

Assessment of Readiness in Mothers for Home Based Care of LBW Babies: A KAP Study

Bajaj Divyanshi A¹, Joshi Amol K², Deshmukh Laxmikant S³, Londhe Atul C⁴, Joshi Trupti A⁵

Author's Affiliation:

¹MBBS Student, ²Associate Professor, ³Professor, ⁴Assistant Professor, Department of Neonatology, ⁵Associate Professor, Department of Pediatrics, Government Medical College, Aurangabad, Maharashtra 431004, India.

Corresponding Author:

Joshi Amol K, Associate Professor, Department of Neonatology, Government Medical College, Aurangabad, Maharashtra 431004, India.

E-mail: dramolkj@yahoo.com

Received on 27.12.2018,

Accepted on 10.01.2019

Abstract

Introduction: Low birth weight (LBW) is the global indicator of public health and is the most important determinant for neonatal and infant survival. Apart from Essential Newborn care, as mentioned in Home Based Newborn Care (HBNC) guidelines, mothers of these babies need to be aware of their special needs. Therefore, this study was conceived, to assess knowledge of mothers regarding LBW care at home. **Objective:** To assess knowledge regarding the readiness of mothers for home-based care of LBW babies with respect to Providing warmth, Breastfeeding, Prevention from infection, Immunization, Kangaroo Mother Care, Supplementation and Assessing the Danger signs. **Methodology:** A cross-sectional, analytical, Directive open-ended questionnaire-based study over three months duration in 1498 Postnatal Mothers admitted in tertiary care institute. Questionnaire was framed and collected data was analyzed with the help of IBM-SPSS version 2016. **Results & Conclusion:** Considering the Inclusion and Exclusion criteria, 1498 mothers completed the questionnaire. Awareness with respect to "Providing warmth" 24.64%, "Breastfeeding" 19.02%, "Prevention from infection" 17.66%, "Immunization" 59.39%, "Kangaroo Mother Care" 18.35%, "LBW Supplementation" 20.66%, and that about the Danger signs was 10.98%. This awareness was low irrespective of Literacy, Age of Mother, Parity, Rural or Urban Status and multiple ANC Visits. HBNC programs involving community participation must insist on problems of LBW and prepare mothers for the same.

Keywords: Low Birth Weight; Readiness; Home Based Care; Newborn

Introduction

Infections (including sepsis, pneumonia, diarrhea, and tetanus), prematurity, and birth asphyxia are the major causes of death in the neonatal period. The most vulnerable period of a newborn's life is the period during birth and the first week of life. (74% newborns die within the First week and of that 40% on Day One) [1].

Low birth weight (LBW) is a global indicator of public health and is the most important determinant

for neonatal and infant survival. About 66% of babies are LBW [2]. In India, 3,341,000 babies are born too soon each year and 361,600 children under five die due to direct preterm complications [3]. Low birth weight babies are born at term or as preterm. Apart from Essential Newborn care, as mentioned in HBNC guidelines, mothers of these babies need to be aware of their special needs.

NMR India is 24/1000 as per SRS 2016 [4]. Reduction achieved is by only one point. Approximately 20% of all deliveries take place at

home. Out of all Institutional deliveries, nearly 45% mothers prefer to return to home within 48 hours after delivery posing a significant risk to the newborn. 54% of newborns die in the first week of life. Community-based Interventions have a role in reducing NMR though the impact is high when NMR is high > 50 [5].

Recognition of LBW baby in the community is a problem in low - middle-income countries [5]. LBW babies have many problems. Health education of such mothers should address all those issues. Though awareness about exclusive Breastfeeding is increasing, feeding of LBW needs special mention [6].

LBW babies are more vulnerable to all the Neonatal Complications. Special mention of Feeding problems required Assisted Feeding, Kangaroo Mother Care and Nutrition. One of the methods to reduce such complications is kangaroo mother care which improves growth and reduces morbidity in low birth weight infants. It is simple, acceptable and can be continued at home. It is a low-cost method of care of low birth infants, consisting of skin to skin care, exclusive breastfeeding and an early discharge with an adequate follow-up [7].

