Dissertation

At

IIHMR Delhi

(1st March to 15th June 2023)

A Project Report On

Understanding Barriers and Different Approaches to Intervene Quality of Home-Based Neonatal Care: A Rapid Review

IIHMR Delhi

By **Dr Sheetal S**

PG/21/095

Under the guidance of

Dr. Preetha G S & Dr. Sumant Swain

PGDM (Hospital & Health Management)

2021-2023

International Institute of Health Management Research

New Delhi

Internship training

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Completion of Dissertation from respective organization

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In recognition of having successfully completed his/her internship and has successfully completed his/her project on

TITLE OF PROJECT: Understanding Barriers and Different Approaches to Intervene Quality of Home-Based Neonatal Care: A Rapid Review

DATE: 1st March to 15th June 2023

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She comes across as a committed, sincere & diligent person who has a strong drive and Zeal for learning.

We wish her all the best for future endeavors.

Mentor
Dr. Sumant Swain
Assistant Professor, IIHMR, Delhi.

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This is to certify that **Dr Sheetal S** student of PGDHM (Hospital and Healthcare Management) from International Institute of Health Management and Research- Delhi has undergone internship training under **IIHMR, Delhi** from **1st March to 15th June 2023**.

The candidate has successfully carried out the internship tenure and completed the projects assigned to her during her training. She has been sincere, scientific, and analytical in her approach to her study.

The internship is in fulfilment of the course requirement.

I wish her success in all the future endeavors.

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Certificate of Approval

The following dissertation titled **"Understanding Barriers and different approaches to intervene quality of Home Based Neo-natal Care - A Rapid Review" at "IIHMR-Delhi"** is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **PGDM (Hospital & Health Management)** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

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This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report, or book.

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Dr Sheetal S.

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ABBREVIATIONS:

HBNC – Home Based Neonatal Care

SDG – Sustainable Development Goals

NMR – Neonatal Mortality Rate

MMR – Maternal Mortality Rate

IMNCI - Integrated Management of Neonatal and Childhood Illnesses

AWW – Anganwadi Worker

ASHA – Accredited Social Health Activists

ANM – Auxillary Nursing Midwives

JSSK - Janani Shishu Suraksha Karyakaram

NSSK – Navjat Shishu Suraksha Karyakaram

LaQshya – Labour Room Quality Improvement Initiative

SUMAN – Surakshit matritva aashwasan

KMC – Kangaroo Mother Care

ABOUT THE ORGANIZATION

The International Institute of Health Management Research (IIHMR), New Delhi is allied to the 'Society for Indian Institute of Health Management Research' which was established in October 1984 under the Societies Registration Act-1958.

IIHMR-Delhi was setup in 2008 in response to the growing needs of sustainable management and administration solutions critical to the optimal function of healthcare sector both in India and in the AsiaPacific region.

IIHMR Delhi are a leading institute of higher learning that promotes and conducts research in health and hospital management; lends technical expertise to policy analysis and formulation; develops effective strategies and facilitates efficient implementation; enhances human and institutional capacity to build a competent and responsive healthcare sector. There multi-dimensional approach to capacity building is not limited to academic programs but offers management development programs, knowledge and skillsbased training courses, seminars/webinars, workshops, and research studies.

There four core activities are…

- Academic courses at masters and doctoral level in health and hospital management to meet the growing need of skilled healthcare professionals.
- Research that has high relevance to health policies and programs at national and global level.
- Continued education through management development programs and executive programs for working professionals to help them upgrade their knowledge and skills in response to the emerging needs of the industry.
- Technical consultation to the national and state-level flagship programs to address the gaps in planning as well as implementation.

Mission

IIHMR Delhi is an institution dedicated to the improvement in standards of health through better management of health care and related programs. It seeks to accomplish this through management research, training, consultation and institutional networking in a national and global perspective.

Vision

IIHMR is a premier institute in health management education, training, research, program management and consulting in the health care sector globally. The Institute is known as a learning organization with its core values as quality, accountability, trust, transparency, sharing knowledge and information. The Institute aims to contribute to social equity and development through its commitment to support programs aiming at poor and the deprived population.

