



**Effect of an Educational Intervention on Knowledge regarding Hypertensive Disorders of Pregnancy among Auxiliary Nurse Midwives (ANMs) at selected Health Care Centres, Paschim Bardhaman, West Bengal**

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**Abstract:**

**Background:** Hypertensive disorders of pregnancy (HDP) complicate 10% of pregnancies and are responsible for 14% of maternal deaths worldwide. HDP is the second leading cause of maternal and neonatal mortality and morbidity in the world. Most maternal deaths can be prevented by timely identification, management and referral services by health professionals working in a supportive environment. Auxiliary Nurse Midwives (ANMs), are first accessible village-level health workers in the community who are the grass-roots workers in the national health care organization. Their services may help communities in achieving the targets of maternal and child health programmes. Thus, it is very essential to strengthen the knowledge of the primary level health workers in improving the perinatal outcomes among women and children. Aim of the study was to measure the effectiveness of educational intervention on knowledge regarding Hypertensive Disorders of Pregnancy among Auxiliary Nurse Midwives in selected health care centres, West Bengal.

**Methods:** The study adopted a quasi-experimental research design with one group pre and post- test method. Sixty Auxiliary Nurse Midwives who are working in selected sub-centres functioning under Block Primary Health Centres of Paschim Bardhaman, West Bengal were selected conveniently as study sample. A structured questionnaire was administered before and after educational sessions to assess the level of knowledge on Hypertensive Disorders of Pregnancy. The descriptive and inferential statistics were used to analyse the data.

**Results:** The study shows that during pre-test, majority of the Auxiliary Nurse Midwives (60%) had moderate level of knowledge. In post-test, the most of the ANMs (76.67%) knowledge level was increased to the adequate level. It summarises that the mean level of knowledge score during pre-test was 17.28 (SD=2.79) and mean post-test level of knowledge score was 26.73 (SD=2.79). Hence, the findings of this study indicates that the knowledge level of the Auxiliary Nurse Midwives on the early identification, diagnosis, prevention,

management and follow-up services of Hypertensive Disorders of Pregnancy improved significantly after an educational intervention ( $p < 0.001$ ).

**Conclusion:** The study findings suggest that the educational intervention is providing support to increasing the knowledge of Auxiliary Nurse Midwives on Hypertensive Disorders of pregnancy at the primary healthcare level. Further studies with a larger sample size and conducted in different rural areas of the nation are needed to assess the effectiveness of such educational interventions in West Bengal.

**Keywords:** Educational Intervention, Knowledge, Auxiliary Nurse Midwives, Hypertensive Disorders of Pregnancy.

## **INTRODUCTION:**

The health of women and children are vital in creating a healthy world. Despite great progress, there are still too many mothers and children are dying during perinatal period. Maternal and neonatal mortality and morbidity are unacceptably high in world wide. In 2020, about 287000 women died during and following pregnancy and childbirth (WHO, 2020). Among those 95% of all maternal deaths occurred in low and lower middle-income countries, and most of the deaths are preventable by early identification, timely treatment and referral services<sup>1</sup>.

The maternal mortality ratio is dropped to about 34% from 2000 to 2020 worldwide<sup>2</sup>. Women in low-income countries have a higher lifetime risk of maternal death. In 2020, the MMR in low-income countries was 430 per 100 000 live births and 12 per 100 000 live births in high income countries which highlights the gap between the health care services of rich and poor<sup>2</sup>.

Hypertension is one of the common medical disorders occurring during pregnancy which is posing a major public health problem worldwide. Hypertensive disorders complicating pregnancy and increases the risk of adverse outcomes among mothers and offspring in current and future life. Though this Hypertensive disorders are preventable and treatable, the lack of knowledge and resources in early identification, management and timely referral services in rural health centres becomes a major challenge especially in concern of preeclampsia and eclampsia.

Registrar General of India (2020) declared that the Maternal Mortality Rate in West Bengal is over 100 per 100,000 live births compared with the national average of 97 live births<sup>3</sup>.