Therefore, this study was conceived, to assess knowledge of mothers regarding LBW care at home.

Objectives

To assess knowledge regarding the readiness of mothers for home-based care of LBW babies with respect to following domains-

1. Providing warmth.
2. Breastfeeding [8].
3. Prevention from infection.
4. Immunization.
5. Kangaroo Mother Care [9].
6. Supplementation.
7. Assessing the danger signs [10].

Materials & Methods

Type of study and study design: cross-sectional, analytical, directive open-ended, Questionnaire-based study

Duration: Period of 4 months

Setting: Tertiary Care Institute

Study population: Admitted Postnatal Mothers

Inclusion Criteria: Postnatal Mothers who delivered Low Birth Weight Baby

Exclusion Criteria

1. Mothers not willing.
2. Mothers with adverse pregnancy outcome.
3. Those not completing the interview.

Sample size

Convenience Sampling was done. Live birth rate or the number of postnatal mothers admitted to the tertiary care unit per day is approximately 60. Therefore, the expected total sample size of mothers to be included was 1504. Some respondents (n= 6) did not give complete responses and hence were excluded. Complete responses were obtained from 1498 mothers.

Data collection procedures

1. Consent of the mother was obtained.
2. The Questionnaire:
 - a) A predesigned questionnaire in 3 different languages i.e. *Hindi, English, Marathi* was used for interviewing the subjects
 - b) The questionnaire consisted of 20 questions directive open-ended questions,
 - c) Validated by taking opinion from 5 experts,
 - d) Tested as a Pilot project in more than 10 mothers,
3. For the interview:
 - a) Only Female surveyor interviewed the Mothers,
 - b) Interview in the vernacular language,
 - c) The answers given were scored for a correct or incorrect response.
 - d) A score of '1' was allotted for the correct answer and 'zero' for incorrect / don't know response.
 - e) If an incomplete / incorrect answer was obtained, she was given correct information before going to the next question.

Confident analysis / statistical tools: Collected Data was analyzed with the help of IBM-SPSS version 2016.

Ethical considerations: Institutional Ethics Committee Clearance obtained.

Results

Total 1498 mothers completed the questionnaire. The demographic Profile and other maternal details were obtained as per Table 1. The Population had

urban preponderance. Nearly 80% of deliveries were not identified or referred to this institute as high risk. A majority (92%) of mothers completed 4 or more ANC visits. Hematinics were received by 63% of mothers. The assessment results regarding 7 domains are depicted in Table 2.

Table 1: Profile Distribution Table of Frequency (%)

Profile	Category wise distribution			
Birth weight (gm)	1000-1500	1500-2000	2000-2500	
	4.36%	33.69%	61.95%	
Mother's Age (Years)	< 19	19- 35	>35	
	46.37%	50.28%	3.35%	
Parity	1	>1	>3	
	64.27%	25.98%	9.75%	
Place of Residence	Rural	Urban		
	26.71%	73.29%		
Ante Natal Checkup (Number of Visits to Health Facility)	< 4	> 4		
	7.53%	92.46%		
Supplements Taken (Total 100 Doses Completed)	Yes	No		
	63%	37%		
Education	illiterate	<10 th Std	>10 th Std	Graduate and more
	28.75%	23.68%	45.3%	2.27%

Table 2: Domains assessed for Readiness of Mothers for Home Based Care of LBW Newborns

Domain	Answered and Demonstrated Correctly	Percentage of Mothers Unaware	Learning Point
Providing warmth	24.64%	75.36%	About 80% of mothers who delivered LBW babies in a Tertiary Care Institute were not prepared for LBW care at home.
Comprehensive understanding about Breast feeding	19.02%	80.98%	
Prevention from infection	17.66%	82.34%	
Immunization	59.39%	40.61%	
Kangaroo Mother Care	18.35%	81.65%	
Supplementation (Medicines)	20.66%	79.34%	
Assessing the danger signs	10.98%	89.02%	