Understanding Barriers and Different Approaches to Intervene Quality of Home-Based Neonatal Care: A Rapid Review

BACKGROUND:

The health status of a country is well-represented by its maternal and child mortality rates. Maternal deaths occur due to complications during or following pregnancy and childbirth. The most common complications that account for 75% of maternal deaths include postpartum hemorrhage, infection, preeclampsia/eclampsia, complications from delivery and unsafe abortion. Most of these complications are preventable or treatable, as health-care solutions to address them are well known. (1)

The maternal mortality ratio (MMR) in low-income countries is 462 per 100000 live births while that of high-income countries is 11 per 100000 live births, which means the lifetime risk for maternal death in 15-year-old women in high income countries is one in 5400 in comparison to 1 in 45 in low-income countries. This difference clearly demonstrates the inequity among rich and poor, in provision of and access to quality health services. (1) As per UN estimates, in 2017, there were 24 million live births in India, of which 35,000 maternal deaths occurred during or shortly after the childbirth, which gives MMR of 145 per 100000 live births. (2) This represents 12% of global maternal deaths. (3)

The MMR in India has declined from 398 per 100000 live births in 1997-98 to 99 per 100000 live births in 2020.[3] The health infrastructure in India has tremendous improvement post launch of National Rural Health Mission in 2005, which is sub-mission of National Health Mission.[7] The Government of India agreed to ambitious goals of Sustainable Development Goals (SDGs), which targets to reduce the MMR fewer than 70 per 100000 population and Neonatal mortality rate (NMR) less than 10 by 2030.(8)

Globally, it is estimated that 2.5 million neonates die in their first month of life, where India alone contributes to 600,000 neonatal deaths. (14,15) Significant percentage of global maternal, neonatal and under-five mortality is contributed by India. (4) One of the weakest links in low- and middle-income countries is lack of system thinking approach. (5) This link is further challenged in health systems by provision of low quality of care (QoC). (6) It is estimated that, of 1 million newborn deaths worldwide, around 60% occurred due to poor quality of care.(16)

The most common causes of death in newborns are due to asphyxia, infections including pneumonia, sepsis, and diarrhoea. First week of newborn's life is considered as the most vulnerable period, as it accounts for 70% of the neonatal mortality rate and about 40% of newborn deaths occurs within first 24 hours. (39)

To improve neonatal care, various programmes were launched by Government of India. The importance of home-visits to improve neonatal care was first shown by Dr. Abhay Bang in 1990s at Gadchiroli, Maharashtra. Integrated Management of Neonatal and Childhood Illnesses (IMNCI) was launched in 2004, where ASHA, Anganwadi workers (AWWs) and Auxillary Nursing Midwives (ANMs) were trained. Later in 2011, Home-based Neonatal Care was launched, this program focused on ASHAs trainings, conducted in four rounds using two modules (module 6 and module 7). Each round consists of five days of trainings and between each round, there is a gap of 10 to 12 weeks. It is expected that all the four rounds are attended within a year. (39)

To reduce neonatal mortality and morbidity, HBNC focuses on various factors, which includes a) early identification of danger signs and provide them with required care and appropriate referral. b) special care provision to low birth weight and essential care to all newborns. c) counsel family members to adopt

healthy practices to safeguard health of newborns. During visits, ASHAs were expected to counsel family members to promote exclusive breast feeding for first six month and after 6 months emphasis was given on complimentary feeding practices, promote hygienic practices with focus on handwashing, cord care, skin care and eye care, facilitate distribution of IFA syrup, Oral Rehydration Solution, to ensure development of child with regular growth monitoring and promoting Early Child Care and Development. ASHAs make 6 or 7 visits based on institutional delivery or home delivery respectively, for the first six weeks of newborn's life. (39)

