

## Effectiveness of Educational Program on Knowledge and Expressed Practice Regarding Home Based New Born Care among ASHA Workers at District Mandi Himachal Pradesh

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### ABSTRACT

Home-based newborn care (HBNC) is crucial beyond the first day, extending through the critical first week and month, where neonatal mortality rates remain high. This study aims to assess the effectiveness of an educational program targeting ASHA workers in improving HBNC practices. A true experimental pre-test, post-test, control group design was employed, with 70 ASHA workers selected via Probability Stratified Random sampling from PHCs in district Mandi (H.P). A self-structured tool assessed knowledge and expressed practice regarding HBNC before and after the intervention. Results indicated a significant increase in knowledge among the experimental group (pre-test:  $M=27.51$ ,  $SD=2.71$ ; post-test:  $M=33.77$ ,  $SD=1.73$ ,  $p<0.001$ ) compared to the control group (pre-test:  $M=23.91$ ,  $SD=3.55$ ; post-test:  $M=26.17$ ,  $SD=4.05$ ,  $p=0.014$ ). Practice levels also improved, albeit not significantly. Fisher exact test revealed significant associations between knowledge and educational status ( $p=0.014$ ) and family income ( $p=0.005$ ) in the experimental group. These findings underscore the effectiveness of the educational intervention in enhancing ASHA workers' knowledge of HBNC, thereby potentially reducing neonatal mortality rates.

**KEYWORDS:** Effectiveness, Home based new born care, ASHA workers

### INTRODUCTION

The health and well-being of newborns are paramount for their long-term development and the overall health of the population. In many low-resource settings, particularly rural areas with limited access to healthcare facilities, community health workers play a crucial role in delivering essential healthcare services. In India, Accredited Social Health Activists (ASHA workers) are pivotal in providing maternal and child healthcare services at the community level.<sup>1</sup> Recognizing the significance of early healthcare interventions, the Government of India has launched a substantial initiative focusing on home-based newborn care to enhance the health outcomes of newborns nationwide. This initiative underscores the importance of delivering essential healthcare services to newborns and their families in the comfort of their homes, especially in areas where accessing healthcare facilities is challenging. By providing care within the community, the home-based newborn care initiative aims to overcome barriers, reduce neonatal mortality rates, and promote optimal growth and development during the critical early days and weeks of a newborn's life.<sup>2</sup>

ASHA workers serve as the linchpin in implementing this initiative, bridging the gap between communities and the healthcare system. Their roles encompass delivering home-based newborn care services, offering guidance, support, and essential healthcare interventions to newborns and their families within their communities.<sup>3</sup>

The home-based newborn care initiative encompasses various components, including breastfeeding support, umbilical cord care, skin care, thermal protection, immunization, and weight measurement. These components address key challenges in newborn health and contribute to improving health outcomes during the vulnerable neonatal period.

However, despite the importance of ASHA workers in delivering home-based newborn care services, there remains a need to assess and enhance their knowledge and practices to ensure the effective implementation of this initiative. Therefore, this study aims to evaluate the effectiveness of an educational program targeting ASHA workers to improve their knowledge and practices regarding home-based newborn care. By enhancing ASHA workers' capacity, the study seeks to contribute to the success of the home-based newborn care initiative and ultimately improve newborn health outcomes across India.

## OBJECTIVES OF THE STUDY

### 1. Primary Objectives:

1. To find the effectiveness of educational program on home-based new born care among ASHA workers in experimental group.