Table 3: Summary of Studies regarding Awareness about Home Based Care of Newborns

Sr No.	Author	Topic	Sample Size	Compared Domain
1.	Aklilu AbrhamRoba et al. [11]	KAP of Kangaroo Mother Care by Postnatal Mothers who Gave Birth to Preterm and Low Birth Weight Babies in Public Hospitals, Eastern Ethiopia	349 PNC Hospital Delivered Mothers	54.15% mothers practiced Kangaroo Mother Care in hospitals and also willing to continue at home
2.	Mrs. Kavita Bhoknal [12]	Effectiveness of Health Education Package on Knowledge and Practice Regarding Care of Low Birth Weight Babies (LBW) Among Post Natal Mothers	50 PNC Hospital Delivered mothers were selected by simple random sampling	It was noted that practice on care of LBW babies had significant association with educational qualification ($\chi^2=5.99$), parity of mother ($\chi^2=8.06$) at $p<0.05$ level
3.	Baqui et al. [13]	Newborn care in rural Uttar Pradesh	13167 women in Community delivered in last 2 years	Clean cord care 7% thermal care 5% and breastfeeding 5% ANC Visit 17%
4.	Arohi Dala [14]	A Cross-Sectional Study On Knowledge And Attitude Regarding Kangaroo Mother Care Practice Among Health Care Providers In Ahmedabad District	A cross-sectional study in 7 health centers in 145 HCP located in Ahmedabad district	Knowledge regarding LBW babies in 32.4% HCPs and only 33.1% could correctly enlist all components of KMC

5.	Elizabeth L Nabiwemba et al. [15]	Recognition and home care of LBW neonates: a qualitative study of knowledge, beliefs and practices of mothers in Iganga-Mayuge Health and Demographic Surveillance Site, Uganda	PNC Mothers (16) at Hospital + (10) at home	All mothers knew how to keep babies warm.
6.	Amolo et al. [16]	Knowledge of postnatal mothers on essential newborn care practices at the Kenyatta National Hospital: a cross sectional study	380 PNC mothers	More than 90% knew about breastfeeding. 99% did not agree with dry cord care. 10% knew neonatal danger signs

(Abbreviations: HCP: Health Care Personnel, PNC: Post Natal Care)

Discussion

Frequency Distribution and Risk of VLBW (Birth Weight less than 1500 gm)

In our study, it was noted that the Maternal Age at marriage less than completed 19 years is associated with a higher risk of VLBW (< 1500 gm) birth weight baby (RR 1.71). Birth spacing shorter than 3 years was noted in 90% mothers. Birth spacing less than 2 years was associated with an increased risk of VLBW baby (RR 0.64). Parity more than 3 and ANC Visits less than 4 did not show significant association with VLBW babies. Though this was not primary objective of this study, the association found was reported as a finding of interest.

Readiness of Mothers with respect to domains for Home Based Care of LBW babies

The general readiness of mothers for Home Based Care of LBW babies was assessed as poor, irrespective of the area of residence, (i.e. Urban/ rural), Age of the mother at the time of Marriage or delivery and 4 or More ANC visits. Poor preparedness despite being delivered at Tertiary Care center with Maternal Mortality of less than half of India Standards could be explained by the fact that due to high delivery load, and fast turnover, PNC mothers stay for just over 24 hours in Hospital.

It was observed that nearly 3 /4th of the mothers were not aware of various components of Essential Newborn Care, viz. keeping baby warm, feeding, Hygiene, immunization, identification of danger signs, more so about the care of LBW babies with respect to KMC, Prevention of Infection, Feeding, and Supplementation. A community-based survey done by Baqui et al. [13] reported poor KAP regarding ENBC in rural population. Various studies from other developing countries have reported better knowledge of Mothers (Amolo et al., Roba et al., Kavita Bhoknal, Nabiwemba et al.) depicted in Table 3.