Early diagnosis of risks by ante-partum and post-partum visits have shown to improve survival. (17,18) For improving the child survival, Government of India in 2011 adopted a strategy called Home-based Neonatal Care, which provided home based Antenatal care 6-7 visits till 42 days of newborn by Accredited Social Health Activists (ASHAs). This would help for early identification of sick newborns and provide them with appropriate care and referral, when required. (19) This home visitation has been an effective model for provision of high quality maternal and neonatal care. (33,34) Later in 2013, HBNC plus program was piloted in Rajasthan, Madhya Pradesh, Odisha, and Bihar, which included four more visits at 3, 6, 9 and 12 months. During this, ASHAs counsels' mothers for age-appropriate feeding, immunization, IFA, growth monitoring, Early childhood development, growth monitoring and hand washing.

Other programmes that were launched to improve the neonatal care included Janani Shishu Suraksha Karyakaram (JSSK) that was launched June, 2011, with objective to improve and promote institutional delivery and provide free transport for delivery and for referral, helping to eliminate Out of pocket expenditure. For prevention of hypothermia and infections and to provide newborn resuscitation, Navjat

Shishu Suraksha Karyakaram (NSSK) was launched. Though neonatal care is one of the priority issues that is being addressed by Government, there are various challenges affecting the quality of care provision and programme implementation, these includes lack of availability of trained manpower and logistics, while reluctance of trained manpower, mainly that of doctors, to provide service in rural areas is the major hurdle for provision of quality health care. (45) To improve the quality of labour room LaQshya programme was launched and SUMAN (Surakshit matritva aashwasan) was launched to provide free transport, drugs and diagnostics for both mother and infants. The Lancet Global Health Commission has also mentioned that without quality any strategies are not sufficient to improve health in low- and middle- income countries. (46)

WHO-SEARO launched regional framework for Quality of Care in 2015, this has led do development of Point of Care Quality Improvement (POCQI) model.[9,10] Quality improvement initiative for special newborn care units and delivery areas across government healthcare facilities was provided by establishment of LaQshya in 2017.[11] Quality improvement helps to identify gaps in QoC with problem solving approach rather than a fault-finding exercise. To improve the quality of services provision across health care facilities at point of care, WHO-SEARO in collaboration with All India Institute for Medical Sciences (AIIMS) and USAID ASSIST, developed POCQI model, that provides implementation guidance, so that implementation program can be set-up and managed at district level. [12]

POCQI model has been successfully used in various health care settings for improvement of QoC efficiently with the available resources.[13] Various techniques that improves the maternal and child health has been developed using PDSA (Plan-Do-Study-Act) cycle, but till date never been compiled in an individual paper. Hence, this review will focus on providing high quality evidence by compiling all the available papers from 2012 that dealt with quality improvement techniques in provision of maternal and child health services across various health care facilities. This systematic review could help to identify

benefits and gaps in model and can also identify the best techniques for maternal and childcare that was established using implementation guidelines of the model. These efficient and effective techniques can be further be disseminated and utilized by other districts across the health care facilities.

RATIONALE:

The launched programmes has led to improvement in neonatal health and mortality rate. GOI has agreed to ambitious goals of SDGs, which targets to reduce the Neonatal mortality rate (NMR) less than 12 per 1000 live births by 2030. This requires modification and innovation in the existing programmes. This review focuses to identify the issues of home visits care provision and on compiling all the initiatives taken by any of the health care center to improve HBNC. Hence, this review would help identify benefits and gaps in model and this knowledge can further be disseminated and utilized by other districts across health care facilities.

OBJECTIVES:

Primary Objective:

To compile various approaches to intervene the quality of Home Based Neo-natal care.

Secondary objectives:

- To identify the barriers related to home-based care provision.
- To understand the effect of various methods on quality of Home Based Neo-natal Care

METHODOLOGY:

Study design: The study is secondary research conducted from January 2023 to May 2023.

Types of studies: Descriptive, Observational and Experimental studies. The studies were either full text or abstract only, published, or unpublished data.

Types of participants: Neonates were considered as participants for the study.

