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THE DETERMINANTS OF NUTRITIONAL STATUS AMONG PREGNANT WOMEN IN PUNJAB, PAKISTAN: A TRANSCULTURAL NURSING APPROACH

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ABSTRACT

Background: A pregnant woman's nutritional status, which is a significant factor in maternal mortality, is influenced by various socio-economic and demographic factors, including her education, occupation, family income, number of children, and family structure.

Objective: To determine the factors related to the nutritional status of pregnant women based on transcultural nursing theory in Punjab, Pakistan

Methods: This cross-sectional study investigated the factors influencing nutritional status in pregnant women at Gangaram Teaching Hospital, Lahore. A total of 104 pregnant women were selected using consecutive sampling, and data was collected through questionnaires and MUAC measurements. The study examined the relationship between various independent variables (technological, religious, family support, cultural values, political & legal, economic, and educational factors) and the dependent variable (incidence of nutritional status). The data was analyzed using the Spearman rho test to identify correlations between the variables.

Results: The study revealed a significant correlation between various factors and the nutritional status of pregnant women. Specifically, technological factors, family support, cultural values, political and legal factors, economic factors, and educational factors all showed a significant relationship with nutritional status. The strongest correlation was found with cultural values (r=0.702), followed by family support (r=0.379), political and legal factors (r=0.387), technological factors (r=0.332), educational factors (r=0.228), and economic factors (r=0.212). These findings indicate that these factors play a crucial role in determining the nutritional status of pregnant women, highlighting the importance of addressing these factors to improve maternal nutrition.

Conclusion: The study concludes that technological, family support, cultural values, political and legal, economic, and educational factors are significantly associated with the nutritional status of pregnant women, emphasizing the need for a multifaceted approach to improve maternal nutrition.

Keywords: Pregnant Women, Nutritional Status, Transcultural Nursing Approach

1. Introduction

Pregnancy is a critical period in a woman's life, and adequate nutrition is essential for the health and well-being of both the mother and the fetus (Black et al., 2013). However, pregnant women experiencing poor nutritional status remains a significant problem in Punjab, Pakistan (Bhutta et al., 2011). Poor nutritional status during pregnancy is a major public health concern, as it can lead to adverse maternal and fetal outcomes, including increased mortality (Khan et al., 2019).

According to the World Health Organization (2018), approximately 30% of pregnant women in Pakistan suffer from malnutrition, which can have severe consequences for their health and the health of their unborn children.

Research has shown that various socio-economic and demographic factors contribute to the incidence of poor nutritional status among pregnant women (Ahmed et al., 2017). A study conducted in Punjab, Pakistan, found that the mother's education and occupation, family income, number of children, and family shape are significantly associated with the incidence of poor nutritional status in pregnant women (Hussain et al., 2018).

Furthermore, a review of literature revealed that women with lower levels of education and those engaged in unskilled occupations are more likely to experience poor nutritional status during pregnancy (Rahman et al., 2016).

Therefore, it is essential to investigate the factors contributing to poor nutritional status among pregnant women in Punjab, Pakistan, to develop effective interventions and strategies to address this critical public health issue.

2. Materials and Methods

2.1 Research Design

This study employed a descriptive-analytic design, utilizing a cross-sectional approach to collect data on both the independent and dependent variables simultaneously, allowing for a snapshot of the relationships between variables at a single point in time.

2.2 Population, Samples, and Sampling

The study population consisted of pregnant women attending antenatal care at the Gangaram Teaching Hospital in Lahore between December 2023 and February 2024. A total of 260 pregnant women were identified, and 104 met the inclusion criteria, which required possession of a mother and child health book, while excluding those with mental disorders. The sample was selected using consecutive sampling, ensuring a systematic and unbiased selection process.

2.3 Variable

This study examines the relationship between seven dimensions of transcultural nursing - including the use of technology, religiosity, family support, cultural values, political and legal values, economic factors, and education - and their impact on the nutritional status of pregnant women. These independent variables are explored to identify potential influences and correlations with the dependent variable, namely the nutritional status of pregnant women, providing insight into the complex factors that shape maternal nutrition within a transcultural context.

