



MATERNAL UNDERSTANDING AND PERCEPTION OF 'PICTORIAL PARENT GUIDE' ON 'ESSENTIAL CARE FOR EVERY NEWBORN'.

Neonatology

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ABSTRACT

Introduction: Health education is an important measure to reduce neonatal mortality. Pictorial representation is one of the effective means of health education.

Objectives: To understand maternal perception of newborn care and recognition of danger signs presented pictorially as a parent guide.

Method: Cross-sectional pictorial questionnaire survey was conducted among 100 mothers in 2 parts.

Results: Fifty mothers were assessed in each part of survey. Most mothers were literate. Recognition and correct interpretation of pictures on importance of hand washing, feeding only breast milk, dry cord care, immunization, common breast problems and important danger signs improved from 48 -68% (Pre explanation cohort) to 76-94% (post explanation cohort).

Conclusion: Maternal Understanding and Perception of 'Pictorial Parent Guide' On 'Essential Care for Every Newborn' is better than average and can be further improved by health education.

KEYWORDS

Newborn; Health education; Pictorial questionnaire survey; Dry cord care; Breastmilk

INTRODUCTION

Every year nearly 4 million neonates die with 99% of these deaths occurring in developing countries.¹ Among the many factors, maternal educational status is one of the important determinant of neonatal mortality. Educating the mother about essential newborn care and danger signs plays an important role in augmenting early health care seeking behaviour of the mother. Health education is also dependent on the level of understanding and literacy of the parents.² Health related information when disseminated to public in form of written materials or brochures are usually ignored or not well received.³ Even health talks or spoken instructions are not taken well because of stress and other factors in patients.³ Therefore health related information should be catchy and concise. Pictures usually attract the attention of patients and stimulate them to read the information depicted along with it.³ In a study by Delp and Jones⁴ it was shown that pictures along with accompanying text were more likely to be remembered than text alone. Health information in form of posters which have a picture and accompanying text are usually seen in hospitals and other areas of health care. In rural areas and urban slums which have a large population of illiterate people, this mode of health education plays using Information Education Communication (IEC) Materials play a major role. This study is an attempt to know the understandability of pictorial representation of common health care practices and danger signs among the post natal mothers. We also have tried to see whether pre explanation improves the understandability and retention of health related information in these mothers.

PATIENTS & METHODS

This cross-sectional questionnaire survey was conducted among 100 mothers who were admitted in postnatal wards of a tertiary care hospital of Northern India. The study was conducted over two months from January to March 2016.

Inclusion criteria: Included all of the following 1. Mothers in the post natal ward 2. More than 24 hours after delivery 3. Willingness to participate in the study.

Exclusion criteria: Hemodynamically unstable mothers, sick neonate, mothers on antipsychotics or anti depressants for postpartum depression and any other condition affecting the higher mental function as assessed by treating physician Outcome: The Primary Outcome was to assess the base line understanding and perception of

pictorial parent guide amongst the postnatal mothers and the secondary outcome was to assess the impact of health education on the ability to understand and retain information.

The survey was conducted in 2 parts. A total of 100 mothers were enrolled in this survey. In the first part of this survey, 50 mothers were enrolled (Group 1). They were given questionnaire leaflet without explaining the contents of the leaflet. The purpose of the first part was to assess the baseline understanding of the mothers. Mothers were told to recognize the meaning or message conveyed by each picture and answer the accompanying questions in the leaflet. In second part of this survey, each picture was explained in great details to a new cohort of 50 mothers individually by a health care professional and responses from each of them were assessed after 72 hours to assess the impact of prior health education if any (Group 2). In each part of this survey parents were given sufficient time to answer all the questions and responses from illiterate mothers were noted by the note taker.

The responses were classified as correct, wrong, no response and ambiguous as described below:

Correct: If the picture was identified and the underlying message was understood correctly

Wrong: If the picture was identified or interpreted in a wrong / opposite way

No response: If the mother failed to identify the picture

Ambiguous: If the mother identified the picture but could not understand the underlying message Description of leaflet.

There were a total of 6 questions in the leaflet. This leaflet had 4 sets of pictures with an accompanying question with each picture (Fig 1 and 2). There were 2 additional questions at the end without any picture. There was ample space below each question/ picture to note down the response.