### 2. Secondary Objectives:

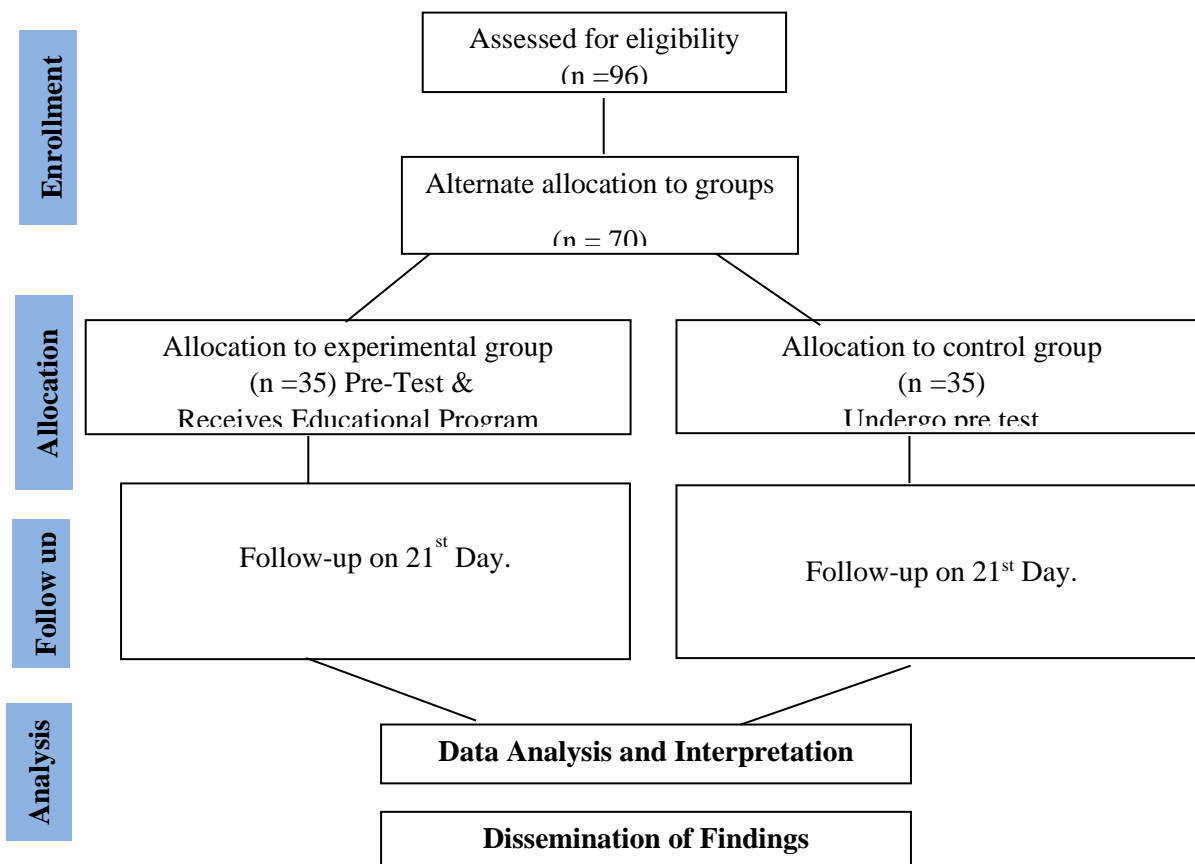
1. To determine the co-relation between knowledge and expressed practice among ASHA workers in experimental and control group.

2. To assess the association between knowledge, expressed practice and selected socio demographic variables of ASHA workers in experimental and control group.

### Methods:

This study employed a quantitative research approach and utilized a true experimental research design. The study was conducted among ASHA Workers in District Mandi, Himachal Pradesh, selected from four Primary Health Centers (PHCs) located in Baldwara, Baggi, Nihari, and Ratti, using Simple Random Sampling.

Two PHCs, Ratti and Nihari, were randomly assigned to the Experimental Group, while the remaining two PHCs, Baldwara and Baggi, constituted the Control Group. Inclusion criteria comprised ASHA workers currently employed and actively engaged in their duties during the study period. Exclusion criteria included ASHA workers not officially designated as such and those on extended leave, maternity leave, or other forms of long-term absence from their duties. Data collection was facilitated through a self-structured tool consisting of three sections: a Socio-demographic datasheet (8 questions), a Self-structured questionnaire assessing knowledge regarding home-based newborn care (40 questions), and an Expressed Practice Questionnaire (15 questions). The interventional program focused on various components of newborn care, including breastfeeding, umbilical cord care, skin care, thermal protection, immunization, and weight measurement, with the aim of enhancing ASHA workers' knowledge and expressed practices in these areas.



## DESCRIPTION OF THE INTERVENTION

The educational program on Home-Based Newborn Care is designed to equip ASHA workers in District Mandi, Himachal Pradesh, with essential knowledge and skills related to the care of newborns in their homes. This comprehensive program covers various aspects of newborn care, focusing on improving the knowledge and expressed practices of ASHA workers in the following key areas:

**1. Breastfeeding:** It consists of importance of early initiation of breastfeeding, exclusive breastfeeding for the first six months, proper positioning and attachment, addressing common breastfeeding challenges, and the benefits of breastfeeding for both the baby and mother.

