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KNOWLEDGE AND PRACTICE OF HEALTHCARE WORKERS ON INFANTILE COLIC IN THE HIGHLANDS OF NIGERIA

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ABSTRACT

Background: Infantile colic (IC) is an important cause of exhaustion, stress and depression to parents of affected infants. It may put the affected infant at an increased risk of abuse.

Aim: To determine the knowledge base and practice of healthcare workers on infantile colic in Plateau State.

Study methods: A descriptive, cross-section study. An open ended, self-administered structured questionnaires were given to healthcare workers in Plateau State who were invited to a scientific symposium on infantile colic; the Nigeria perspective. The questionnaires elicited relevant information on the knowledge and practice of respondents on infantile colic.

Results: Of 255 (93.4%) respondents who heard of infantile colic, 182 (75.8%) heard of IC in health facility, and 17 (7.1%) the media. Two hundred and thirty-four (85.7%) knew IC affects infantile. Seventy-eight (32%) and 77 (31.6%) of respondents said IC is caused by infection and mixed feeding respectively. Only 8(3.3%) and 1(0.4%) of respondents correctly identified swallowed air and gut motility respectively as hypothesized causes of IC. Sleeplessness, intense/prolonged crying, irritability were correctly identified as common manifestations of IC in 85.7% of respondents. Antibiotics was the preferred agent of treatment of IC in 113 (44.5%) while only 6 (2.4%) of respondent knew probiotics have therapeutic benefits for IC. There were no correlation between knowledge on IC and occupation and or duration of practice (p = 0.942).

Conclusions: There is low level of knowledge and inappropriate practice on infantile colic amongst the healthcare workers in the highlands of Jos, North-Central Nigeria. There are compelling needs to create awareness on IC among healthcare workers in Plateau State.

Keywords: Infantile colic, knowledge, infant and probiotic.

BACKGROUND

Infantile colic (IC) is a common problem encountered in paediatric practice affecting 15-30% of infants within the first three months of life.[1] Its an important cause of exhaustion, stress and depression among parents of affected infants. [2, 3] IC puts the colic infant at an increased risk of abuse.[4]

Whereas, several studies appear to indicate some appreciable public health knowledge on IC and therapeutic benefits with the use of probiotics in some parts of the world, [5] same cannot be said in our environment were knowledge base appears to be low among healthcare workers. Consequently, most caregivers resort to, self-medication which are often harmful.[6]

The aims of the current study therefore, are to determine the knowledge-base and practice of health-care workers on IC in Jos and its environs. The findings of this study may highlight possible areas for intervention such as public health campaigns to help

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improve the treatment and care of infants with colic in our setting.

SUBJECTS AND METHODS

This is a cross-sectional descriptive study undertaken in March, 2014 among healthcare workers in Plateau State. Plateau State has 17 local government councils. It is situated in the highlands of the North-Central Nigeria. The State has 4 tertiary level hospitals, 56 secondary level hospitals, 1 University Health Services Centre and 890 primary healthcare centers (PHCs).

Study setting: Six hundred and fifty-eight healthcare workers from public and private healthcare facilities in Plateau State were invited by Nestles Nutrition Company, Nigeria to her annual scientific symposium. The title of the symposium was Infantile Colic; the Nigeria perspective. Categories of healthcare workers invited for the symposium were: medical doctors, clinical pharmacists, nurses, dieticians/nutritionists, community health extension workers, medical social workers, physiotherapists and healthcare managers. The symposium took place in a 1000 seated capacity auditorium of Eliel Suits in Jos City of Plateau State, Nigeria.

Sample size The sample size was calculated using the Fischer's formula:

$$n = \frac{z^2pq,}{d^2}$$

Where, n = minimum sample size

z = confidence limit at 95% = 1.96

p = prevalence of infantile colic was 30%[1] in a study done by Hewson P *et al*

q = complimentary probability (1-p) = 0.47

d = degree of accuracy, set as 5%,

Thus,

$n = \frac{1.96^2 \times 0.3 \times 0.47}{0.05^2}$ = 217. Therefore, the minimum sample size was **217**.

Sample selection was by simple random sampling technique.

Following written informed consent, pretested, open ended, self-administered structured questionnaires were given to the respondents. Respondents were selected by simple random sampling. These questionnaires were administered an hour prior to the commencement of the symposium. Respondents spent an average of 15 to 25 minutes to complete the exercise. The questionnaire schedule elicited relevant medical information of the respondents' about infantile colic including: bio-data, place and years of practice, have you heard of infantile colic, what in your opinion is (are) the cause (s), when does it appear and disappear, what is the treatment, how common is it, how does it affect the parents of affected infants? Others solicited questions were; Is infantile colic treatable? If yes, how is it treated?