Types of interventions: Implementation of any quality improvement method for home-based care in any district in India

Type of Outcome: Effect or modification in quality of HBNC were the outcomes that were looked at.

Search methods for identification of studies:

- Electronic database searches included PUBMED, COCHRANE, and Google Scholar. Keywords such as "Quality" OR "barriers" AND "neonate" OR "newborn" OR "neonatal" AND "homebased care" OR "home-visits" OR "home care" OR "home based" AND "India" were used for searches.

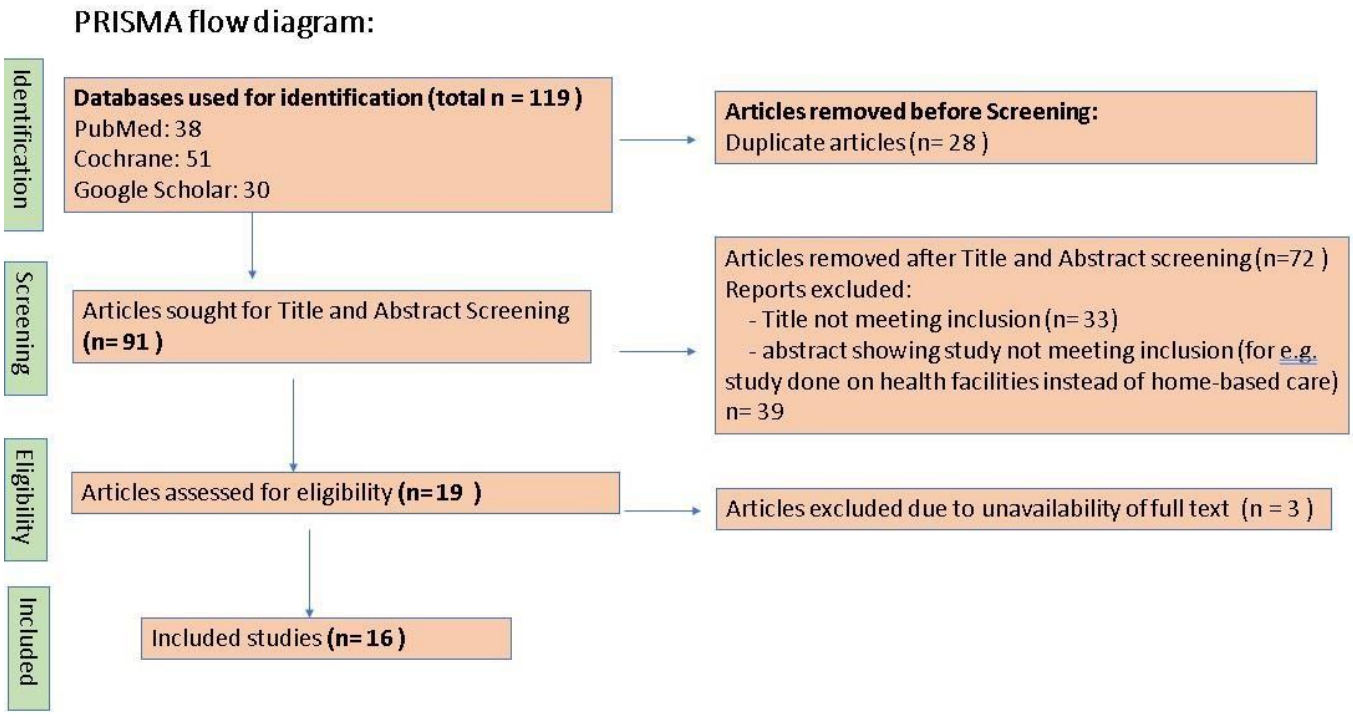
Methods of review:

Quality assessment:

- Joanna Briggs (JBI) tool was used to critically appraise the articles.

- The papers not fulfilling the protocol criteria and, in any language, other than English were excluded.

PRISMA flow diagram:



Ethical considerations

The study was presented at Student Review Board and as it is secondary research, it was consented free from ethical concerns.

