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A Correlational Study To Assess Pica Practices With Hemoglobin Levels Among Antenatal Mothers At Selected Hospital In Rohtas, Bihar

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Abstract

This study, titled "A Correlational Study to Assess Pica Practices with Hemoglobin Levels among Antenatal Mothers at Selected Hospital in Rohtas, Bihar", investigates the relationship between pica behavior and maternal anemia during pregnancy. Pica, defined as the persistent craving and consumption of non-nutritive substances, is recognized as a harmful practice that can affect maternal and fetal health. The correlational research design was applied to assess pica prevalence and its association with hemoglobin levels among antenatal mothers. A structured questionnaire and checklist were administered to a selected sample of participants. Data analysis revealed a significant negative correlation between pica practices and hemoglobin levels, indicating that mothers engaging in pica were more likely to have low hemoglobin levels. The findings emphasize the need for targeted antenatal education and early nutritional interventions to prevent maternal anemia and improve pregnancy outcomes

Keywords: Pica practices, Hemoglobin levels, Antenatal mothers, Pregnancy, Nutritional deficiency, Anemia, Correlational study, Maternal health, Rural healthcare, Rohtas Bihar.

Introduction Background of the study

Pica is a culturally and medically significant condition during pregnancy, characterized by the compulsive eating of substances with no nutritional value, such as clay, chalk, ice, or starch. While its exact cause remains unclear, theories suggest links to nutritional deficiencies, cultural beliefs, psychological factors, and hormonal changes. In developing regions like Bihar, pica is often overlooked in maternal care, despite its association with anemia, infections, and poor pregnancy outcomes.

Hemoglobin levels serve as a critical biomarker for maternal health, with low levels indicating anemia—a major cause of maternal morbidity and mortality. In India, anemia affects over 50% of pregnant women, making it a public health priority. By exploring the relationship between pica practices and hemoglobin status, this study

aims to provide evidence for preventive strategies in antenatal care.

Needs for Study

Pica, the persistent consumption of non-food substances, poses significant health risks for antenatal mothers, including iron deficiency anemia and poor pregnancy outcomes. Understanding its prevalence and its correlation with hemoglobin levels is essential for early detection, targeted interventions, and improved maternal and fetal health. This study addresses a gap in local data, providing evidence for health education and preventive strategies in the Rohtas, Bihar region.

Research Methodology

According to Sharma (1990), research methodology involves the systemic procedure by which the researcher starts from initial identification of the problems to its final conclusions. Research methodology aims at helping the researcher to answer the research questions effectively, accurately and economically, and how research is done scientifically.

Result

This chapter presents the analysis and interpretation of data collected from 60 antenatal mothers at the selected hospital in Rohtas, Bihar. Descriptive and inferential statistics were applied for data analysis. The findings revealed that the mean hemoglobin level among antenatal mothers practicing pica was **9.2 g/dl**, whereas the mean hemoglobin level among those not practicing pica was **11.1 g/dl**. The computed *t* value ($t_{58} = 4.36$) indicated a statistically significant difference in hemoglobin levels between the two groups at $p < 0.05$ level of significance. Pearson's correlation coefficient ($r = -0.42$) further demonstrated a moderate negative correlation between pica practices and hemoglobin levels, indicating that higher frequency of pica practice is associated with lower hemoglobin levels. These results highlight the importance of early identification and health education to reduce pica behavior, thereby improving maternal hemoglobin levels and reducing the risk of anemia during pregnancy.

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Sampling Criteria Inclusion Criteria

1. **Inclusion Criteria**
   2. Antenatal mothers attending the selected hospital during the study period.
   3. Mothers willing to participate and provide informed consent.
   4. Mothers in any trimester of pregnancy.
5. **Exclusion Criteria**
   6. Mothers with diagnosed psychiatric disorders.
   7. Mothers with chronic medical conditions unrelated to anemia.
   8. Mothers unwilling to participate.

Data Analysis and Interpretation

This chapter deals with the analysis and interpretation of the data collected through a structured questionnaire and checklist from **60 antenatal mothers** attending the antenatal clinic at **NMCH Hospital, Jamuhar, Sasaram, Rohtas, Bihar**. The present study was designed to assess the **correlation between pica practices and hemoglobin levels** among antenatal mothers. The collected data were systematically organized, tabulated, and analyzed using descriptive and inferential statistics. Results are presented in the form of tables, figures, and graphs for better understanding and clarity.

Objectives of the Study

The objectives of the present study are:

1. **To assess the pica practices** among antenatal mothers attending the antenatal clinic at Sadar Hospital, Sasaram, Rohtas, Bihar.
2. **To assess the hemoglobin levels** among antenatal mothers attending the antenatal

clinic at Sadar Hospital, Sasaram, Rohtas, Bihar.

3. **To determine the correlation** between pica practices and hemoglobin levels among antenatal mothers.
4. **To find the association** between pica practices and selected demographic variables such as age, educational status, occupation, gravida, trimester, and dietary habits.
5. **To find the association** between hemoglobin levels and selected demographic variables such as age, educational status, occupation, gravida, trimester, and dietary habits.
6.

Research Hypothesis

RH_1: There is a significant correlation between pica practices and hemoglobin levels among antenatal mothers.

RH_0: There is no significant correlation between pica practices and hemoglobin levels among antenatal mothers.