The answers obtained from the mothers for both the parts were analysed by study investigator and responses were classified accordingly.

This parent guide leaflet is a part of essential care of every baby

training programme developed by American academy of paediatrics in survive and thrive alliance. In India it was adapted to local needs at the request of ministry of health and family welfare, Govt of India by laerdal global health (partner in survive and thrive alliance) in collaboration with neonatology experts from Lady Hardinge Medical College, Delhi and KEM hospital, Mumbai.

Statistical analysis

A convenient sample size of 100 mothers was chosen for this study, with 50 mothers in each part. Categorical variables have been expressed as frequencies and percentages. The Pearson's chi-square test of association was used to determine the difference in proportions of questionnaire leaflet parameters pre and post explanation. $P < 0.05$ was considered statistically significant. All data were analysed using SPSS version 17.0 software.

RESULTS

A total of 100 mothers were enrolled in this study (50 mothers were interviewed in each part). None of them had seen this leaflet before. The data in table 1 shows baseline characteristics of the study participants. It shows that the baseline characteristics were comparable between the two groups. Majority of the mothers were literates and penned down their responses on their own.

Importance of hand washing was recognised by 34(68%) mothers and it further improved to 47(94%) post explanation. Feeding only breast milk and avoiding bottle feeding and other top feeds were identified by 32(64%) mothers and it further improved to 94% post explanation. Common breast problems amongst the mothers were identified by nearly about half (56%) of the mothers and this improved to 84% after explanation by health care professional. Dry cord care was correctly identified by about half (48%) of the mothers and this improved to 76% after explanation. Importance of immunization was correctly identified by 24 (58%) mothers and it further improved to 84% post explanation. Danger signs were correctly identified by 86% of them which further improved to 92% post explanation (Table 1).

DISCUSSION

More than 95% of neonatal deaths take place in developing countries, with majority being seen in south central Asia.¹ Maternal education is one of the major determinants of neonatal mortality and survival, seen in both developing and developed countries.² The present study has shown that the recognition and correct interpretation of pictures on importance of hand washing, feeding only breast milk, dry cord care, immunization, common breast problems and recognition of important danger signs improved significantly when explained in details by health care workers.

Hand washing is one of the practices which has a major impact in reducing neonatal mortality.³ It is one of the strategies advocated by WHO to reduce the neonatal mortality.³ A large study involving 23,662 newborns showed maternal hand washing alone reduced neonatal mortality by 44%. A study by Greenland et al⁷ in Indonesia showed that hand washing with soap and water was infrequently done and was typically done after eating, cooking and household chores or after cleaning a child's bottom. They concluded that new mothers were the ideal target for this intervention. In the present study even though there was significant improvement in hand washing rates after explanation, whether it translates to sustained handwashing practise in community/home needs to be answered.

Exclusive breast feeding is also one of the important determinant in reducing neonatal mortality. According to NFHS 3 data more than 75% children are not breast fed within 1 hour of birth and more than 50% are not exclusively breast fed.⁷ Radhakrishnan et al⁸ and Ekambaram et al¹⁰ have showed poor understanding of the importance of breast feeding amongst postnatal mothers and majority of studies have shown that health education further improves knowledge, attitude and practice of breast feeding.^{11,12}

Even though there was significant improvement in exclusive breastfeeding rates post explanation, other factors like positioning, attachment etc. is not shown in the parent guide which might have an impact on sustenance of breast feeding.

Umbilical cord care is an important part of essential new born care.⁵ Many observational studies have shown poor cord care practices amongst post natal mothers. Gul et al¹⁵ and Opara et al¹⁶ showed that

74% and 62% of the women applied different substances on the cord respectively. We found significant improvement in the rates of dry cord care post explanation.

Majority of the neonatal deaths are related to late recognition of danger signs and signs of illness, delay in seeking health care and treatment. Improving the understanding amongst the mothers regarding these danger signs is important in preventing neonatal deaths.¹⁷ Ekwochi et al¹⁷ found 47.7% of the mothers sought health care after recognising danger signs. In another questionnaire based study by Alex hart et al¹⁸ found that 56% of mothers could correctly recognize danger signs in neonates but had poor health seeking behaviour. In a study by Sandberg et al¹⁹ knowledge of at least one of the defined key danger signs was present in 58.3% of women but only 14.8% of them could name at least two clinical signs with "Fast or difficulty breathing" being the most common danger sign recognized. In the present study as well fast breathing was recognized as danger sign by 80% of the mother. A study by Nigatu et al²⁰ showed that 79% of mothers recognised at least one danger sign and this was similar to our study where more than 70% of mothers recognised at least one danger sign except convulsion.