WHO insists a world as every pregnant woman and newborn must receive the quality health care services throughout the pregnancy, childbirth and the postnatal period<sup>4</sup>. The Reproductive health care, antenatal care (ANC) services provide a platform for functioning of optimal health-care deliveries, including health promotion, screening, early diagnosis, prompt treatment, timely referral services and disease prevention<sup>5</sup>.

Auxiliary Nurse Midwives are first and most frequent level of Primary Health care providers create the opportunity to communicate with and support women, families and communities in accessing, implementing and making decision which is based on scientifically sound and acceptable measures at a critical time<sup>6</sup>.

Auxiliary Nurse Midwives play a crucial role in achieving positive pregnancy experiences for women and bring out the favourable maternal and perinatal outcomes in rural settings. Thus the optimal level of knowledge of Auxiliary Nurse Midwives needs to be strengthened effectively to identify, treat or prevent the hypertensive disorders of pregnancy in their communities. The National and world health organizations have also encouraged for the periodical conduction of education and training programmes for all health workers in order to reduce the probable complications among women and children and also reduce the gap in health outcomes by providing access to quality maternal and child health care services that are affordable, accessible, and culturally appropriate<sup>7</sup>. This study aims to equip the Auxiliary Nurse Midwives with the knowledge on early identification, prevention, treatment and follow-ups of Hypertensive disorders of Pregnancy.

## **Objectives:**

- To evaluate the effectiveness of educational intervention on knowledge regarding Hypertensive Disorders of Pregnancy among Auxiliary Nurse Midwives in Selected Health Care Centres
- To determine the association between post interventional knowledge of Auxiliary Nurse Midwives with their selected demographic variables.

**Research hypothesis:**

H 1. There is significant increase in post interventional level of knowledge on Hypertensive Disorders of Pregnancy among Auxiliary Nurse Midwives.

H 2. There is significant association between post interventional knowledge of Auxiliary Nurse Midwives with selected demographic variables.

**RESEARCH METHODS**

**Research Design:** A quasi-experimental research design with one group pre-test and post-test method was adopted for the study.

**Study setting:** The study was conducted in selected primary healthcare centres of Paschim Bardhaman district, a rural plain district of West Bengal. Four sub-centres under Block Primary Health Centres (BPHC): Khandra Ukhra, Laudoha, Panagarh and Raniganj at Paschim Bardhaman, West Bengal were selected conveniently.

**Study population and sampling:** The study population were Auxiliary Nurse Midwives (ANMs) working in the selected sub-centres in Paschim Bardhaman district of West Bengal. Sixty ANMs were selected by convenient sampling technique as study participants.

**Intervention design:**

This study comprised of a pre-test, an educational intervention, and a post- test conducted with 6-10 study participants per session. A total of six sessions were conducted. The educational session was an hour- long interactive session facilitated using a conventional Power-Point slide presentation. The presentation topics included: (1) introduction and classification of HDPs (2) pathophysiology of Pre-eclampsia and Eclampsia (3) clinical features and diagnostic criteria (4) Preventive measures and treatment (5) referral services and (6) follow- up services for HDPs treatment and care. The educational intervention focused on practical information which is relevant to rural healthcare settings. The Education material also contained information on appropriate dose of regimen in treating Eclampsia.

Researcher used the same questionnaire for pre-test and post- test to assess the knowledge level of Auxiliary Nurse Midwives.

### **Study variables:**

In this study, the Independent variable of the study was Educational Intervention on Hypertensive Disorders of Pregnancy and Dependent variable of the study was Knowledge level of Auxiliary Nurse Midwives on Hypertensive disorders of Pregnancy.

### **Data analysis:**

The data was processed and analysed using descriptive and inferential statistics on the basis of objectives of the study. In descriptive statistics mean, percentage and the standard deviation is used for analysis and in inferential statistics paired t test and chi square test is used. The result of the study was shown in tables and figures.