RESULTS & DISCUSSION:

Issues in care provision:

Year & Journal	Authors	Results
Front. Public Health, 2022	*Deshmukh et al.*	- Socio-cultural factors (caste, economic divide and religious beliefs along with family related challenges of ASHA) - Educational factors (capacity building, communication and technical skills) - Organizational issues (supportive supervision, planning and management of field activities, availability of supplies) - Economic issues (Incentives & availability of resources) - Physical issues (ASHAS mobility)
CRM Report, 2017	*11th common review mission. NHM. MoHFW*	- ASHAs were able to detect only 2% of sick newborns, follows up to SNCU discharged babies to 6.8%. - Inadequate supportive supervision of ASHA for implementation of HBNC was observed in all states.
Indian Pediatr. 2016	*Bansal et al.*	Despite formal trainings and module conduction, ASHAs lack adequate competency and communication skills

Leadersh Health Serv. 2016	***Shrivastava et al.***	**Even with 5 days training, ASHAs failed to follow proper guidelines of HBNC, this shows that mere training is not sufficient to improve the quality.**
J Perinatol. 2016	***Chauhan et al.***	**Issues are commonly related to logistics, lack of skilled manpower, weak monitoring and supervision systems.**
NIPI report, 2014		**Home visitation by ASHA under HBNC and HBNC plus program are both inadequate and poor in quality with less than 10% of sick newborns being mobilized to facilities by FLW.**
Indian Pediatr. 2014 **J Family Med Prim Care, 2021**	***Das et al*** ***Phatak A G et al*** ***Pathak et al***	**80% instances ASHAs failed in comprehensive assessment and diagnosis of illness in the newborns** **ASHAs deficit technical skills, with not being able to perform bag and mask, KMC skills. Deficient in basic skills – weight & temperature measurement.**

The issues for community-based programmes are commonly related to logistics, lack of skilled manpower, weak monitoring and supervision systems. (38)

The roles of ASHAs includes – to improve health awareness in community, facilitate access to service and provision of basic curative care. (37) During the home-visits, ASHAs focus on ANC, promoting and

supporting of institutional delivery and breastfeeding, early identification of sick newborns. (20) A study by Das et al. stated that in 80% of instances, ASHAs failed in comprehensive assessment and diagnosis of illness in the newborns. (18) Studies have shown that despite formal trainings and module conduction, ASHAs lack adequate competency and communication skills. (d-23) This suggests higher need to address this issue and provide reinforcement trainings for ASHAs to improve the quality of healthcare provision. (18, 24-27) Even with 5 days training, ASHAs failed to follow proper guidelines of HBNC, this shows that mere training is not sufficient to improve the quality.

A study conducted by Deshmukh et al (35), to assess the barriers to home visits, showed that personal issues such as cultural constraints (for example, socio-cultural belief seclusion of mother and child postpartum), domestic responsibilities, etc. and societal issues such as economic and caste discrimination, acted as key constraints to home visits, while other issues included trust deficit by families on ASHAs, which was either due to low education status, lack of confidence or communication ability. The gaps in programme such as lack of mentoring systems, inability to impart technical skills and knowledge, communication skills of ASHAs, increased workload on ASHAs, insufficient or irregular supply of products and issues related to remuneration system, were other barriers to home-visits.

Phatak et al conducted study to assess the knowledge and skills of health care workers regarding HBNC and found that among the participants not even single ASHA was able to perform KMC skills or bag and mask skills satisfactorily, while only 4.1% of ASHAs were able to use suction properly. (40) A study conducted at Rajasthan stated that there are variety of factors that affect ASHA's performance and her motivation to work, this includes personal factors such as family background, education; professional factors such as incentives, training; organizational factors like supervision or infrastructure. (41)

One of the studies stated that delayed and low incentives were the main driver for low coverage and quality compared to the targets and protocols expected. Other factors included constraints in the system level that included lack of coordination between various health care providers, lack of supplies. (42)

