

MOTHERS' PERCEPTION OF EXCESSIVE CRYING IN INFANCY IN SOUTH EASTERN NIGERIA

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ABSTRACT

Background: Excessive infant crying, though usually benign, can be very troublesome to parents with unwanted consequences on the child. Previous reports had shown cultural and racial differences in its perception by mothers. We undertook this study to determine the prevalence of excessive crying in our area of practice and also determine associated factors.

Method: This was a cross sectional, questionnaire based descriptive study on mothers' perception of their infants' crying. Subjects were mother/ infant pairs attending the well baby clinics at the Institute of Child Health, University of Nigeria Teaching Hospital, Enugu, Mother of Christ Specialist Hospital, Enugu and the Ebonyi State University Teaching Hospital, Abakiliki.

Result: Four hundred and eighty mother/ infant pairs participated in the study. Seven point nine percent of the mothers reported excessive crying in their infants. There was no significant diurnal variation in the rate of excessive crying among these infants. Educated mothers ($P = 0.008$) reported excessive crying less frequently than the uneducated ones. Other maternal and infants demographic factors did not have any influence on mothers' perception of excessive crying in their infants.

Conclusion: Excessive crying among infants is more commonly perceived by uneducated mothers. This group should be identified and counselled about excessive crying to prevent untoward consequences.

Key Words: Excessive infant crying, mothers perception

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INTRODUCTION

Excessive crying in infancy otherwise called infantile colic is a relatively common problem worldwide, with a prevalence ranging from 3-30%.^{1,3} It tends to peak by the third month and resolves by the end of the first year. Its aetiology is unknown and its' outcome for the baby is largely benign. However, recent research findings have disputed this, causally linking it to a variety of disorders including cognitive problems later in childhood.^{4,5} Its importance is linked to the fact that it can create a disharmonious parent infant relationship, leading to child abuse. Efforts at calming such crying babies could result in prone sleeping and shaking.^{1,6} Such practises may be harmful to the infant. It also warrants attention because it is costly and takes up a lot of physicians' time.⁷ There are scant reports emanating from Africa on this relatively common problem. We undertook this study in our area of practice because the prevalence and perception of excessive crying vary along racial, cultural and environmental divide.¹

SUBJECTS AND METHODS

Study design

This cross-sectional descriptive study was carried out between March and May 2005 among mother/ infant pairs attending the well baby clinics at the Institute of Child Health, University of Nigeria Teaching Hospital (ICH-UNTH), Mother of Christ Specialist Hospital (MCSH) both in Enugu, and the Ebonyi State University Teaching Hospital (EBSUTH), Abakiliki. These centres were chosen both because they enjoy large patronage and that the authors had working interest in them. Enugu is the capital of Enugu State while Abakiliki is the capital of Ebonyi State, both in South East of Nigeria. The population of Enugu and Abakiliki are 308, 200 and 235,000 respectively. The inhabitants are mainly civil servants and artisans.

Sample size and sampling technique

Literature search showed no local prevalence rates. We therefore assumed a population prevalence rate of excessive crying to be 50% to make room for the widest variance possible. Using the formulae for sample size determination ($N = Z^2PQ/d^2$), a sample size of 382 was obtained. This was increased to 500 to make room for attrition and to increase the validity of the findings. The mother/infant pairs were recruited consecutively as they attended clinics at the 3 sites

until the sample size was obtained. The 3 sites contributed 215, 181 and 114 from ICH-UNTH, MCSH, and EBSUTH respectively.

Subjects

Mother/infant pairs with children aged 0-12 months that presented for immunization and/or growth monitoring at the clinics during the study period who met the inclusion criteria were recruited. Each mother gave informed consent. Inclusion criteria were: Mothers who had singletons, whose children were 12 months old or less, were delivered full-term, and were not admitted into the newborn special care unit for any reason. Children with identifiable chronic conditions like congenital heart disease, cerebral palsy or oro-facial anomaly were excluded.

Study tool

The study tool was a pre-tested, interviewer-administered questionnaire. Demographic information including maternal age, highest educational attainment, occupation, parity (those with 2 or more children were classified as experienced while, those with only one were classified as “inexperienced”), and mode of delivery, were documented. Also documented were child's sex and age. Excessive crying was simply defined based on maternal perception and response to the question whether the child cries excessively or not. The questionnaire also documented whether the infant was “easily consolable” or not when crying. Both questions were criteria used in assessing excessive infant crying in other reports.²⁻³ We also documented when the infants cried most (time divided equally 6 hourly 6am-12noon, 12noon-6pm, 6pm-12midnight and 12midnight-6am). The questionnaire also documented where the infants slept (with their mothers or separate from mothers).

Ethical approval

The Ethical Committees of the University of Nigeria Teaching Hospital Enugu, the Ebonyi State University Teaching Hospital Abakaliki, gave ethical clearance for the study. The authorities of the Mother of Christ Specialist Hospital Enugu, gave permission for the study.