### **RESULTS:**

**Table: 1 Distribution of Auxiliary Nurse Midwives based on their selected demographic variables such as Age, working experience in nursing and maternal & Child Health Care, their previous exposure to educational programme on Hypertensive Disorders of Pregnancy etc**

<b>S.No</b>	<b>Demographic Variable</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>1</b>	<b>Age (in years)</b>		
	18-25	0	0
	26-30	4	7
	31-40	16	27
	41-50	23	38
	51-60	17	28
<b>2</b>	<b>Designation</b>		
	Nurse-Midwife	2	3
	Health Worker	1	2
	Health Assistant/ Health visitor	30	50
	Additional second ANM (on Contract)	23	38

	Health Supervisor	4	7
<b>3</b>	<b>Experience in Nursing (in years)</b>		
	<1	0	0
	1-3	0	0
	4-6	7	12
	7-10	22	37
	>10	31	52
<b>4</b>	<b>Experience in Maternal and Child Health Services (in years)</b>		
	<1	0	0
	1-3	0	0
	4-6	7	12
	7-10	23	38
	>10	30	50
<b>5</b>	<b>Previous exposure to Continuing Education or In service Education on HDPs</b>		
	Yes	21	35
	No	39	65

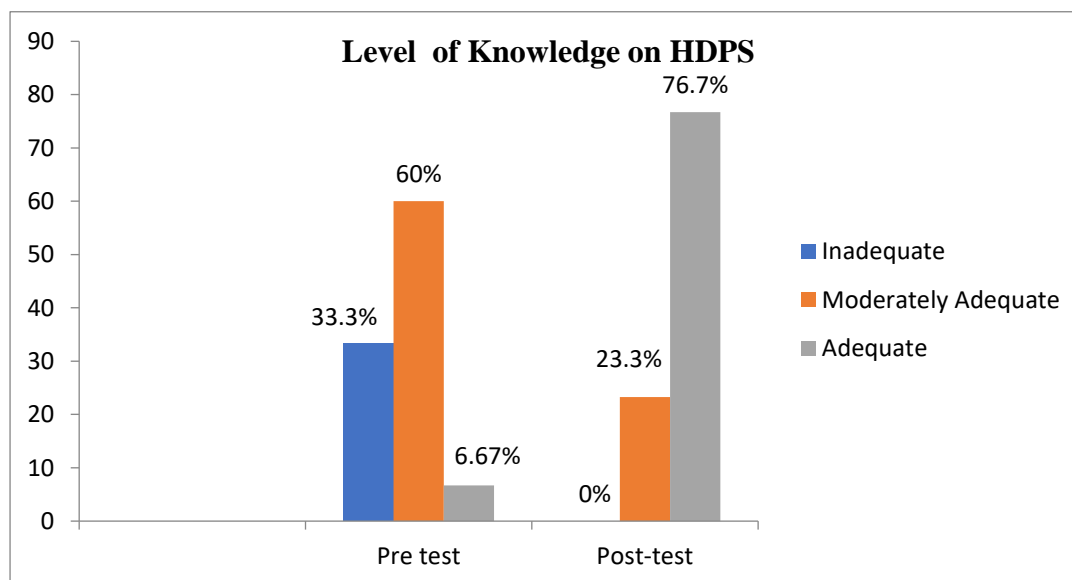
The data presented in the table 1 shows that majority of the health workers were between 41-50 years age group (38%), were designated as Health Assistant/ Health visitor (50%), had more than 10 years of experience in nursing (52 %), and in Maternal and Child Health Services (50 %). And most of the health workers (65%) didn't exposed to any continuing or in-service education programme on Hypertensive Disorders of Pregnancy.

**Table 2 declares the mean age, experience of the participants in nursing and maternal and Child Health services.**

<b>Table 2</b>	<b>Characteristics of participants</b>	
<b>Characteristics</b>	<b>Mean</b>	<b>Standard Deviation</b>
Age	45	8.6
Working experience in Nursing and Maternal And Child Health Services	9.6	1.9

**Figure: 1** shows that 20 (33.3%) of Auxiliary Nurse Midwives (ANMs) had inadequate knowledge, 36 (60%) of ANMs had moderate level of knowledge and 4 (6.67%) of ANMs had adequate knowledge in the pre-test.

During Post-test, none of them had inadequate knowledge. 14 (23.3%) of ANMs had moderate level of knowledge and 46 (76.67%) of ANMs had adequate knowledge.