**2. Umbilical Cord Care:** This segment of the program consists of how to care for the newborn's umbilical cord stump, including cleanliness, the importance of keeping it dry, recognizing signs of infection, and when to seek medical attention.

**3. Skin Care:** It consists of basic newborn skin care, including gentle cleansing, moisturization, recognizing common skin conditions, and when to consult a healthcare provider.

**4. Thermal Protection:** It consists of the importance of maintaining an optimal thermal environment for newborns. ASHA workers also get trained in techniques such as skin-to-skin contact, proper swaddling, and recognizing signs of hypothermia or hyperthermia.

**5. Immunization:** It consists of the information on the importance of immunizations for newborns, the recommended vaccination schedule, and the role they play in educating parents and caregivers about immunization.

**6. Measurement of Weight:** ASHA workers get trained in the proper techniques for measuring a newborn's weight accurately. They have understood the significance of monitoring a newborn's weight and how to interpret weight changes.

## ETHICAL CONSIDERATIONS

1. Permission was obtained from the Ethical Committee of the Akal Institutional Ethics Committee, Baru Sahib.
2. Permission was obtained from Akal College of Nursing to conduct the study.
3. Permission was obtained from Chief Medical Officer of district, Mandi, Himachal Pradesh.
4. Informed consent was taken from the participants.
5. Confidentiality of the obtained information was maintained.

## Data Collection Plan

### Phase 1

- The investigator was obtained the formal permission from the Principal of Akal College of Nursing and Chief Medical Officer of District, Mandi, Himachal Pradesh.
- The sample selection was done through Random Sampling. ASHA Workers in District Mandi, Himachal Pradesh, who are working in the selected 9 PHCs from the tehsils of, Balh, Baldawara, Sunder Nagar, and Nihari. This subset includes only those ASHA workers who are currently serving in the specified 9 PHCs within the mentioned tehsils. This represents the group from which investigator drawn the study participants, ensuring that research is focused on a specific, manageable sample within the larger target population.
- Informed consent was taken from the participants.
- Confidentiality of the obtained information was maintained.

### Phase 2

- The demographic data was collected from ASHA workers by using socio demographic data sheet.
- The data regarding the Knowledge and Expressed Practice of Home Based New Born Care was collected by the Self-Structured Questionnaires before Intervention among Experimental and Control group.
- Out of 4 PHCs, 2 PHCs are allotted for Experimental Group & 2 PHCs are allotted for Control Group.
- Educational Programme was administered to the ASHA Workers belong to the 2 PHCs which allotted for the Experimental group participants were received the Intervention regarding Home Base New-born Care.

**Phase 3**

1. On Day 21<sup>st</sup> Post-test was conducted on Knowledge and Expressed Practice of Home Based New Born Care among the ASHA workers in Experimental and Control group with the same Self-Structured Questionnaire.
2. Collected data was coded in Excel for analysis and interpretation.
3. Figure 3.2: Schematic diagram for the Data Collection Procedure.

**DATA ANALYSIS PLAN**

**1. Descriptive Statistics-**

Frequency, Percentage Distribution, Mean, And Standard Deviation for socio-demographic variables and Level of Knowledge and Expressed Practice regarding HBNC

**2. Inferential Statistics-**

- Paired t-test was used to assess the effectiveness of educational programme on HBNC among ASHA Workers.
- Pearson correlation coefficient test was used to find the linear relationship between Knowledge and Expressed Practice on HBNC among ASHA Workers.
- Chi square test was used to find the association between Knowledge, Expressed Practice, and selected Socio demographic variables of ASHA Worker