Statistical analysis

Analysis was done using SPSS statistical package version 11.0 using tables and percentages. Differences in proportions were tested for statistical significance using the Chi square test. Significance level was set at $P < 0.05$, with 95% confidence level.

RESULTS

Demographic characteristics

Four hundred and eighty mother/infant pairs were analyzed. Twenty were not included in the analysis due to incomplete data. Majority of the mothers 443 (92.3%) were aged between 21-40 years. Three hundred and ninety five mothers (82.3%) had at least a secondary education (Table 1). The predominant

occupation reported by the mothers were petty trading (21.5%), housewives (25.0%) and self-employment (17.3%). This constituted the occupation of 63.8% of the respondents (Table 1). Of the 293 mothers that reported their parity, 26 (8.9%) were primipara thus “inexperienced”, others had two or more children and thus were “experienced”. Of the 431 women who reported their mode of delivery, spontaneous vertex delivery 350 (81.2%) was the predominant mode of delivery. This was followed by caesarean section in 75 (17.4%) as also shown in Table 2. The distribution of the sex, age and the sleeping place of the children are shown in Table 2. Two hundred and forty-one (51.3%) were males while 233 (48.5%) were females. Majority of the children were aged 0-12 weeks 313 (65.4%). Most of the infants 341 (71.1%) slept with their mothers.

Table 1: Distribution of Maternal Demographics.

Maternal Age	Frequency	Percentage
16-20	21	4.4
21-30	328	72.3
31-40	115	24.0
> 40	16	3.3
Total	480	100.0
Maternal Educational Attainment.		
University/Polytechnic	215	44.8
Secondary Education	180	37.5
Primary Education	73	15.2
No Formal Education	12	2.5
Total	480	100
Maternal Occupations		
Senior Civil Servant	84	17.6
Junior Civil Servant	53	11.0
Petty Trader	103	21.5
House Wife	120	25.0
Student	37	7.7
Self employed	83	17.3
Total	480	100
Number of Delivery by mothers		
Inexperienced	26	8.9
Experienced	267	91.1
Total	293	100
Mode of delivery		
Spontaneous Vaginal delivery	350	81.2
Breech	3	0.7
Caesarean section	75	17.4
Forceps	3	0.7
Total	431	100

Table 2: Distribution of Infants' Demographics.

Age of Infant (Wks)	Frequency	Percent
1 –12	314	65.4
13 –24	70	14.6
25 –36	65	13.5
37- 52	31	6.5
Total	480	100.0
Sex of Infants		
Male	246	51.3
Female	234	48.7
Total	480	100.0
Infant sleeping place		
Same bed with mother	341	71.1
Separate from mother	139	28.9
Total	480	100

Table 3: Period when Infants Cry Most.

Crying Period	Frequency	Percentage
6am –12noon	91	23.6
12noon –6pm	95	24.1
6pm –12midnight	92	23.9
12midnight –6am	107	27.8
Total	385	100

Infant crying characteristics and associated factors

Based on their perception, Thirty-eight (7.9%) mothers felt that their infants cried excessively. On 'easy' consolability, of the 167 mothers who responded, 16 (9.7%) felt that their infants were not easily consolable. Table 3 shows when the infants cried most. There appears to be a relatively equal frequency of spread of the period of excessive

crying. Educated mothers did not frequently report excessive crying when compared with the less educated ones. This was statistically significant ($X^2 = 11.8, P = 0.008$). Mothers who slept with their infants reported excessive crying more frequently than those who do not. The difference was however not statistically significant ($P = 0.057$). Maternal age, 'experience', and mode of delivery, infants' sex and age did not have any significant association with mothers' perception of excessive infant crying (Table 4).

Table 4: The Relationship between Excessive Crying in Infancy and Some Infant and Maternal Variable.

Variables	Infant Crying		Total	P. Value
	Excessive	Not Excessive		
Maternal Age (years)				
16 –20	0	20	20	0.45
21 –30	25	292	317	
31 –40	11	100	111	
> 40	0	4	4	
Maternal Experience				
Inexperienced	2	24	26	0.69
Experienced	26	230	256	
Mothers Education				
University / Polytechnics	9	20	211	0.008
Secondary / Vocational	16	152	168	
Primary	12	60	72	
No Formal Education	1	6	7	
Mode of Delivery				
SVD	30	309	339	0.74
Breach	0	7	2	
CLS	5	68	73	
Forceps delivery	0	3	3	
Infant Age (WKS)				
1 –12	26	237	299	0.21
13 –24	4	62	66	
25 –36	4	61	65	
37 –48	4	15	19	
49 –52	0	9	9	
Infants Sex				
Male	20	217	237	0.89
Female	18	204	222	
Infant's Sleeping Place				
Same bed with Mother	31	285	316	0.057
Separate from mother	6	129	135	

