

"Effectiveness of Video assisted teaching on challenges faced in referral system of newborn baby among health care workers"

Ms. Sneha Sankpal Desai^{1*}, Dr. Bhagyashree Jogdeo², Ms. Rucha Bade³, Mr. Sachin Sonawane⁴

¹M.Sc (N) Clinical Instructor, Child Health (Pediatric) Nursing, Bharati Vidyapeeth (Deemed to be University), College of Nursing, Pune

²Professor & HOD of Child Health (Pediatric) Nursing Department, Bharati Vidyapeeth (Deemed To Be University) College of Nursing, Pune

³M.Sc(N) Clinical Instructor, Child Health (Pediatrics) Nursing, Bharati Vidyapeeth (Deemed to be University), College of Nursing, Pune

⁴Sr. Cinematography Faculty, BV(DU) School of Photography, Pune

*Corresponding author: Ms. Sneha Sankpal Desai, M.Sc (N) Clinical Instructor, Child Health (Pediatric) Nursing, Bharati Vidyapeeth (Deemed to be University), College of Nursing, Pune

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ABSTRACT

Introduction

An effective referral system is crucial for ensuring timely and appropriate care for newborns, who are highly vulnerable to morbidity and mortality due to conditions such as prematurity, infections, and birth asphyxia. In rural areas, several challenges—including poor infrastructure, delayed communication, lack of transportation, and inadequate training of healthcare workers—significantly hinder the efficiency of neonatal referral systems.

Objective

To assess the effectiveness of video-assisted teaching on challenges faced in the referral system of newborns among healthcare workers in selected rural areas of Pune city.

Methods

A quantitative pre-experimental one-group pre-test and post-test design was used. The study included 300 healthcare workers selected through non-probability purposive sampling. Data were collected using a structured questionnaire assessing demographic characteristics and knowledge related to referral system challenges. Video-assisted teaching was implemented as an intervention. The reliability of the questionnaire was established using Cronbach's Alpha (≥ 0.7), and inter-rater agreement for the video content was validated using Cohen's Kappa. A pilot study confirmed the feasibility of the research tool.

Results

Post-test findings demonstrated a significant improvement in the knowledge scores of healthcare workers compared to pre-test scores, indicating that video-assisted teaching was effective in enhancing their understanding of referral system challenges.

Conclusion

Neonatal referral challenges are influenced by both healthcare system factors and patient-related factors. Video-assisted teaching is an effective educational strategy to improve knowledge and preparedness among healthcare workers, thereby contributing to improved referral practices and neonatal health outcomes.

Keywords: Video assisted teaching, challenges, referral system, newborn, health care workers.

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INTRODUCTION

The referral system plays a critical role in ensuring timely and effective healthcare delivery, particularly for vulnerable populations such as newborns. Newborns require specialized & prompt medical attention due to their susceptibility to various health complications, and a well-functioning referral system can significantly improve their survival and health

outcomes. However, challenges in the referral system, including delays, lack of resources, communication gaps, and inadequate training of healthcare workers, often hinder the effective transfer of critical cases to higher-level healthcare facilities¹. In rural areas, these challenges are often magnified due to limited infrastructure, transportation barriers, and a shortage of trained healthcare professionals. Pune city, with its mix of urban & rural settings,

provides a unique context to study these issues². The rural regions face distinct obstacles that affect the referral system, which can directly impact the quality of care provided to newborns. Healthcare workers, as the primary stakeholders in the referral process, play a pivotal role in identifying and transferring high-risk cases. However, their ability to navigate challenges such as inadequate knowledge, coordination issues, logistical constraints can significantly influence the efficiency of the system.³

This study aims to assess the challenges faced by healthcare workers in the referral system for newborns in selected rural areas of Pune city. Based on the findings, an educational video will be developed and validated as a tool to enhance their understanding, address existing gaps, and streamline the referral process. The goal is to improve newborn health outcomes by empowering healthcare workers, strengthening the referral mechanism in rural settings⁴.

NEED FOR THE STUDY

The neonatal period is the most vulnerable time for a child, with a high risk of morbidity and mortality due to conditions like birth asphyxia, infections, and prematurity⁵. Timely and efficient referral of newborns requiring higher-level care is crucial for improving survival rates. A well-functioning referral system ensures that newborns receive the right care at the right time. However, in rural areas, several challenges hinder the effective functioning of this system, including inadequate infrastructure, delayed communication, lack of transport, and insufficient training of healthcare workers.⁶

In the rural areas of Pune city, these issues are further compounded by socio-economic factors, geographical constraints, and resource limitations. Healthcare workers, being the first point of contact, play a vital role in the referral process, yet they often face challenges such as inadequate knowledge, poor coordination with referral centers, and difficulty in convincing families about the need for referral. Addressing these challenges is essential to improve the quality of care and outcomes for newborns.⁷

Despite the significance of the referral system, limited studies have focused on understanding the specific challenges faced by healthcare workers in rural settings.⁸ Moreover, there is a need for innovative and practical interventions to bridge the gaps in the system. Educational tools, such as videos, can be effective in improving healthcare workers' knowledge, communication skills, and confidence in managing referrals.⁹

AIM OF THE STUDY

To assess effectiveness of video assisted teaching on challenges faced in referral system of newborn baby among health care workers.

