like the use of sedatives or completely ignoring the cries as reported by few respondents in this study.

The use of sedatives as a solution to pre-sleep crying is a potentially harmful practice. Wilson and Afamefuna (1986) identified the widespread use of sedatives, particularly promethazine (Phenergan) to sedate children in day-care centers in Nigeria. In late 2004, a "boxed warning" was added to the labeling for promethazine hydrochloride (Phenergan), including a contraindication for use in children less than two years of age and that it be used with caution in children two years of age or older because of the potential for fatal respiratory depression (Starke et al. 2005). The hormone Melatonin is a popular sleeping drug for adults which is not registered for use in children in anywhere in the world. It is being given by an increasing number of parents to their children (Kennaway, 2015). However it has been suggested that providing melatonin supplements to children may result in serious side effects in multiple physiological systems when the children are older.

Completely ignoring the crying infant is also potentially dangerous. It has been suggested that unattended extreme crying bouts of 30 minutes or more could be damaging to babies brains because high levels of the stress hormone cortisol develop in babies when no one responds to their cries (Leach, 2010). Chetty et al (2014) demonstrated that cortisol release from chronic stress generates more myelin-producing cells and fewer neurons than normal. This results in an excess of myelin in some areas of the brain and this can lead to the higher probability of attention deficit hyperactivity disorder (ADHD), poor academic performance and anti-social tendencies (Narvaez, 2011).

This study also revealed a significant relationship between the listener characteristics of age and sex with cry perception. Caregivers of increasing age and female gender were more likely to view pre-sleep crying as normal or less aversive. This is consistent with listener characteristics that impact on cry perception described by Benson and Haith (2010).

The major source of information about pre-sleep crying as a normal phenomenon in infants came from family members with no formal counselling on sleep training methods. This underscores the need to include talks on sleep training during antenatal care visits in Nigeria. These talks should provide expert advice on sleep training and access to support groups when needed. Fathers have been shown in this study to be more aversive to crying infants, therefore their participation in these antenatal classes should help reduce the increased depression and anger towards these infants whilst also making them more supportive spouses. Similarly, Fletcher et al (2004) in Australia reported that fathers felt less well prepared for the relationship and lifestyle changes accompanying the arrival of a new baby and recommended reviewing the curriculum of antenatal classes to incorporate more emphasis on lifestyle changes.

According to the task force organized by the American Academy of Sleep Medicine to assess the various sleep training techniques, almost all of them are effective. However, families need to choose a plan in which they can be totally consistent, as that seems to be the key to success (Mindell et al. 2009).

Therefore, efforts need to be channeled towards counselling parents and caregivers about effective sleep training techniques so they can make informed choices and reduce the risk of future complications related to poor sleep training techniques.

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