A cross sectional study conducted by *Pathak et al* to assess knowledge and practices of ASHA, where 200 mothers of newborns were included as participants and the results showed that about half of mothers received counselling about breastfeeding, 41% on proper positioning of babies, 58% of them received counselling about timing of first bath, 24% on skin care and 67% on eye care, while for immunization it was 99%. (44) **Techniques:**

Several approaches such as **improved pedagogy techniques to train ASHAs, supportive supervision, introduction of additional cadre such as Yashoda, to provide counselling and care to mothers and newborns. (36)** A study conducted to assess the benefits of combined care provision by ASHA and Yashoda stated that exposure of mothers to Yashoda and ASHAs trained by NIPI had significant improvement of almost 3 times on newborn care indicators associated with counselling and practice. (37)

Year & Journal	Authors	Results:
Midwifrey, 2022	*Devi et al*	Re-education and training: KAP significantly improve after the intervention regarding hypothermia from 80% to 95%, KMC importance from 56% to 87%, skills for early diagnosis of high-risk newborns improved.

J Global Health,2021	*Lewis et al.*	Home based neonatal care plus: Rajasthan, Madhya Pradesh, Odisha and Bihar. Increase in visits had no detectable effect on key outcome of feeding practices, handwash, ORS supplementation, growth monitoring and immunization. Significant change in IFA supp.
Indian J of Pediatrics, 2019	*Goel et al.*	Multi-interventional approach: - Technical skill enhancement of ASHAs using live demonstrations, videos, and case studies. - Group discussions, role plays and lectures to improve the communication skills. - Supportive supervision to ASHAs through post-training field visits. - Provision of logistic and technical support to conduct community meetings. - Reinforcement of messages for mothers and other family members, by provision of gift items such as soap for handwashing, gown for breastfeeding, cap for thermal care, t-shirt and bag for involvement of other family members.

Advances in Medical Education and practice, 2019	*Gupta et al*	Micro-teaching: 12 ANM trained using micro-teaching - Videos were recorded of ANMs, while they performed HBNC services. Later these recordings were displayed in classroom, where individuals observed their performance. In addition, a oneday review and in class and at home training sessions were arranged to retrain the health workers. The gaps in the performance were rectified by demonstration of right methods by investigators and supervisors.
Sex Repro Healthc.,2018	*`Mozumdar et al*	Training Self-Help Groups: Increase in knowledge of women to identify danger signs
National Medical Journal of India, 2011	*Garg et al*	Additional cadre: Assessed the benefits of combined care provision by ASHA and Yashoda and stated that exposure of mothers to Yashoda and ASHAs had significant improvement of almost 3 times on newborn care indicators associated with counselling and practice.

Increase of Visits:

Since the launch of HBNC, several modifications were adopted to innovate and improvise the programme. The states with high neonatal mortality rates were piloted for HBNC plus programmed – Rajasthan, Madhya Pradesh, Odisha and Bihar, with Norweignian India Partnership Initiative (NIPI). (36) the main objective of this goal was to reduce diarrhoea and pneumonia related morbidity and mortality. For this reason, four visits were added to the existing ones, which included quarterly visits till 2 years of age. Later this intervention was nationally scaled up and an additional visit at 15 months was added, and this programme was named Home-base Care for Young Child.

A study by *Lewis et al* to evaluate the impact of HBNC plus programme, assessed by investigating the health behaviors and service uptake. The study found that the intervention at large had no significant or detectable effect on important outcomes such as handwashing, ORS distribution, handwashing and feeding practices, vaccination, and growth monitoring practices. The study also found that target to complete four visits were found in only 39% of children. The study suggested that participatory learning of groups should be focused as this has shown to have a good impact on India. (42) This was quite similar to the study conducted for rapid assessment of HBNC plus programme, which concluded that there was no detectable difference between the outcome level of intervention areas and controlled areas with regards to rates of breastfeeding, handwashing, immunization and complementary feeding. (43) **Multi-interventional:**

To improve the quality of care by ASHA, an interventional study conducted by *Goel et al*, included following interventions: (28)

- Technical skill enhancement of ASHAs using live demonstrations, videos, and case studies in refresher trainings.
- Group discussions, role plays and lectures to improve the communication skills.