DISCUSSION

The prevalence of excessive infant crying found in this study, based on 2 different criteria, (mothers' perception and difficult consolability) is 7.9% and 9.7% respectively. This is within the range of 3-30 % reported by previous authors.¹⁻³ The similarity between this two different ways of assessing excessive crying found in this study differ from an earlier report from Netherlands that observed that the prevalence of excessive crying in infancy vary depending on the criteria used.⁸ It appears that the infants in South

Eastern Nigeria do not have periods when they have excessive crying. This differed from findings in developed countries where excessive crying tended to be more in the evening.^{9,10} We wonder if this difference was not due to the characteristics of the mothers in this study, considering that most of them were either self employed, petty traders or fulltime house wives, and were with their children most of the day. This postulation is supported by the finding that mothers that slept with their infants in this study reported excessive crying more frequently than those who do not, though the difference was not statistically significant. Educated mothers reported excessive crying less frequently. This differed from the finding in studies in developed countries where the reverse was the case.^{1,10,11} We think that the reason is that unlike in developed countries, educated mothers in contemporary times are likely to be more prepared for motherhood and are thus more able to tolerate the stress of motherhood. Excessive infant crying did not vary significantly with age of the infant as documented in previous observations.¹⁻⁴ However, most of the infants in this study (65.4%) were aged less than 12 weeks. The predominance of infants less than 12 weeks old among our respondents is in keeping with the age distribution pattern of babies in well baby clinics in Nigeria which serves mainly as immunization points.¹² In this study, 12 out of 157 children older than 12 weeks (7.5%) cried excessively. Earlier reports have suggested that children who cry excessively beyond 12 weeks of age deserve closer attention because they are likely to manifest with cognitive problems later.^{4,5} This finding in this study may require further investigation. Maternal experience did not have any influence on excessive infant crying. This agrees with the fact that most studies have not found any birth order effect on excessive crying.¹³ This further strengthens the postulation that maternal experience is not an associated factor of maternal perception of excessive crying. There was no significant difference between the sexes of the infants in their excessive crying rate. Previous reports on the influence of sex show conflicting results. While some noted no significant sex difference,^{10,11} others reported that excessive crying was more common among males.^{1,14} The high non response rate of 39% on parity can be explained by the cultural reluctance of the Ibos to count their children. Finally, the finding in this study that excessive crying in infancy was more frequently perceived by uneducated mothers implies that this group of mothers should be identified by the clinician and counselled about excessive crying to prevent unwanted consequences.

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REFERENCES

1. **Vander Wal MF, Vander Boom DC, Pauw Plomp H, deJong GA.** Mothers' report of infant crying and soothing in a multicultural population. *Arch Dis Child* 1998; 79: 312-317.
2. **Lucassen PLBJ, Assendeft WJJ, van Erjik J Th M, Gubbels JW, Douwes AC, van Geldrop WJ.** Systematic review of the occurrence of infantile colic in the community. *Arch Dis Child* 2001; 84: 398-403.
3. **St James Roberts I, Halil T.** Infant crying patterns in the first year: normal community and clinical findings. *J Child Psychol Psychiatry* 1991; 32: 951-968.
4. **Von Kries R, Kalies H, Papousek M.** Excessive crying beyond 3 months may herald other features of multiple regulatory problems. *Arch. Pediatr Adolesc Med.* 2006; 160: 508-511.
5. **Rao MR, Brenner RA, Schisterman EF, Vik T, Mills JL.** Long term cognitive development in children with prolonged crying. *Arch Dis Child* 2004; 89: 989-992.
6. **Frodi A.** When empathy fails: aversive infant crying and child abuse. In: Lester B M, Boukydis C F Z eds. *Infant crying: theoretical and research perspective.* New York/ London: Plenum press, 1985: 263-277.
7. **Morris S, St. James Roberts J, Sleep J, Gillham P.** Economic evaluation of strategies for managing crying and sleeping problems. *Arch Dis Child* 2001; 84: 15-19.
8. **Reignevel SA, Brugman E, Hirasing RA.** Excessive infant crying. The impact of varying definitions. *Pediatrics* 2001; 108: 893-897.
9. **Lehtonen LA, Rawtava PT.** Infantile colic: natural history and treatment. *Curr Probl Pediatr* 1996; 26: 79-86.
10. **Stehlberg MR** Infantile Colic: Occurrence and risk factors. *Eur J Pediatr* 1984; 143: 108-111.
11. **Paradise JL** Maternal and other factors in the etiology of infantile colic *JAMA* 1966; 197: 123-131.
12. **Ngini AE.** Missed opportunities to EPI-scheduled immunizations in Enugu: A health facility survey. West African Post Graduate Medical College Dissertation 1999.
13. **St. James-Roberts.** Persistent infant crying. *Arch Dis Child* 1991; 66: 653-655.
14. **St. James Roberts I, Plewis I.** Individual differences, daily functioning and developmental changes in amounts of infant waking, fussing, crying, feeding and sleeping. *Child Dev* 1996; 67: 2527-2540.