**Table 3 summarises the mean knowledge score during pre and post-test.**

<b>Table 3 Changes in overall knowledge and confidence in managing HDPs using paired t- test</b>			
<b>Variables</b>	<b>Mean</b>	<b>SD</b>	<b>“t” value</b>
Pre-test	17.28	2.79	25.97*
Post-test	26.73		

*Significant at 0.05*

*HDPs: Hypertensive Disorders of Pregnancy*

The above mentioned data reveals that the “t” test value was found to be highly significant at the level of  $p < 0.05$ . It showed that Educational intervention was effective to improve the knowledge regarding Hypertensive Disorders of Pregnancy among Auxiliary Nurse Midwives.

**Table 4 shows that Association of Post-test level of knowledge scores with selected demographic variables**

<b>S.No</b>	<b>Demographic Variable</b>	<b>Inadequate Knowledge</b>	<b>Moderate Knowledge</b>	<b>Adequate Knowledge</b>	<b>Chi Square Significance</b>
<b>1</b>	<b>Age (in years)</b>				0.184*
	18-25	0	0	0	
	26-30	0	1	4	
	31-40	0	4	11	
	41-50	0	5	16	
	51-60	0	4	15	
<b>2</b>	<b>Designation</b>				1.814*
	Nurse-Midwife	0	0	2	
	Health Worker	0	0	1	
	Health Assistant/ Health visitor	0	5	21	
	Additional second ANM (on Contract)	0	7	18	



	Health Supervisor	0	2	4	
<b>3</b>	<b>Experience in Nursing (in years)</b>				0.201*
	<1	0	0	0	
	1-3	0	0	0	
	4-6	0	2	5	
	7-10	0	5	19	
	>10	0	7	22	
<b>4</b>	<b>Experience in Maternal and Child Health Services (in years)</b>				0.201*
	<1	0	0	0	
	1-3	0	0	0	
	4-6	0	2	5	
	7-10	0	5	19	
	>10	0	7	22	
<b>5</b>	<b>Previous exposure to Continuing Education or In service Education on HDPs</b>				0.0043*
	Yes	0	5	16	
	No	0	9	30	

Table 4 depicted that there was significant association between post-test level of knowledge and demographic variables.

## DISCUSSION

The findings of this study indicated that the pre-test level of knowledge on Hypertensive Disorders of Pregnancy among Auxiliary Nurse Midwives was moderate (60%), the post-test knowledge of ANMs was significantly improved to adequate level (76.67%) after an educational intervention. The “t-test” score between pre-test and post-test knowledge regarding Hypertensive Disorders of Pregnancy was 25.97 (significant at the level of 0.05).

These findings revealed that the educational intervention was effective and it increased the level of knowledge among auxiliary nurse midwives on HDPs. So Null Hypothesis (H0) is rejected and Hypothesis (H1) is retained.

Regarding the association between the post-test level of knowledge and selected demographic variables, there was significant association between post-test level of knowledge regarding Hypertensive Disorders of Pregnancy with selected demographic variables like age, Designation, Working experience and previous exposure to educational programmes on HDPs. Thus Hypothesis was accepted.

#### **STRENGTHS AND LIMITATIONS OF THIS STUDY**

- A novel study evaluating the effect of an educational intervention to improve knowledge of Auxiliary Nurse Midwives in the early identification, diagnosis, prevention and management of Hypertensive Disorders in a selected health centres of West Bengal.
- This study attempts to strengthen the health care services in rural areas of West Bengal and similar settings.
- Focused on primary health care providers who give affordable services and accessible to everyone in their communities.
- This study may not be representative of all healthcare workers working in rural areas of West Bengal as some participants had regular continuing education sessions, whereas some did not.
- There was no inclusion of control group in the study. The Control group which may ensure the internal validity of the intervention.

#### **CONCLUSION**

This study concluded that the educational intervention improved the level of knowledge of Auxiliary Nurse Midwives regarding hypertensive disorders of pregnancy who are working

in selected health centres, West Bengal. These findings hold promise for the direction, development and improvement of on-going professional development programs for healthcare professionals focused on the prevention and management of HDPs in primary care. Further research with a larger sample size is needed in different parts of the country to assess the effectiveness and impact of outreach educational interventions in West Bengal.

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