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Effects of Nurse Led Group Based Education on Knowledge and Utilization of Antenatal Care Services among Pregnant Women

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ABSTRACT

Aims: Aim of the study is to determine the effects of nurse led group based education on knowledge of Antenatal care services among pregnant women.

Methods: A quasi-experimental study with a pre-post design was conducted. The study included 58 women aged 20-45, selected through purposive sampling. Data were collected via self-reported questionnaires in Urdu, focusing on demographic information and antenatal care knowledge.

Results: The study result showed that majority of participants were aged 25-34 years (62.1%), with a large proportion being housewives (44.8%) and from poor households (56.9%). Knowledge scores significantly improved post-intervention, rising from 8.31±2.76 to 16.40±4.20 ($p < 0.001$). After the intervention, 58.8% achieved good knowledge compared to 54.2% pre-intervention.

Conclusion: The study concluded that nurse led education intervention significantly improve knowledge of pregnant women

Keywords: *Education; Nurse; Antenatal Care Services; Pregnant Women*

1. INTRODUCTION

Maternal health encompasses the well-being of women during their reproductive years, spanning from pre-pregnancy to pregnancy and the postpartum period while caring for their young children. Maternal health care aims to reduce rates of morbidity and death among women by offering comprehensive healthcare services to them before to, during, and after pregnancy, as well as throughout the time between pregnancies [1].

Pregnancy-related health issues can have detrimental effects on the mother, her unborn child, her family, and her community [2]. Maternal health and healthcare play crucial roles in determining the survival of newborns and the overall health outcomes of children. Consequently, enhancing the health of mother and child is a significant objective in global public health [3].

Antenatal care (ANC) is a critical healthcare service that plays a significant role in reducing maternal and neonatal mortality [4]. According to the World Health Organization (WHO), for pregnant women without perinatal complications, sufficient ANC involves a minimum of four healthcare visits during pregnancy [5].

It is important for women to get checked by medical facility after missing first period to confirm the pregnancy [6]. Medical facility can help females to detect pregnancy and guide related to pregnancy issues. Consequently, it's important to start ANC care at the appropriate moment [7].

Pakistan is among the South Asian nations with the highest rate of maternal mortality. Despite having signed Agenda 2030, the nation is still far behind in accomplishing the Sustainable Development Goals (SDGs) [8]. In the nation's rural areas, the maternal mortality rates is significantly higher. Maternal mortality and morbidity rates in Pakistan are high due to a number

of important contributing factors, including socioeconomic factors, poverty, malnutrition, lack of access to health care, and high rates of violence against women in rural regions [9]. Therefore, the aim of study is to determine the effects of nurse led group based education on knowledge and utilizationof Antenatal care services among pregnant women

2. MATERIAL AND METHODS

A quasi-experimental study with a single pre-post group design was conducted to assess the effect of a nurse-led group-based educational intervention on antenatal care knowledge and service utilization among pregnant women in the Dhaka Nizam Pura community of Tehsil Ferozwala, District Sheikhpura, Union Council 30. The study targeted pregnant women aged 20-45 who attended antenatal care services, utilizing a purposive sampling technique to recruit 58 participants based on specific inclusion criteria. The data collection process involved administering self-reported questionnaires in Urdu, assessing demographic information, knowledge of antenatal care. The study was carried out over nine months, divided into pre-assessment, implementation, and post-assessment phases. During the pre-assessment phase, written informed consent was obtained, and knowledge and utilization were measured using validated tools. The educational intervention spanned five months, using diverse teaching methods, and was followed by a one-month post-assessment to evaluate changes in knowledge and service utilization. Data were analyzed using SPSS Version 24, with descriptive statistics and comparative analyses applied to assess the intervention's effectiveness.

Demographic Characteristics of participants

Table 4.1: Demographic characteristic of participants

Variable	Categories	Frequency	Percentage
Age	<25 Year	14	24.1%
	25-34 year	**36**	**62.1%**
	35-45 years	8	13.8%
Education Level	Primary or below	18	31.0%
	Secondary	**26**	**44.8%**
	High	7	12.1%
	Above High	7	12.1%
Occupation	Housewife	**26**	**44.8%**
	Government Job	13	22.4%
	Private Job	19	32.8%
Household Wealth Index	Poor	**33**	**56.9%**
	Middle	19	32.8%
	Rich	6	10.3%
Parity	Primiparous	**41**	**70.7%**
	Multiparous	17	29.3%
Pregnancy	Low Risk	**46**	**79.3%**
	High Risk	12	20.7%

Table 4.1 provides an overview of the demographic characteristics of nurses. In terms of age, the majority (62.1%) are in the 25-34 year range, followed by 24.1% under 25 years and 13.8% aged 35-45 years. Regarding education level, a significant portion has completed secondary education (44.8%), while 31.0% have primary education or below, and only 12.1% have completed high school or higher. When examining occupation, most participants are housewives (44.8%), with others employed in private jobs (32.8%) or government positions (22.4%). The household wealth index indicates that over half (56.9%) are classified as poor, while 32.8% fall into the middle category and only 10.3% are considered rich. In terms of

parity, a substantial majority are Primiparous (70.7%), indicating they are having their first child, compared to 29.3% who are multiparous, having had more than one child. Finally, the data shows that most participants are classified as low risk during their pregnancy (79.3%), while a smaller percentage (20.7%) are considered high risk.