Various authors have studied awareness of KMC in Community and in Health care workers. Our study found that 18.35% mothers were aware of KMC. Better (54.15%) awareness about KMC in mothers reported by Aklilu Abrha Roba et al. [11] can be due to emphasis in their Health Programs. Whereas a study from India, Arohi Dalal [14] reported that only 33.1% of Health Care Personnel could enlist all the components of KMC. Not many studies are available about awareness in Trained Personnel.

A similar disparity was noted about rates for correct practices for Breast Feeding. Amolo et al. [16] mentioned that in their study, more than 90% knew about breastfeeding, and a study from North India, Baqui et al. [13] reported only 5%, whereas that in our study was found to be 19.02%. Various studies across the globe have reported a varying degree of awareness about Breastfeeding. Rates of Early Initiation of BF and Exclusive feeding till 6 months are low in India. And the concern that it may still be lower in LBW babies with specific feeding issues.

Awareness regarding Immunization found 59.39% in our study whereas awareness about BCG and OPV (Birth dose) was 17.8% mentioned by Amolo et al. [16]. This better knowledge can possibly be due to very frequent IEC activities conducted and emphasis for immunization.

Awareness regarding Danger signs in LBW babies is important to improve health seeking behavior. Only 10.98% mothers in our study were aware of the Danger signs, finding which was similarly reported by Amolo et al. [16]. Healthy hygiene practices are necessary to prevent infections. In our study, 17.66% mothers answered and demonstrated correctly about dry cord care whereas it was reported to be only 7% by Baqui et al. [13].

Limitations of Our study

1. Recall Bias regarding some of the questions in the questionnaire.
2. All the preventive aspects of Low Birth Weight deliveries were not addressed to

- keep the topic simple.
- The study was not planned to include Simulation / Pre and Post Test. Hence, did not accomplish the demonstration Level of Learning Pyramid.
 - Whether the Mother would practice HBNC of LBW newborn after the session i.e. Follow up after discharge was not considered. (as it was not a part of this study design).

Strengths

- Convenience sampling with a Sample size of 1498.
- The Questionnaire was Validated by more than five Health Care Workers trained in Facility-Based Newborn Care and was tried on Pilot sample of 10 subjects and revised accordingly.
- ACSM (Advocacy, Communication and Social Mobilization) Goals of Low Birth Weight care are addressed. While conducting the survey, the surveyor demonstrated the correct technique to the mother and the attendants.

Conclusions

The readiness of mothers for home-based care of LBW babies was poor with respect to Providing warmth, Breastfeeding, Prevention from infection, Immunization, Kangaroo Mother Care, Supplementation and Assessing the Dangersigns. Despite more than 4 ANC visits, were not found to be prepared for Home Based Care of LBW. Hospital Delivered mothers need to be educated before discharge. Awareness about immunization was relatively better. Though exclusive Breastfeeding was practiced, comprehensive knowledge regarding the same was lacking. The quality of ANC Visits and the outcome needs improvement as a majority of the respondents were unaware of any high-risk factor for LBW delivery.

Recommendation

All the contacts with Health facilities should emphasize on same check list based points for educating the community as well as the Health Workers at all levels. A quality improvement approach which can be more context and population-specific may help reduce the implementation gap. Networking of Public Health Facilities for Quality Improvement Initiative and a focus of system strengthening along with Infrastructure,

Manpower, and Equipment for implementation of Policies is must.

Acknowledgment

Authors are thankful to the Professor and Head, Department of OBGY for allowing to interview mothers in Post Natal Ward and also to Dr SP Andurkar (Associate Professor, Community Medicine) for the help rendered for Statistical Analysis.