Data management Frequency tables and percentages were used to describe the cohort. They were also used to determine the means of all the variables considered (age, sex, occupation, highest educational attainment). Student`s t-test was used to calculate the significant difference between the different occupation. Standard deviation and standard error were also calculated. Levine's test for equality of variances was used to get the F and P-values. Results were represented in tables and charts to describe the demographic variables of the respondents. Pearson correlation was used to test association between variables. All tests of significance were two-tailed. p -value < 0.05 was taken to indicate significant difference.

Ethics statement This study was approved by the Jos University Teaching Hospital (JUTH) Ethics Committee.

RESULTS

Of 658 attendees of the scientific symposium,

Table 1: Distribution of respondents according to institution of practice.

Institution of practice	N0	Percent (%)
General /Cottage Hospitals	77	28.2
PHCs	65	23.8
JUTH	60	22
PSSH	51	18.7
OLAH	12	4.4
UHC	7	2.7
BUTH	1	0.4
Total	273	100

**PHC = Primary health care, JUTH = Jos University Teaching Hospital, PSSH = Plateau State Specialist Hospital, BUTH = Bingham University Teaching Hospital, UHC = University Health Centre, OLAH = Our Lady of Apostle Hospital*

279 responded to the self-administered questionnaires. Six questionnaires (0.9%) were returned uncompleted, giving a questionnaire-response of 99.1%. They were therefore, excluded from subsequent data analysis. The distribution of respondents according to institution of practice is as shown in Table 1.

One hundred and twenty-nine (47.3%) respondents' age range 45-64 years, 80 (29.3%) was 35-44 years, 46 (2.2%) was 25-34 years while records for age were missing in15 (5.5%) of respondents. Of 273 respondents, 106 (38.8%) were males and 167 (61.2%) were females giving a M:F ratio 1:1.6. Two hundred and seventy respondents were blacks (98.9%) while 3 (1.1%) were whites.

Table 2: Distribution of respondents according to occupation

Occupation	N0	Percent (%)
Doctor	34	12.5
Nurse	161	59.0
Pharmacist	36	13.2
CHEW	11	4.0
JCHEW	2	0.7
Nutritionist	16	5.9
Health hygienist	5	1.8
Medical social worker	5	1.8
Health manager	3	1.1
Total	273	100

**CHEW= community health extension worker, JCHEW = Junior community health extension worker*

Of 255 (93.4%) respondents who heard of infantile colic, 182 (75.8%) heard of IC in health facility, and 17 (7.1%) the media. Two hundred and thirty-four (85.7%) knew IC to affect infantile while 28 (10.3%) respondents did not know.

Of 268 respondents, 173 (63.6%) said gender does no influence the development of IC. Only 71(27.2%) of 261 respondents said cigarette smoke exposure is related to IC.

One hundred and forty-four (53.3) of 270 respondents said migraine headaches in one or both parents is significantly related to IC. Of 261 respondents, 186 (71.3%) said IC onset time is 2-3 weeks while 121 (47.1%) said IC disappeared at about age 4 months.

Of 270 respondents, 222 (82.2%) said IC is treatable, while 34 (12.6%) said no.

Table 3: Respondents' opinion on the causes of Infantile colic

Causes	N0	Percent (%)
Non - hypothesized		
Infection	78	32.0
Mixed feeding	77	31.6
Colostrum	25	10.2
Prematurity	18	7.4
Overfeeding	7	2.9
Makiakia	6	2.5
Don't know	6	2.5
Blood group incompatibility	6	2.5
Abdominal pain	5	2.0
Normal occurrence	3	1.2
Giving of water to infant	3	1.2
Indigestion	1	0.4
Hypothesized		
Swallowed air	8	3.3
Gut motility	1	0.4
Total	**244**	**100**

Makiakia = macula-papular cutaneous eruption

Table 4: Respondents' opinion of common manifestations of Infantile Colic

Manifestation	N0	Percent (%)
Correct		
Intense prolonged crying	147	53.3
Irritability	97	35.5
Sleeplessness	81	29.7
Abdominal bloating	66	24.2
Clenched fist	39	14.3
Whirling of feet	33	12.1
Fussiness	24	8.8
Arching of the back	6	2.2
Incorrect		
Greenish stools	57	20.9
Watery stools	21	7.7
Skin rashes	12	2.2

Only 6 (2.4%) of respondents knew that probiotics have therapeutic benefits in the treatment of IC. One hundred thirteen (44.5%) use antibiotics for IC treatment, while 40 (15.7%) do nothing about it. Three (1.1%) respondents use herbal mixture for the treatment.