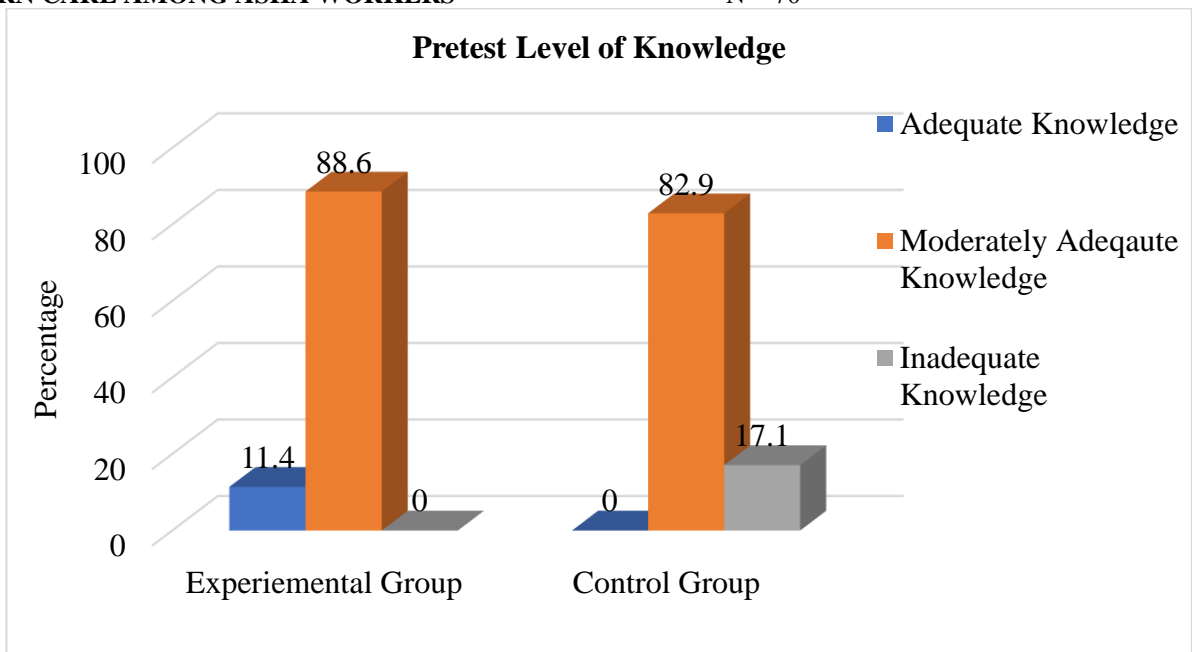
**RESULT**

**Table 1: Frequency & Percentage Distribution of Demographic Variables of ASHA Workers N = 70**

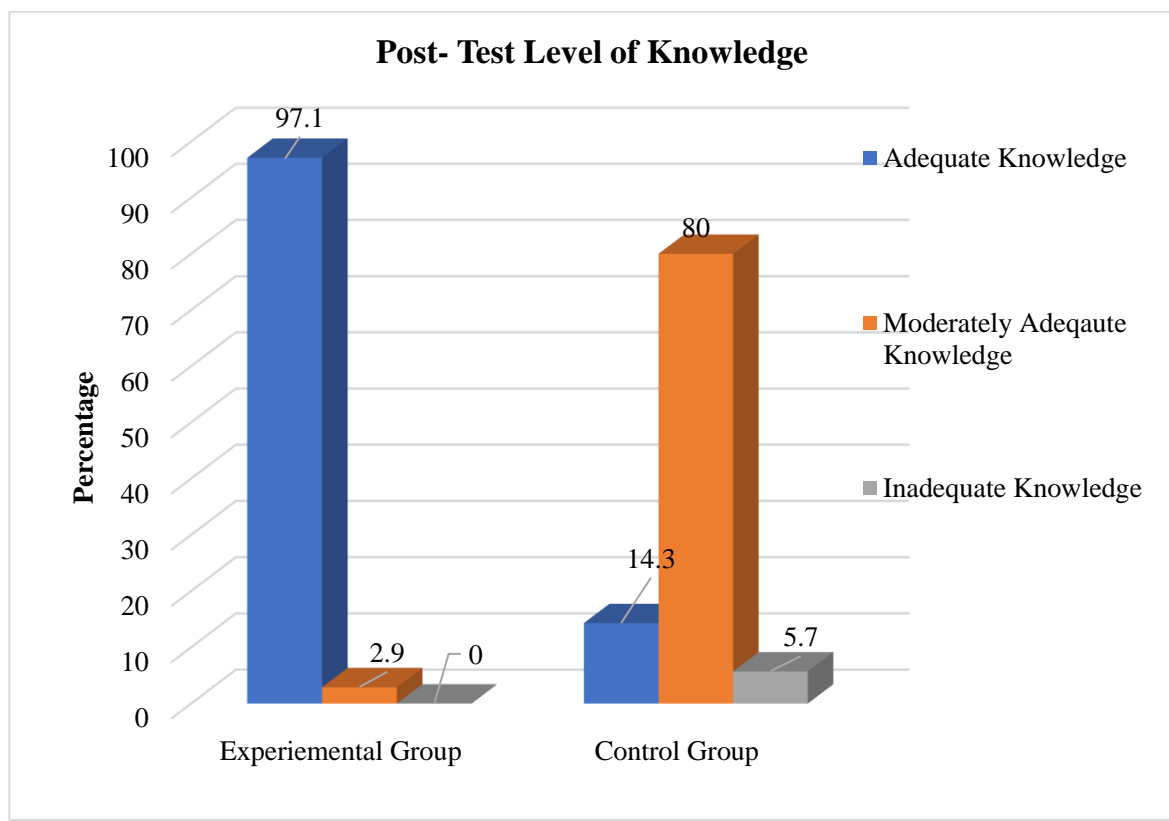
S. No.	Demographic Variables	Experimental		Control Group		$\chi^2$
		F (35)	%	F	%	
1.	<b>Age</b>					
	a) 26-30 years	5	14.3	1	2.9	0.029*
	b) 31-35 years	10	28.6	4	11.4	
	c) 36-40 years	16	45.7	21	60.0	
	d) 41-45 years	4	11.4	5	14.3	
	e) 46 years or above	0	0	4	11.4	
2.	<b>Educational Status</b>					
	a) Secondary Education	9	25.7	22	62.9	0.004*
	b) Senior Secondary education	20	57.1	12	34.3	
	c) Graduate or above	6	17.1	1	2.9	
3.	<b>Marital Status</b>					
	a) Married	27	77.2	25	71.4	0.584
	b) Divorced / Separated	1	2.8	3	8.6	
	c) Widow	7	20	7	20	
4.	<b>Type of Family</b>					
	a) Nuclear	10	28.6	9	25.7	0.208
	b) Joint	25	71.4	23	65.7	
	c) Extended	0	0	3	8.6	
5.	<b>Family Income</b>					