- Supportive supervision to ASHAs through post-training field visits.
- Provision of logistic and technical support to conduct community meetings.
- Reinforcement of messages for mothers and other family members, by provision of gift items such as soap for handwashing, gown for breastfeeding, cap for thermal care, t-shirt and bag for involvement of other family members.

Key messages during the interventions focused on recognition of warning sings, thermal care that included Kangaroo Mother care (KMC), delayed first bath and appropriate clothing, initiation of early breastfeeding, six months exclusive breastfeeding and free ambulance services. ASHAs were given two days training, the first day was dedicated to reinforcing the technical skills, while the second day focused to develop communication skills. There was **detailed microplanning** for community meetings.

Evaluation was done after 6 months of the intervention. Mothers who delivered recently were asked questions related to ASHAs quality of care, on day 7 and day 28 post-partum. This intervention areas were compared to the areas where no interventional study was done, and the ASHAs were providing standard care. The results showed that in intervention areas, ASHAs made at least 4 home-visits, advised on cord care, maternal nutrition, first and recognized danger signs as compared to no-intervention group. The mothers in intervention area recognized danger signs two times better than the other group and reported neonatal illness to ASHAs 4 times better. The mothers of test group reported that ASHAs have better communication skills with relative satisfaction to ASHAs work. This study described the need for trainings, reinforcement trainings, communication skills development, supportive supervision to improve performance of ASHAs, which in turn play a vital role to improve quality of home-based neonatal care.

Micro-teaching:

The performance of services tends to be skill based, and the skills acquired by training are usually insufficient for ASHAs, as without routine practice and lack of supervision, it gets forgotten. (30) Micro-teaching is known to be an effective method to enhance skill with help of supervision and constructive feedback. The steps involved are: "plan, teach, observe, re-plan, re-teach and reobserve." (31) Use of audio-visual aids, transfers skills efficiently in training programs such as of neonatal resuscitation in rural hospitals. (32)

A Pilot study was conducted in Chandigarh by *Gupta et al,* (29) where 12 ANMs were trained using micro-teaching. The skills of the ANMs were tested at baseline and post intervention under three major domains: maternal history and examination, maternal counseling, and newborn examination. Videos were recorded of ANMs, while they performed HBNC services. Later these recordings were displayed in classroom, where individuals observed their performance. In addition, a **one-day review** and **in class and at home training sessions** were arranged to **retrain** the health workers. The gaps in the performance were rectified by demonstration of right methods by investigators and supervisors.

Assessment of maternal examination skills were poor at baseline, while there was significant improvement after third round. Similar results with statistically significant improvements in maternal counseling and neonatal examination was observed after the intervention compared to that of baseline. Hence, microteaching techniques create sense of self confrontation of one's own behavior, provides constructive feedback and continuous supervision that instigates better performance leading to improved quality of care.

WAY FORWARD:

- To scale up, there should be participatory learning activities of community with supportive supervision.
- Linking of government with other organizations (private and NGO)
- Regular meetings among the health care workers to prioritize and address the issues
- Collaborative learning and virtual use of digital technology to reach healthcare provider via virtual e-Learning and smartphone applications
- There is requirement of SBCC strategies that would help to overcome socio-cultural barriers. Timely remuneration and motivation to ASHAs, constant re-trainings on technical skills and communication abilities.
- Effective governance with focus on strengthening the existing programmes.
- Quality of training needs improvement with various modes for continuous training and meetings.

CONCLUSION:

The study was successful in understanding the barriers to HBNC and compile the interventions to improve the quality from existing literature. However, the study was unable to quantify the impact of these interventions, due to limited availability of literature. There requires immediate action to improve the quality of HBNC provision for achieving SDG 2030. Multi-interventional approach with strong governance remains the key for future growth.