4.2. Comparison of Knowledge and Practice Score of participants' pre and post intervention

variables	**Pre-Education**	**Post-Education**	**p-value**
Knowledge Score	8.31±2.76	16.40±4.20	<0.001*
Practice Score	9.29±10.05	27.43±4.02	<0.001*

Wilcoxon Signed Ranks Test

Table 4.2 compares the knowledge and practice scores of participants before and after the educational intervention. The mean knowledge score increased significantly from 8.31±2.76 before the intervention to 16.40±4.20 after the intervention, with a p-value of <0.001, indicating a statistically significant improvement. Similarly, the practice score showed a substantial increase from 9.29±10.05 pre-education to 27.43±4.02 post-education, also with a p-value of <0.001, further highlighting the significant impact of the educational intervention on participants' practice performance.

4.3. Comparison of Pre and Post Knowledge

Post Knowledge	**Pre-knowledge**		**Total**	**P-Value**
	Poor Knowledge	**Average Knowledge**		
Poor Knowledge	0(0.00%)	3(12.50%)	3(5.20%)	0.061
Average Knowledge	14(41.20%)	8(33.30%)	22(37.90%)	
Good Knowledge	20(58.80%)	13(54.20%)	33(56.90%)	
Total	34(58.62%)	24(41.38%)	58(100.00%)	

Likelihood Ratio 5.580

Table 3 presents comparison of pre- and post-knowledge participants' knowledge following the intervention. Prior to the intervention, 54.2% of participants had good knowledge, 33.3% had average knowledge, and 12.5% had poor knowledge. After the intervention, no participants remained in the poor knowledge category, with 58.8% demonstrating good knowledge and 41.2% having average knowledge. This shift indicates that the educational intervention effectively enhanced the knowledge levels of participants, as the majority moved from lower categories to improved knowledge post-intervention. The Pre and Post knowledge has no association with each other (p-value 0.061).

4.4. Comparison of Pre and Post Practice findings

Post Practice	Pre-Practice		Total	P-Value
	Incompetent	Competent		
Incompetent	13(26.50%)	3(33.30%)	16(27.60%)	0.696
Competent	36(73.50%)	6(66.70%)	42(72.40%)	
Total	49(84.48%)	9(15.52%)	58(100.00%)	

Fisher's Exact Test

Table 4.4 compares the pre- and post-practice competency levels of participants. Before the intervention, 33.3% of participants were competent, while 66.7% were incompetent. After the intervention, a substantial improvement was observed, with 73.5% of participants becoming competent and 26.5% remaining incompetent. Despite this improvement, Fisher's Exact Test yielded a p-value of 0.696, indicating that the observed difference in competency levels between the pre-

and post-practice periods is not statistically significant. Thus, while there is an apparent positive shift in practice outcomes, the change is not significant at a statistical level.

3. DISCUSSION

This study aimed to assess the effect of nurse-led group education on the knowledge and utilisation of prenatal care services among pregnant women. The findings offer substantial insights into the impact of structured educational interventions on improving maternal health outcomes. This chapter analyses the key findings in relation to existing literature, explores possible causes for the observed changes in knowledge and antenatal care utilisation, and evaluates the implications of these findings for clinical practice. The paper discusses its shortcomings and offers recommendations for future research.

The majority of participants (62.1%) were aged 25–34. This pattern matches the Study, where most individuals were aged 30-40 [10]. The study's focus on a young group suggests that specialised recruiting approaches work for younger people. A particular study found similar age patterns in maternal health investigations, notably in low- and middle-income countries where younger populations give birth [11]. Higher-income cultures sometimes have a more uniform age range, perhaps due to delayed first-time motherhood [12].

A majority (44.8%) had completed secondary education. This contrasts with findings from studies [13], which indicate that higher educational attainment correlates with increased involvement in health-related research. The little presence of those with higher education (only 12.1% post-secondary) may indicate barriers to participation for those who prioritise work or family responsibilities over survey involvement. However, similar trends have been seen among individuals from rural or underprivileged backgrounds, where secondary education is the highest level of achievement for many due to budgetary constraints [14]. Research demonstrates that educational disparity is apparent, as those with lower educational attainment often have less access to health education, which may adversely impact their health literacy and participation in health studies [15].

The employment distribution reveals a significant percentage of housewives (44.8%), underscoring the persistence of traditional gender roles in various societies. This corresponds with broader trends observed in demographic studies, which indicate that women frequently engage more in domestic duties than in formal employment [16]. Similarly, another researches also supported this finding [17,18].

The current research shows significant enhancement in knowledge after education intervention. This results align with research demonstrated that different types of nutrition education markedly enhanced knowledge and dietary practices among pregnant women [7]. The findings proved that different interventional strategies can improve the knowledge of pregnant women [19].

The present study findings showed significant improvement in practice scores among participants after the educational intervention. This finding is aligned with research that showed enhancement in improvement of breastfeeding practices following intervention [4].

4. CONCLUSION

Antenatal care is very important for pregnant women. Therefore this study focus on antenatal care knowledge and practices of pregnant women. Most participants are primiparous with low-risk pregnancies. Following the intervention, the knowledge and techniques got better

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