	a) Up to Rs. 5000	23	65.7	26	74.3	0.704
	b) Rs. 5001-10000	10	28.6	8	22.9	
	c) Rs. 10001-15000	1	2.9	0	0	
	d) Above Rs. 20000	1	2.9	1	2.9	
6.	<b>Year of Experience</b>					
	a) More than 10 Years	2	5.7	0	0	0.221
	b) 5 to 10 Years	33	94.3	34	97.1	
	c) Less Than 5 Years	0	0	1	2.9	
7.	<b>Population Covered</b>					
	a) More than 2500	0	0	1	2.9	0.602
	b) 1500 - 2499	1	2.9	1	2.9	
	c) Less than 1500	34	97.1	33	94.3	
8.	<b>Seminars attended on HBNC</b>					
	a) Yes	35	100	35	100	-

\* p<0.05 level of Significance

**DISTRIBUTION OF LEVEL OF KNOWLEDGE AND EXPRESSED PRACTICE OF HOME BASED NEW BORN CARE AMONG ASHA WORKERS** N = 70



**Figure 1: Distribution of Pre-test Level of Knowledge on HBNC among ASHA workers in Experimental & Control Group. N = 70**



**Figure 2: Distribution of Post-test Level of Knowledge on HBNC among ASHA workers in Experimental & Control Group. N = 70**