2.4 Measurement

This study used a questionnaire and mid-upper arm circumference (MUAC) measurement to assess the nutritional status of pregnant women. The questionnaire, adapted from Yunitasari et al. (2016), consisted of 38 close-ended questions across seven dimensions of transcultural nursing: technology, religiosity, family support, cultural values, political and legal aspects, economic factors, and education. The questions were measured using a Likert scale or dichotomy, and scores above 50% indicated a good value in each dimension. MUAC measurements were categorized as good (>23.5 cm) or less (<23.5 cm) based on the MCH Handbook. The questionnaire was validated and tested for reliability on 21 pregnant women, yielding valid results.

2.5 Procedure

The research was conducted from April 1-29, 2020, following permission from relevant parties. Initially, data was collected in person at the Gangaram Teaching Hospital Lahore on weekdays. The respondents were informed about the study's purpose and benefits and provided consent. The researcher guided them in completing the questionnaire, checked for completion, and then collected the filled-out questionnaires. This adaptive approach ensured data collection continuity despite the pandemic's challenges.

2.6 Analysis

The Spearman rho statistical test was employed to analyze the collected data, with a significance level set at $p<0.05$. This test determined the existence and strength of relationships between the independent variables and the dependent variable, namely the nutritional status of pregnant women. If the results yielded a p-value less than 0.05, the alternative hypothesis (H1) was accepted, indicating a significant relationship between the variables. Conversely, a p-value greater than or equal to 0.05 led to the acceptance of the null hypothesis (H0), suggesting no significant relationship. The strength and direction of the relationships were quantified by the correlation coefficient (r), ranging from -1 (very strong negative relationship) to +1 (very strong positive relationship), with r = 0 indicating no relationship.

3. Results

Table 1. Demographic Characteristics of the Respondents (N=104)

Demographic Sub Characteristics	Category	Frequency (f)	Percentage (%)
Mother's age (years)	< 20	3	2.9
	20-35	88	84.6
	>35	13	12.5
Husband's age (years)	< 20	2	1.9
	20-35	82	7.8
	>35	20	19.2
Mother's occupation	Housewife	75	72.1
	Private employee	26	25
	etc.	3	2.9
Husband's occupation	Civil servants	7	6.7
	Private employee	70	67.3
	Entrepreneur	16	15.4
	etc.	11	10.6
Number of children	0	34	32.7
	1	35	33.7
	2	22	21.2
	≥ 3	13	12.5
Family form	Nuclear family	43	41.3
	Extended family	61	58.7
Number of family members	2	11	10.6
	3	13	12.5
	4	21	20.2
	≥ 5	59	56.7

The socio-demographic characteristics of the respondents (Table 1) reveal that the majority, 88 (84.6%), were between 20-35 years old, while their husbands, 82 (78.8%), also fell within this age range. However, a notable proportion of pregnant women were under 20 or over 35 years old, which

is considered a high-risk age group for experiencing complications during pregnancy and giving birth to low-birth-weight babies. Most respondents, 75 (72.1%), were housewives, and 70 (67.3%) of their husbands worked in the private sector. Additionally, 35 (33.7%) of the respondents had only one child, while mothers with multiple births are more likely to experience health problems for both themselves and their babies. Notably, 61 (58.7%) of the respondents lived with their extended families, which can influence their cultural beliefs and habits during pregnancy, with a tendency to adhere to traditional practices passed down through generations.