Table 5: Respondents knowledge of perceived agents for the treatment of IC

Agents of treatment	N0	Percent (%)
Correct agents		
Probiotics	6	2.4
Incorrect agents		
Antibiotics	113	44.5
Nothing/reassurance	40	15.7
Don't know	35	13.8
Exclusive breast feeding	19	7.5
Glucose water	14	5.5
Gripe water	12	4.7
Refer	7	2.8
Total	254	100

Refer; Written referrer to higher level hospital facility

Two hundred and thirteen (80.4%) believe that IC is a serious problem to the parents of affected infant. Eighty-nine (34.8%) of respondents said IC is a significant cause of exhaustion/stress, 81 (31.6%) a cause of anxiety depression 21 (8.2%), marital discord 18 (7.0%), early termination of breastfeeding 6 (2.3%) and frequent hospital visit in 36 (14.1%).

Two hundred and thirty two (92.1%) has had a patient with infantile colic and 67 (28.5%) believe IC is common. There was no correlation in the occupation of the respondents and their knowledge of infantile colic, ($p = 0.942$).

DISCUSSION

Majority of respondents in this study claimed they have fairly good knowledge of infantile colic (IC). This was demonstrated by their ability to correctly identify IC; to affect infants in 85.7% of respondents, to manifest with intense prolonged crying, irritability, sleeplessness, abdominal bloating, clenching of the feet in about have of the respondents. Over 70% of respondents also correctly identify IC onset time of 2-3weeks and time of disappearance at about the age of 4 months. About two-third of the respondents knew that infantile colic has no racial or sex predilection but only one-third knew that cigarette smoke exposure predisposes to the development of IC. Only about half of the respondents' belief migraine headaches in one or both parents are a significant risk factor to the development of IC. The findings in the current study appeared higher than what was found in Lagos South-South Nigeria by Kazeem AO *et al*. [6] The difference in the knowledge base on IC in the two study populations may be because of the primary occupation of the respondents in the current study who were health care workers compared to those in the study cited above who were mothers recruited from various immunization clinics.

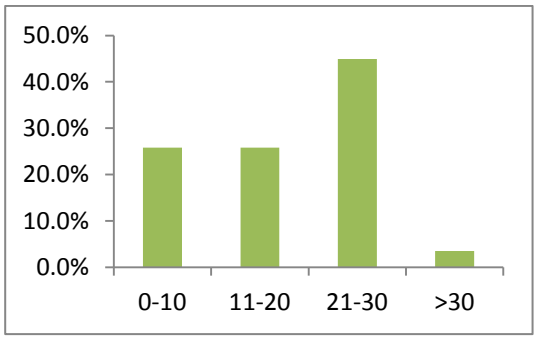

Figure 1: Distribution of respondents according to number of years of practice

However, the respondents appeared to have insufficient knowledge on the aetiology of infantile colic. About two-thirds of the study population said that IC is caused by infection and mixed feeding. Colostrums, prematurity, blood group incompatibility and abdominal pain were identified as some causes of IC. Only 6% of the respondents correctly identify swallowed air and gut motility to be among previously held theories to associate with infantile colic. Curiously, another small percentage of respondents said IC is a normal occurrence and therefore requires no treatment. It was therefore, not surprising with their perceived choice for antibiotics, gripe water and glucose water for the therapy of IC. Only 2.4% of respondents correctly identified probiotics as the appropriate agents for the treatment and prevention of infantile colic. There is need therefore, for public health campaign on the cause, manifestation and the treatment of IC in the highlands of Jos, highlands of North-Central, Nigeria.

Over two-thirds of the respondents believe IC is a serious problem. Only one-third said infantile colic is a significant cause of maternal postnatal exhaustion,

stress, anxiety and depression. These findings are similar to a cross-sectional multicentre study (Belgium, Italy, Germany, Poland and Spain) reported by Torstein Vik *et al*. [7, 8] Although the study cited above was among mother-infant pairs to determine if infantile colic had direct positive correlation with postnatal depression.

Curiously, despite the high global prevalence of infantile colic, only about one-third of the respondents were of the opinion that is a common problem in paediatric practice in our environment. Thus, suggests the low level of awareness of this menacing paediatric syndrome. There was no correlation in the occupation & duration of clinical practice of the respondents and their knowledge of infantile colic, ($p = 0.942$). There is therefore, a compelling and urgent need to scale up health education campaigns among healthcare workers in our setting so that, prompt diagnosis and appropriate treatment can be provided for to affected infants. To the best of our knowledge, probiotics are not readily available in our pharmaceutical outlets/hospitals for those who may need them. These are ambitious responsibilities of the pharmaceutical industries and the relevant regulatory agencies to make these therapeutic agents available in the highlands of Jos, North-Central Nigeria.

CONCLUSIONS

There is low level of knowledge and inappropriate practice on infantile colic amongst the healthcare workers in the highlands of Nigeria. There are urgent and compelling needs to create awareness on IC among healthcare workers in Plateau State.

CONFLICTS OF INTEREST

Authors have declared that no financial conflicts or conflicts of commitment to disclose.

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