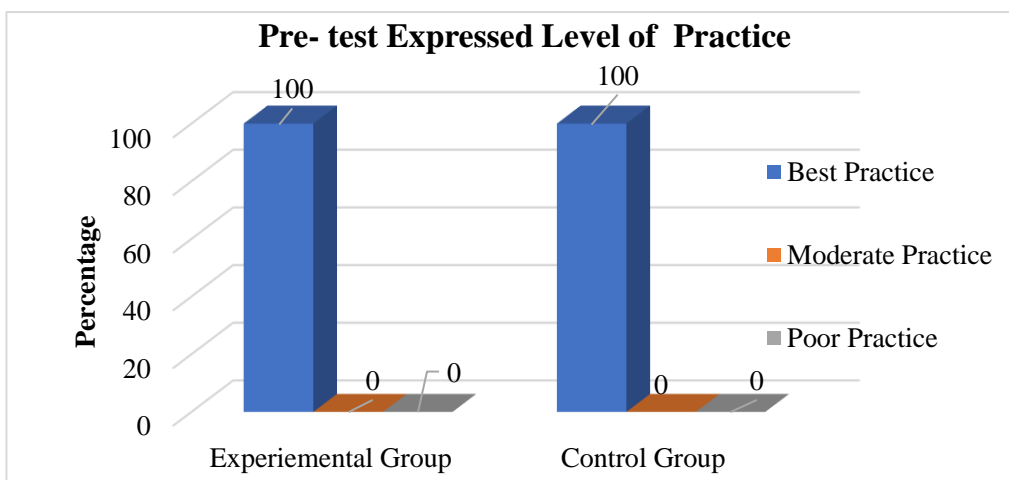


Figure 3: Distribution of Expressed Pre-test Level of Practice on HBNC among ASHA workers in Experimental & Control Group. N = 70

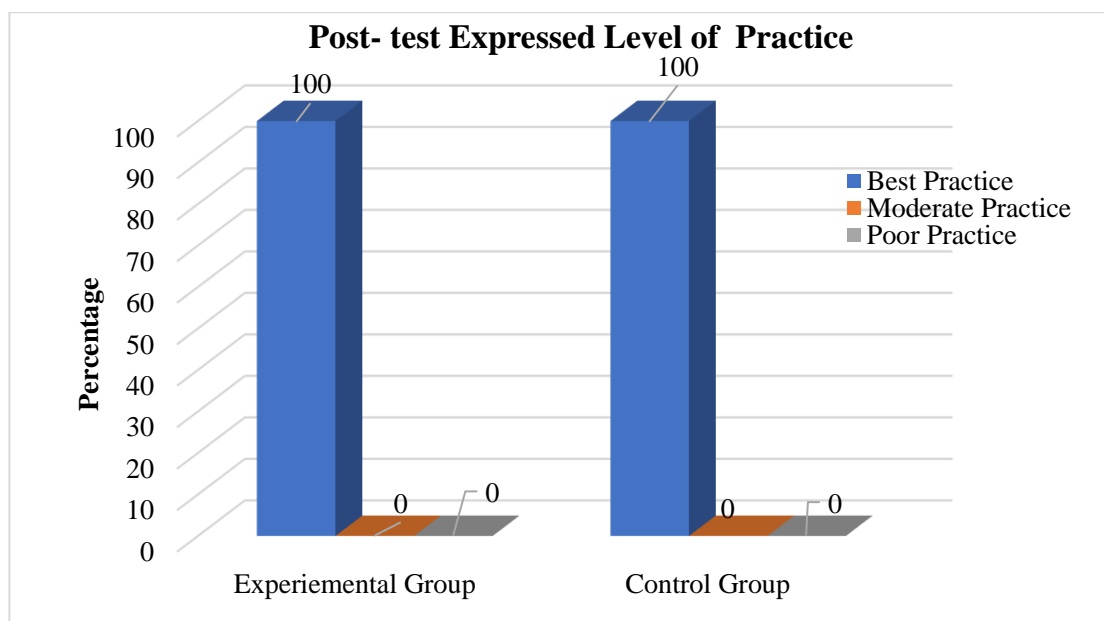


Figure 4: Distribution of Expressed Post-test Level of Practice on HBNC among ASHA workers in Experimental & Control Group.

**SECTION C: COMPARISON OF LEVEL OF KNOWLEDGE AND PRACTICE OF HBNC AMONG ASHA WORKERS**

**Table 2: Comparison of Level of Knowledge of HBNC among ASHA workers in Experimental and Control Group. N = 70**

Group	Knowledge	Mean	SD	Mean Difference	Paired 't' Test	p Value
Experimental	Pre-test	27.51	2.71	6.26	11.79	0.000**
	Post-test	33.77	1.73			
Control Group	Pre-test	23.91	3.55	2.26	3.01	0.005*
	Post-test	26.17	4.05			

\* p<0.05 – Statistically Significant, \*\* p<0.001 – Statistically Highly Significant

Table No. 2 shows the Mean & SD of Pre-test and Post-test Level of Knowledge of HBNC among ASHA workers of Experimental & Control group. The Mean difference of Pre-test and Post-test value of Experimental group is 6.26 and in Control group it is 2.26. The paired 't' test value of Experimental group is 11.79, p value of 0.000 which is Highly Statistically Significant & in Control group Paired 't' test value is 3.01, p value of 0.005 which is Statistically found Significant.