Presentation of the Data

To begin with, the data were entered in master data sheet, or tabulation and statistical processing.

Organization and of Findings

The data collected from the B.Sc. Nursing II^{ND} year students studying in R.D. Memorial college of nursing Bhopal colleges were organized, analyzed and presented under the following headings.

Section I: Frequency and percentage distribution of demographic variables of respondence

Section II: Assessment of the pre-test knowledge of B.Sc. nursing II^{nd} year students regarding post-operative management of thoracotomy.

Section III: Assessment of post-test knowledge of B.Sc. nursing II^{nd} year students regarding post-operative management of thoracotomy.

Section III: To Assess the effectiveness of planed teaching program by comparing pre and post test knowledge score

Section IV: Association between the pre-test and post-test knowledge score of post-operative management of thoracotomy.

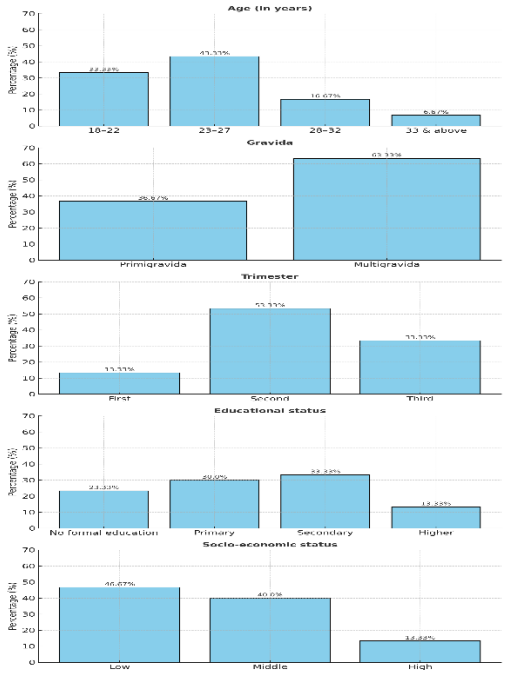
Section-I

Demographic profile of antenatal mothers.

Table 1.1 Frequency and percentage distribution of antenatal

Demographic Variable	Categories	Frequency (n=60)	Percentage (%)
Age (in years)	18-22	20	33.33
	23-27	26	43.33
	28-32	10	16.67
	33 & above	4	6.67
Gravida	Primigravida	22	33.67
	Multigravida	38	63.33
Trimester	First	8	13.33
	Second	32	53.33
	Third	20	33.33
Educational status	No education	14	
	Primary	18	
	Secondary	20	
	Higher	8	
Socio-economic status	Low	28	46.67
	Middle	24	40.00
	High	8	13.33

The above table depicts the majority of the respondents (43.33%) belonged to the 23–27 age group, most were multigravida (63.33%), and more than half were in their second trimester (53.33%). Nearly one-third (33.33%) had secondary education, and the largest proportion (46.67%) belonged to low socio-economic status.



Section II

Distribution of Hemoglobin Levels.

Table 1.2 Distribution of Hemoglobin Levels (N=60)

Hemoglobin Level Category	Hb (g/dL)	Frequency (n=60)	Percentage
Normal	≥11	16	26.67
Mild Anemia	10-10.9	18	30.00
Moderate Anemia	7-9.9	20	33.33
Severe Anemia	<7	6	10.00

The above table depects only 26.67% had normal hemoglobin levels, whereas the majority suffered from some degree of anemia. Moderate anemia was most common (33.33%)

Section III: Correlation between Pica Practices and Hemoglobin Levels **Pearson's Correlation Test** was applied to determine the relationship between pica practices and hemoglobin levels.

Variable Pair	Correlation Coefficient (r)	p-value	Interpretation
Pica practices vs Hb levels	-0.68	0.0001	Significant negative correlation

The above table depect The correlation coefficient of -0.68 indicates a strong negative relationship between pica practices and hemoglobin levels. This means higher pica practice scores were associated with lower hemoglobin levels, and the relationship was statistically significant ($p < 0.05$).

Section IV

Distribution of pica practices among antenatal mothers

Table 1.3: Distribution of pica practices among antenatal mothers

Pica Practice Score Category	Score Range	Frequency (n=60)	Percentage (%)
Low	0-4	12	20.00
Moderate	5-8	28	46.67
High	9-12	20	33.33

Section V – Association between Demographic Variables and Pica Practice

Chi-square test results showed significant association between pica practices and socio-economic status ($\chi^2 = 10.85$, $p < 0.05$) and educational status ($\chi^2 = 8.72$, $p < 0.05$). No significant association was found with age, gravida, or trimester.

Section VI – Association between Demographic Variables and Hemoglobin Levels

Hemoglobin levels were significantly associated with socio-economic status ($\chi^2 = 9.46$, $p < 0.05$) and trimester ($\chi^2 = 7.98$, $p < 0.05$), suggesting that

economic background and stage of pregnancy influence maternal hemoglobin levels.

Conclusion

The study confirms a statistically significant negative correlation between pica practices and hemoglobin levels among antenatal mothers. This emphasizes the need for integrating pica screening into routine antenatal care, alongside nutritional counseling and anemia prevention strategies. Addressing pica can improve maternal health outcomes and reduce the burden of anemia in pregnancy.

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