Health seeking behaviour of mother of sick children depends on sex of the child, type of sickness in the child and educational status of mother.²¹ In a study by Shrestha et al²¹ nearly 81% of mothers of sick children sought treatment but one fourth of them went to traditional healers for their children's illness.

In another study by Haroun et al²² health seeking amongst mothers in infants who had diarrhoea was 35% and 13% and improved significantly to 91% and 92% after health education.

Health education in form of pictures is one of the effective means of communication. In a review by Peter S. Houts³ it was stated that pictures along with written text can markedly increase attention and recall of health education information when compared to text alone. Pictures are most beneficial in patients with low literacy.³ Our study is unique because the knowledge of mothers were assessed using pictures along with written information on multiple areas of essential new born care. Our target population was post-natal mothers, because this is the group that experiences most of the new born related problems, especially in first few days of life. It is also well known that neonatal mortality is maximum in first week of life and intervention during this period will have maximum impact. Most of the hospitals, primary and community health centres in our country usually depict posters to deliver health education. Delivering health education in form of demonstrations, lectures or handing over written information needs lot of manpower and resources which is not possible in many centres. In these situations pictorial demonstrations play an important role. Moreover these health posters, if properly designed and depicted, can easily be understood by illiterate mothers. In this study majority of mothers were literates (96%) and the reason could be that this study was carried out in a tertiary care hospital. Even though mothers did not understand some individual components of the picture, overall understanding was good and this improved significantly after health education.

The major limitation of our study is that we did not assess whether this exercise of educating the mother with these form of pictures actually translate into reduction of neonatal and infant mortality, reduction in hospital admissions, improvement in growth etc.

Another limitation is that it requires health care worker to explain the pictorial guide to every mother which may not be feasible in a country like ours due to shortage of health care workers. Moreover, there may be some proportion of postnatal mothers who might not give enough attention because of postpartum depression, severity of illness or due to social issues. This can be tackled if this parent guide is incorporated during antenatal visit as a part of antenatal card, booklet, pamphlets or as poster in the waiting area during antenatal visits and then reinforced postnatally.

This study could have been more meaningful if it had included the study population of illiterate mothers where the actual understandability and impact of explanation could have been assessed better.

CONCLUSION:

We conclude that Maternal Understanding and Perception of 'Pictorial Parent Guide' On 'Essential Care for Every Newborn' is more than average and this can be improved by health education.