RESEARCH METHODOLOGY:

- To assess the challenges faced by healthcare workers in the referral system of newborn babies.
- To determine the effectiveness of video assisted teaching on challenges faced in referral system of newborn baby among health care workers
- To associate the finding with demographic variables.

This quantitative study used a pre-experimental pretest posttest group design to assess the effectiveness of a video-assisted teaching on challenges faced in referral system of newborn baby among health care workers among 300 health workers in selected rural areas of Pune, using non-probability purposive sampling technique. Data were collected through a structured questionnaire covering demographics of data and knowledge, before and after the video intervention. The video's reliability was confirmed using Cohen's Kappa for interpreter agreement, while the questionnaire's internal consistency was measured using Cronbach's Alpha (≥ 0.7). A pilot study with five participants confirmed the tool's practicality.

RESULTS

Section I: Demographic Profile of the healthcare worker

Findings showed that majority of 30.67% participants were in 31-35 years age group and 17% participants were 20-25 years respectively and 20% were from 26-30 years and 18% were from 36-40 years, 14.33% were from 40-years and above. In gender 31.67% participants were male and 68.33% were female. In Designation majority of participants were LHV 32.67%, 16% participant were staff nurse, MPW were 25% and ASHA 14.67%, ANM 11.67%. Findings showed that majority of 33.67% participants were having 4-6 years experience, 30.33% participant have more than 6 years, 13.33% having less than 1 year, 22.67% having 1-3 years of experience in health services. 44.67% participants were 4-6 years of experience in PHC, 22.33% participants were 1-3 years of experience and 18% less than 1 year and 15% more than 6 years of experience in PHC. 70% of health workers currently working in subcentre, 19.33% in Health and Wellness centre 10% in PHC. Majority of 93.33% participants not received and 6.67% received training related to newborn care.

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Section II: Table 1: Findings related to pretest level of challenges faced in referral system of newborn N=300

PRE TEST	f	%	Mean	SD
MILD CHALLENGES (0-6)	3	1.00	12.51	1.79
MODERATE CHALLENGES (7-12)	125	41.67		
HIGH CHALLENGES (13-15)	172	57.33		

Data presented in above table 1 shows that majority 57.33 % healthcare worker were having moderate challenge, 41.67% healthcare worker were having high challenge and 1% antenatal mother's having mild challenges with mean score of 12.51 and SD 1.79.

Section III:

Table 3: Findings related to posttest level of challenges faced in referral system of newborn N=300

POST TEST	f	%	Mean	SD
MILD CHALLENGES (0-6)	166	55.33	6.63	2.14
MODERATE CHALLENGES (7-12)	133	44.33		
HIGH CHALLENGES (13-15)	1	0.33		

Data presented in above table 3 shows that majority 55.33 % healthcare worker were having mild challenge, 44.33% healthcare worker were having moderate challenge and 1% antenatal mother's having high challenges with mean score of 6.63 and SD 2.14.

Section IV:

Table 4: Findings related to effectiveness of video assisted teaching on challenges faced in referral system of newborn baby among health care workers. N=300

EFFECTIVENESS OF VIDEO ASSISTED TEACHING	Mean	SD	DF	T test calculated value	P value	Remark
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Pretest	12.51	1.79	299	38.15	0.0001	Significant
Post test	6.63	2.14	299			

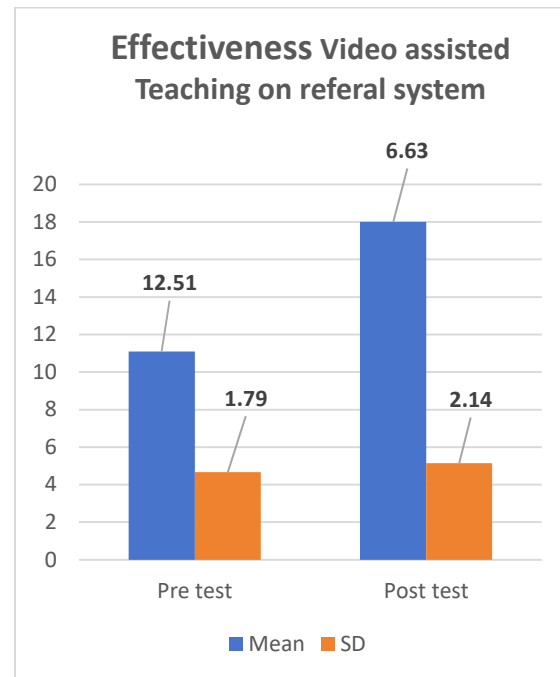


Figure 1: effectiveness of video assisted teaching on referral system

The effectiveness of video-assisted teaching on challenges faced in referral system (Table no.4, Figure 1) of newborn baby among health care workers was evaluated using a paired t-test. The mean knowledge score increased from 12.51 (SD = 1.79) in the pre-test to 6.63 (SD = 2.14) in the post-test. The calculated t-value of 38.15 with 299 degrees of freedom and a p-value of 0.0001 indicates a statistically significant improvement in knowledge after the intervention. This suggests that the video-assisted teaching was effective in enhancing the participants' understanding.