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ANNEXURES:

Database Search: PubMed:

Search number	Query	Sort By	Filters	Search Details	Results
6	(((#2) AND (#3)) AND (#4)) AND (#5)			("newborn"[Title/Abstract] OR "neonates"[Title/Abstract] OR "neonatal"[Title/Abstract]) AND ("home based care"[Title/Abstract] OR "home visits"[Title/Abstract] OR "home based"[Title/Abstract] OR "home care"[Title/Abstract]) AND ("quality"[Title/Abstract] OR "barrier"[Title/Abstract] OR "issues"[Title/Abstract]) AND ("india"[MeSH Terms] OR "india"[All Fields] OR "india s"[All Fields] OR "indias"[All Fields])	38
5	india			"india"[MeSH Terms] OR "india"[All Fields] OR "india s"[All Fields] OR "indias"[All Fields]	767,040
4	((quality[Title/Abstract]) OR (barrier[Title/Abstract])) OR (issues[Title/Abstract])			"quality"[Title/Abstract] OR "barrier"[Title/Abstract] OR "issues"[Title/Abstract]	1,930,697

3	(((home based care[Title/Abstract]) OR (home visits[Title/Abstract])) OR (home			"home based care"[Title/Abstract] OR "home visits"[Title/Abstract] OR "home	42,270
	based[Title/Abstract])) OR (home care[Title/Abstract])			based"[Title/Abstract] OR "home care"[Title/Abstract]	
2	((newborn[Title/Abstract]) OR (neonates[Title/Abstract])) OR (neonatal[Title/Abstract])			"newborn"[Title/Abstract] OR "neonates"[Title/Abstract] OR "neonatal"[Title/Abstract]	407,406

Database Search: Cochrane:

ID	Search	Hits
#1	(newborn):ti,ab,kw OR (neonate):ti,ab,kw OR (neonatal):ti,ab,kw	41951
#2	(home based care):ti,ab,kw OR (home visits):ti,ab,kw OR (home based):ti,ab,kw OR (home care):ti,ab,kw	39200
#3	(quality):ti,ab,kw OR (barrier):ti,ab,kw OR (issues):ti,ab,kw	245133
#4	(India)	32233
#5	#1 AND #2 AND #3 AND #4	51

JBI critical appraisal checklist:

JBI CRITICAL APPRAISAL CHECKLIST FOR QUASI-EXPERIMENTAL STUDIES

Reviewer_____ Date_____

Author_____ Year_____ Record Number_____

	Yes	No	Unclear	Not applicable
1. Is it clear in the study what is the 'cause' and what is the 'effect' (i.e. there is no confusion about which variable comes first)?	☐	☐	☐	☐
2. Were the participants included in any comparisons similar?	☐	☐	☐	☐
3. Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?	☐	☐	☐	☐
4. Was there a control group?	☐	☐	☐	☐
5. Were there multiple measurements of the outcome both pre and post the intervention/exposure?	☐	☐	☐	☐
6. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analysed?	☐	☐	☐	☐
7. Were the outcomes of participants included in any comparisons measured in the same way?	☐	☐	☐	☐
8. Were outcomes measured in a reliable way?	☐	☐	☐	☐
9. Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (including reason for exclusion)

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_____

Sheetal S D

ORIGINALITY REPORT

7%	3%	5%	3%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

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4	Hwa-Young Lee, Hannah H. Leslie, Juhwan Oh, Rockli Kim, Alok Kumar, S. V. Subramanian, Margaret E. Kruk. "The association between institutional delivery and neonatal mortality based on the quality of maternal and newborn health system in India", Scientific Reports, 2022 Publication	1%
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10	www.researchsquare.com Internet Source	<1 %
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13	Achyut Raj Pandey, Bikram Adhikari, Bipul Lamichhane, Bishnu Dulal, KC Saugat Pratap, Deepak Joshi, Sushil Chandra Baral. "Newborn Care Practices in Health Facilities of Nepal: A Further Analysis from Nepal Health Facility Survey 2015 and 2021", Cold Spring Harbor Laboratory, 2023 Publication	<1 %
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