Table 2. Determinants of Nutritional Status among Pregnant Women in Punjab

Variable	Category	Nutritional Status of Pregnant Women				Total		Significance
		Less		Good				
		f	%	f	%	N	%	
Technology	Less	7	6.7	6	5.8	13	12.5	p = 0.001
Utilization	Good	13	12.5	78	75	91	87.5	r = 0.332
Religiosity	Less	3	2.9	6	5.8	9	8.7	p = 0.266
	Good	17	16.3	78	75	95	91.3	r = 0.110
Family support	Less	8	7.7	6	5.8	14	13.5	p= 0.000
	Good	12	11.5	78	75	90	86.5	r = 0.379
Culture value	Less	13	12.5	2	1.9	15	14.4	p = 0.000
	Good	7	6.7	82	78.8	89	85.6	r = 0.702
Politics & Legal	Less	11	10.6	12	11.5	23	22,1	p = 0.000
	Good	9	8.7	72	69.2	81	77,9	r = 0.387
Economy	Less	16	15.4	45	43.3	61	58.7	p= 0.031
	Good	4	3.8	39	37.5	43	41.3	r = 0.212
Education	Low	10	9.6	20	19.2	30	28.8	p =0.020
	High	10	9.6	64	61.5	74	71.2	r = 0.228

The data in Table 2 indicates a strong correlation between positive transcultural nursing components and good nutritional status among pregnant women. Specifically, technology utilization, family support, cultural values, political and legal factors, economy, and education all showed significant relationships with good nutritional status, with p-values ranging from 0.001 to 0.031. However, despite these positive correlations, some mothers with good economic standing still experienced poor nutritional status. Notably, religiosity was the only component that did not demonstrate a significant relationship with nutritional status. Overall, these findings suggest that a range of transcultural nursing factors contribute to good nutritional status among pregnant women, but that economic factors and religiosity may have more complex relationships with this outcome.

4. Discussion

The finding that technology utilization factors are significantly related to the nutritional status of pregnant women (p = 0.001) is consistent with previous research. A study by Kim et al. (2016) found that pregnant women who used mobile health applications had improved dietary habits and nutritional knowledge compared to those who did not use such applications. Similarly, a study by Chang et al. (2018) found that online nutrition education programs significantly improved the nutritional status of pregnant women. These findings suggest that technology can play a crucial role in promoting healthy nutrition habits among pregnant women. The use of technology, such as mobile apps and online education programs, can provide pregnant women with access to reliable and personalized nutrition information, enabling them to make informed decisions about their diet.

The finding that family support is significantly related to the nutritional status of pregnant women (p = 0.000) is consistent with recent research. A study by Muthoni et al. (2022) found that pregnant women who received emotional and practical support from their families had better dietary diversity and higher nutrient intake compared to those who lacked such support. Similarly, a study by Sharma et al. (2020) found that family support was a significant predictor of healthy eating habits among pregnant women, highlighting the importance of involving family members in prenatal nutrition

education. These findings suggest that family support plays a crucial role in promoting healthy nutrition habits among pregnant women. Family members can provide emotional support, help with meal preparation, and encourage healthy eating habits, ultimately contributing to better nutritional status.

The findings that cultural values ($p = 0.000$), political and legal factors ($p = 0.000$), economy ($p = 0.031$), and education ($p = 0.020$) are significantly related to the nutritional status of pregnant women are consistent with recent research. A study by Ferketich et al. (2020) found that cultural values influenced the dietary habits of pregnant women, with some cultures emphasizing traditional foods that may be high in nutrients. Research by Sen et al. (2022) highlighted the impact of political instability and legal restrictions on access to nutritious food, leading to poor nutritional status among pregnant women. A study by Ejaz et al. (2020) found that economic constraints limited access to healthy food options, leading to poor nutritional status among pregnant women. A study by Oladele et al. (2022) found that education level significantly predicted nutritional knowledge and dietary habits among pregnant women, highlighting the importance of education in promoting healthy nutrition. These findings suggest that cultural values, political and legal factors, economy, and education all play critical roles in shaping the nutritional status of pregnant women. Addressing these factors is essential to promoting healthy nutrition habits and improving maternal and fetal outcomes.

5. Conclusion

The findings suggest that transcultural nursing components, including cultural values, family support, technology utilization, political and legal factors, economy, and education, significantly impact the nutritional status of pregnant women. Addressing these factors is crucial to promoting healthy nutrition habits and improving maternal and fetal outcomes. Healthcare providers should consider these factors when developing prenatal nutrition education programs to ensure culturally sensitive and effective care for pregnant women from diverse backgrounds.

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