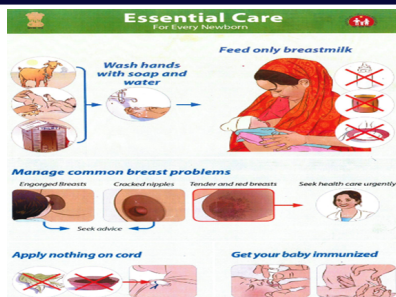


Fig 1: Pictorial parent guide



Fig 2: Pictorial parent guide

Table 3: Responses regarding individual parameters pre and post explanation

Picture	Part	Correct n (%)	Wrong n (%)	No response n (%)	Ambiguous n (%)
Importance of hand washing after handling the animal.	Group 1	19 (38%)	8 (16%)	18 (36%)	5 (10%)
	Group 2	29 (58%)	2 (4%)	17 (34%)	2 (4%)
Importance of hand washing after cleaning baby	Group 1	20 (40%)	3(6%)	15 (30%)	12 (24%)
	Group 2	22(44%)	6(12%)	20 (40%)	2 (4%)
Importance of hand washing after using toilet	Group 1	19 (38%)	1(2%)	25 (50%)	5 (10%)
	Group 2	19 (38%)	4 (8%)	26 (52%)	1 (2%)
Feeding only breast milk	Group 1	36 (72%)	1(2%)	10 (20%)	3(6%)
	Group 2	42(84%)	0(0%)	2(4%)	6(12%)
Bottle feeding	Group 1	19(38%)	31(62%)	0(0%)	0(0%)
	Group 2	27(54%)	2(4%)	20(40%)	1(2%)
Honey	Group 1	1(2%)	1(2%)	48(96%)	0(0%)
	Group 2	18(36%)	3(6%)	29(58%)	0(0%)
Tea/ coffee	Group 1	8(16%)	1(2%)	40(80%)	1(2%)
	Group 2	9(18%)	4(8%)	37(74%)	0(0%)
Engorged breasts	Group 1	10(20%)	6(12%)	21(42%)	13(26%)
	Group 2	10(20%)	7(14%)	33(66%)	0(0%)
Cracked nipples	Group 1	6 (12%)	18(6%)	16(32%)	10(20%)
	Group 2	21(42%)	7(14%)	22(74%)	0(0%)
Tender and red breasts	Group 1	31(62%)	2(4%)	10(20%)	7(14%)
	Group 2	38(76%)	4(8%)	8(16%)	0(0%)
Seeking health care	Group 1	40(80%)	2(4%)	6(12%)	2(4%)
	Group 2	40(80%)	1(2%)	9(18%)	0(0%)
No medicine/ herbal application on cord	Group 1	14(28%)	10(20%)	20(40%)	6(12%)
	Group 2	28 (56%)	5(10%)	15(30%)	2(4%)
No cow dung application on cord	Group 1	4(8%)	12(24%)	22(44%)	12(24%)
	Group 2	31(62%)	4(8%)	14(28%)	1(2%)
Recognition of Oral /polio vaccine	Group 1	36(72%)	5(10%)	6(12%)	3(6%)
	Group 2	36(72%)	4(8%)	9(18%)	1(2%)
Injectable vaccine / BCG	Group 1	34(68%)	6(12%)	7(14%)	3(6%)
	Group 2	39(78%)	4(8%)	6(12%)	1(2%)
Not feeding	Group 1	33(66%)	11(22%)	4(8%)	2(4%)
	Group 2	36(74%)	6(12%)	7(14%)	1(2%)
Baby too hot or cold	Group 1	35(70%)	8(16%)	4(8%)	3(6%)
	Group 2	38(76%)	4(8%)	6(12%)	2(4%)
Convulsions	Group 1	23(46%)	20(40%)	5(10%)	2(4%)
	Group 2	32(64%)	5(10%)	12(24%)	1(2%)
No movement	Group 1	26 (52%)	15(30%)	2(4%)	7(14%)
	Group 2	48(84%)	1(10%)	1(2%)	0(0%)
Chest indrawing / fast breathing	Group 1	38(76%)	5(10%)	5(10%)	2(4%)
	Group 2	40(80%)	5(10%)	3(6%)	2(4%)
Yellow palms and soles	Group 1	28(56%)	13(26%)	5 (10%)	4 (8%)
	Group 2	35(70%)	4(8%)	9 (18%)	2 (4%)

Table 1: Questions in leaflet

1.	Importance of handwashing
2.	Exclusive breast feeding
3.	Management of common breast problems
4.	Dry cord care
5.	Importance of immunization
6.	Recognition of danger signs

Table 2: Baseline characteristics of study participants

Baseline characteristics of study participants			
Parameters	Group 1 (without explanation)	Group 2 (with explanation)	P value
Maternal age*	26 (23-28)	25 (22-27)	0.15
Education level (10 th standard) #	39 (78%)	30 (60%)	0.06
Parity median*	2 (0-3)	2 (0-3)	0.08
Family size (no. of members)*	3 (1-4)	3 (2-4)	0.07
Socioeconomic status #			
Low	20 (40%)	19 (38%)	0.07
Middle	26 (52%)	29 (58%)	
High	4 (8%)	2 (4%)	

*- Median(IQR), #- N(%)

Group 1: Pre explanation , Group 2: Post explanation

Table 4: Overall summary of important outcomes

Meaning of picture	Group 1, n(%)	Group 2, n(%)	P Value
Importance of hand washing	34(68%)	47(94%)	0.002
Feeding only breast milk	32(64%)	47(94%)	0.0004
Common breast problems	28 (56%)	42(84%)	0.002
Dry cord care	24 (48%)	38 (76%)	0.004
Immunization	29(58%)	42 (84%)	0.004
Recognition of danger signs	34 (68%)	46 (92%)	0.005

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