**Table 3: Comparison of Expressed Level of Practice regarding HBNC among ASHA workers in Experimental and Control Group. N = 70**

Group	Practice	Mean	SD	Mean Difference	Paired 't' Test	p Value
Experimental	Pre-test	14.17	0.82	0.12	NA	NA
	Post-test	14.29	0.75			
Control Group	Pre-test	14.43	0.77	0		
	Post-test	14.43	0.73			

**Table No. 3** Shows the Mean & SD of Pre-test and Post-test Expressed Level of Practice of HBNC among ASHA workers of Experimental & Control group. The Mean difference of Pre-test and Post-test value of Experimental group is 0.12 and in Control group it is 0.

**SECTION D: CORRELATION BETWEEN THE KNOWLEDGE AND EXPRESSED PRACTICE ON HBNC AMONG THE ASHA WORKERS**

**Table 4: Correlation between the Pre-test & Post-test Knowledge and Expressed Practice on HBNC among the ASHA workers in Experimental & Control Group. N = 70**

Variables		Experimental Group			Control Group		
		Mean	SD	r value / p value	Mean	SD	r value / p value
Knowledge	Pre Test	23.91	3.55	0.58	27.51	2.70	0.39
	Post Test	26.17	4.05	0.000**	33.77	1.73	0.019*
Expressed Practice	Pre-test	14.43	0.77	0.95	14.17	0.82	0.77
	Post Test	14.43	0.73	0.000**	14.29	0.75	0.000**

\*\* Positive Correlation and Significant at  $p < 0.05$ .

Table 4.4 depicts the correlation of relationship between two variables such that as the value of one variable increases, the other increases. Correlation is expressed on a range from +1 to -1, known as the correlation coefficient. Values above zero express positive correlation. In this study Pre-test & Post Test has Positive Correlation in Experimental Group and Control Group with regard to Knowledge & Expressed Practice regarding HBNC among the ASHA Workers.

**Table 5: Correlation between the Knowledge and Expressed Practice on HBNC among the ASHA workers in Experimental & Control Group. N = 70**

Group		Knowledge & Expressed Practice	
		Pearson Correlation	p value
Experimental	Pre test	0.39	0.01*
	Post test	0.14	0.41
Control	Pre test	0.23	0.17
	Post test	0.004	0.98

\*\* Positive Correlation and Significant at  $p < 0.05$ .

Table 5 depicts the correlation of relationship between two variables such that as the value of one variable increases, the other increases. Correlation is expressed on a range from +1 to -1, known as the correlation coefficient. Values above zero express positive correlation.

In this study Pre-test & Post Knowledge & Expressed Practice regarding HBNC among the ASHA Workers has Positive Correlation in Experimental & Control Group. It means that Knowledge on HBNC increases, the Practice of HBNC also increases simultaneously. But Pre-test Knowledge & Expressed Practice regarding HBNC among the ASHA Workers has Positive Correlation in Experimental group is has Statistically Significant Association at  $p < 0.05$ .

**SECTION E: ASSOCIATION BETWEEN PRETEST KNOWLEDGE AND DEMOGRAPHIC VARIABLES OF ASHA WORKERS**

With regard to Educational Status the Fisher Exact test value is 7.22 & p value of 0.014 which is found statistically significant association and with regard to Family Income the Fisher Exact test value is 11.63 & p value of 0.005 which is also found statistically significant association with Level of Knowledge on HBNC. With regard to Educational Status & Family Income found statistically significant association with Level of Knowledge on HBNC at p value of 0.005. **Thus, H<sub>2</sub> is accepted.**

**CONCLUSION:**

The study aimed to assess the effectiveness of an educational program on knowledge and expressed practice regarding home-based newborn care (HBNC) among ASHA workers in Mandi, Himachal Pradesh. The study findings revealed

significant improvement. The educational program had a significant positive impact on the knowledge levels of ASHA workers regarding HBNC, especially in the experimental group. However, there is room for improvement, particularly in the control group. It's important to note that both groups were already practicing best practices regarding HBNC, suggesting the need for interventions that bridge the gap between knowledge and practice. Additionally, the study highlights the importance of considering demographic factors when designing interventions and educational programs for ASHA workers. Overall, the findings underscore the value of continuous education and training for community health workers like ASHA workers to enhance maternal and child healthcare.

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