Section V: Association of the finding with demographic variables

In association P value of the health worker is more than 0.05 level of Significance. The present study examined the association between selected demographic variables and the level of challenges faced by healthcare workers in newborn care. The findings revealed that none of the demographic variables showed a statistically significant association with the level of challenges, as all calculated chi-square values were lower than the respective table values and the p-values were greater than 0.05.

Finally, training related to newborn care was also found to have no statistically significant association with the level of challenges. The calculated chi-square value was 0.092, which was lower than the table value of 5.991 at 2 degrees of freedom, and the *p*-value was 0.955. This suggests that respondents who had received training and those who had not received training reported similar levels of challenges.

Overall, the study findings indicate that demographic variables such as age, gender, designation, educational qualification, years of experience, workplace, and training status did not significantly influence the challenges faced by healthcare workers in newborn care. Therefore, the challenges experienced may be related to other organizational, infrastructural, or systemic factors rather than personal demographic characteristics.

DISCUSSION

The findings reveal that the majority of participants, 172 (57.33%), experienced high challenges (score range 13–15) during the pre-test. A considerable proportion, 125 (41.67%), reported moderate challenges (score range 7–12). Only a very small number of participants, 3 (1.00%), experienced mild challenges (score range 0–6).

In the post-test, the majority of participants, 166 (55.33%), reported mild challenges, while 133 (44.33%) experienced moderate challenges, and only 1 (0.33%) reported high challenges. This distribution indicates a substantial reduction in the severity of challenges when compared to the pre-test findings, where most participants reported high levels of challenges.

The mean pre-test score was 12.51 with a standard deviation of 1.79, indicating that participants initially experienced a high level of challenges. In contrast, the post-test mean score decreased to 6.63 with a standard deviation of 2.14, reflecting a reduction of challenges to the mild level after the implementation of video-assisted teaching.

The calculated *t* value ($t = 38.15$) at 299 degrees of freedom is highly significant, with a *p* value of 0.0001, ($p < 0.05$). The findings suggest that video-assisted teaching was highly effective in improving participants' understanding and reducing the challenges associated with the referral system of newborns.

The present study examined the association between post-test levels of challenges faced in the referral system of newborns and selected demographic variables. The analysis was carried out using the chi-square test to determine whether any significant relationship existed. The findings revealed that there

was no statistically significant association between post-test levels of challenges and any of the selected demographic variables.

Similar study was done by Vandana Kushwaha and Ratna Chhaya Singh Assess the effectiveness of video-assisted teaching programs on knowledge of neonatal resuscitation among B.Sc. Nursing 3rd-year students of selected nursing colleges of Rewa. The majority of B.Sc. Nursing 3rd-year students (41.66%) were in the age group of 21 years; 85% were female, and 28.34% of them had previous experience related to neonatal resuscitation. Most students, having experience, were exposed to seminars, and the rest of them were exposed to literature. In the pre-test, 46.34% of students had average knowledge, 43.66% had poor knowledge, and 10% had good knowledge. In the post-test, 71.66% had good knowledge, and 28.34% had average knowledge. The pre-test score mean was 12 ± 3.91 , while the post-test mean was 22.04 ± 4 showing a significant difference in knowledge level before and after the video-assisted teaching program (t -test=7.032, $p \leq 0.05\%$).¹⁰

CONCLUSION

The present study evaluated the effectiveness of video-assisted teaching in reducing the level of challenges faced in the referral system of newborns. The findings suggest that video-assisted teaching was highly effective in improving participants' understanding and reducing the challenges associated with the referral system of newborns. The effectiveness of this method may be attributed to its visual and auditory components, which enhance comprehension, retention, and practical application of knowledge.

The shift from predominantly high challenges in the pre-test to mostly mild and moderate challenges in the post-test suggests that the intervention was effective in reducing the difficulties associated with the referral system of newborns. Notably, the proportion of participants experiencing high challenges decreased drastically, indicating a significant positive impact.¹⁰

This improvement may be attributed to increased awareness, better understanding of referral procedures, enhanced coordination, or training provided during the intervention. The findings highlight the importance of structured interventions in improving the efficiency and effectiveness of the newborn referral system.

Overall, the study confirms that video-assisted teaching is an effective educational strategy in minimizing challenges and improving the efficiency of the newborn referral system. These findings support the integration of video-based learning

methods in training healthcare personnel to achieve better neonatal care outcomes.

CONFLICT OF INTEREST

The author declare that there is no conflict of interest related to this study

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