Abbreviations

ACSM – Advocacy Communication and Social Mobilization

ANC – Ante Natal Care

BF – Breast Feeding

ENBC – Essential New Born Care

HBNC – Home Based Newborn Care

IEC – Information Education Communication

LBW – Low Birth Weight

KAP – Knowledge Attitude Practices

NMR – Neonatal Mortality Rate

PNC – Postnatal Care

SRS - Sample Registration Survey

VLBW – Very Low Birth Weight

Conflict of Interest: None Declared

References

- Home- based newborn care Operational Guidelines (MOHFW GOI 2014)
- <https://data.unicef.org/topic/nutrition/low-birthweight> accessed on 22/01/2018 at 12.30 am
- India Profile of Preterm & LBW prevention & care. Downloaded from https://reliefweb.int/sites/reliefweb.int/files/resources/India_1.pdf accessed on 22/01/2018 12.40 am
- Government of India. Bulletin of the Sample Registration System 2016 on Key Health Indicators. Office of Registrar General, India. 2017.
- Gogia S, Ramji S, Gupta P, Gera T, Shah D, Mathew JL, Mohan P, Panda R. Community based newborn care: a systematic review and meta-analysis of evidence: UNICEF-PHFI series on newborn and child health, India. Indian Pediatrics. 2011 Jul 1;48(7):537-46.

6. Baqui AH, El-Arifteen S, Darmstadt GL, Ahmed S, Williams EK, Seraji HR, Mannan I, Rahman SM, Shah R, Saha SK, Syed U. Effect of community-based newborn-care intervention package implemented through two service-delivery strategies in Sylhet district, Bangladesh: a cluster-randomized controlled trial. *The Lancet*. 2008 Jun 13;371(9628):1936-44.
 7. SumanRao PN, Udani R, Nanavati R. Kangaroo mother care for low birth weight infants: a randomized controlled trial. *Indian Pediatrics*. 2008;45(1):17.
 8. Edmond K, Bahl R, World Health Organization. Optimal feeding of low-birth-weight infants: technical review. 2006. https://www.who.int/maternal_child_adolescent/documents/9241595094/en/
 9. Chan G, Bergelson I, Smith ER, Skotnes T, Wall S. Barriers and enablers of kangaroo mother care implementation from a health systems perspective: a systematic review. *Health policy and planning*. 2017 Aug 24;32(10):1466-75.
 10. Howson CP, Kinney MV, Lawn JE. Born too soon. *The Global Action Report on Preterm Birth*. Geneva: World Health Organization. 2012.pp.1-12.
 11. Roba AA, Binoy S, Naganuri MA. Knowledge, Attitude and Practice of Kangaroo Mother Care by Postnatal Mothers who Gave Birth to Preterm and Low Birth Weight Babies in Public Hospitals, Eastern Ethiopia. *J Neonatal Biol*. 2017;6(264):2167-0897.
 12. Bhoknal MK. Effectiveness of Health Education Package on Knowledge and Practice Regarding Care of Low Birth Weight Babies (LBW) Among Post Natal Mothers. *International Journal of Health Sciences & Research*. 2018 Mar;8(3):167-72.
 13. Baqui AH, Williams EK, Darmstadt GL, Kumar V, Kiran TU, Panwar D, Sharma RK, Ahmed S, Sreevasta V, Ahuja R, Santosham M. Newborn care in rural Uttar Pradesh. *The Indian Journal of Pediatrics*. 2007 Mar 1;74(3):241-7.
 14. Dalal A, Bala DV, Chauhan S. A cross-sectional study on knowledge and attitude regarding kangaroo mother care practice among health care providers in Ahmedabad District. *Int J Med Sci Public Health*. 2014 Mar 1;3(3):253-6.
 15. Nabiwemba EL, Atuyambe L, Criel B, Kolsteren P, Orach CG. Recognition and home care of low birth weight neonates: a qualitative study of knowledge, beliefs and practices of mothers in Iganga-Mayuge Health and Demographic Surveillance Site, Uganda. *BMC Public Health*. 2014 Dec;14(1):546.
 16. Amolo L, Irimu G, Njai D. Knowledge of postnatal mothers on essential newborn care practices at the Kenyatta National Hospital: a cross sectional study. *Pan African Medical Journal*. 2017; 28(1):159.
-