Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/6sdaje03

EVALUATION OF KNOWLEDGE OF PREGNANT WOMEN ABOUT THE USE OF FOLIC ACID SUPPLEMENTS TO PREVENT NEURAL TUBE DEFECTS IN NEWBORNS

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ABSTRACT

Background

The aim of the study is to evaluate the knowledge level of pregnant women attending a gynecology ward regarding the significance of folic acid that may deduct neural tube defects (NTDs) in newborns. Infant death and impairment are primarily caused by neural tube abnormalities. Pregnancy-related folate insufficiency has been connected to their incidence. Use of folate throughout pregnancy has been demonstrated to dramatically lower their incidence. It is essential to recognize this association in order to take the proper preventative action.

Methodology

This study utilized cross-sectional design to collect data from 80 pregnant women aged 18-45 visiting the gynecology ward at Arif Memorial Teaching Hospital, Lahore. A self-administered questionnaire was employed after review from 3 experts to collect data on demographics as well as knowledge about folic acid supplementation. The data analysis was done by applying SPSS version 23.0, which involved descriptive statistics and Pearson correlation to identify patterns and relationships.

Results

Participants in the study had significant gaps in their knowledge of folic acid and pregnancy; 40.8% were categorized as having poor knowledge, 30.2% as having moderate knowledge, and 29% as having high information. The use of folic acid supplements was positively correlated ($r = 0.249$, $p = 0.026$) with pregnancy, suggesting that women who started taking it before becoming pregnant were more likely to continue doing so. However, there was no significant correlation between preconception folic acid use and knowledge of the supplement's potential to prevent neural tube defects ($r = -0.093$, $p = 0.414$) or between folic acid use during pregnancy and knowledge of this relationship ($r = -0.049$, $p = 0.664$). To close these knowledge gaps and encourage appropriate folic acid supplementation practices during pregnancy, these findings highlight the critical need for focused educational efforts.

Conclusion

A comparison with existing research revealed inconsistent knowledge levels and awareness. Therefore, the study emphasizes the need for targeted educational programs to enhance maternal and child health outcomes and reduce NTD incidence. Healthcare providers and public health

initiatives play an important part in promoting conscious of folic acid supplementation and its crucial role in prenatal care.

Keywords :- Folic Acid, Pregnancy, Birth Defects, Knowledge.

1.INTRODUCTION

BACKGROUD

The physiological and psychological changes that occur during pregnancy are a result of the growth of the fetus, which affects many organs and systems. Pregnancy care is essential for both the health of the mother and the developing fetus, even though most pregnancies go well without the need for specialized medical care. Folic acid, also referred to as folate or vitamin B9, is essential for DNA processes such as synthesis, replication, repair, and methylation, as well as cellular protection. Since the human body cannot produce folic acid, it must be obtained through diet, supplements, or fortification; citrus fruits and leafy greens are rich in this vitamin (Nassejje & Were, 2024).

Folic acid (FA) is widely recognized to be essential in lowering the risk of developing (NTDs). Pregnancy-related FA supplementation is essential to lower the risk of non-transformed diseases (NTDs), according to prior research findings. Prior to becoming pregnant roughly 70% of NTDs are prevented with FA supplementation, according to the material currently in publication. Decreased risk of non-transformed diseases (NTDs) can therefore be achieved by consuming FA before conception and during the periconceptional period (first trimester of pregnancy) (Areyadasa et al, 2023).

The neuroectoderm tabularizes and then closes its anterior and posterior apertures on days 21 and 28, respectively; resulting in the development of the brain and spinal cord. The posterior portion develops the spinal cord, whereas the anterior portion forms the brain. Two a congenital condition known as Neural Tube Defect (NTD) may arise from the failure of these closures. There are three possible locations for the defect: the entire tube (posterior rachischisis), the brain portion (encephalocele, anencephaly), or the spinal portion (meningocoele, myelocoele, or myelomeningocoele) (Usman & Abubakar, 2021).

Among the most prevalent congenital defects are NTDs. They raise the possibility that a pregnancy will terminate in miscarriage. They also result in severe congenital abnormalities, disability, and infant mortality. Ten percent of all neonatal deaths are caused by NTDs, which also cause 2.3 million impairments and 41.000 deaths annually. NTDs affect 0.5-2 out of every 1000 pregnancies and roughly 2-3% of live births worldwide. Due to low living standards, inadequate prenatal care, and a low rate of abortions, it has been stated that the incidence of non-transferable diseases (NTDs) is up to four times higher in developing nations than in developed ones (Altindağ & Layık, 2024).

Ultrasound is a useful screening tool for neural tube abnormalities (NTDs) and can be used in routine investigations. The disease and elevated maternal serum Alpha-fetoprotein have a positive correlation. In the event that an ultrasound is inconclusive, an MRI is also conducted. Additionally, there is a strong correlation between maternal serum folate levels and the likelihood of the condition developing (Khan et al., 2024).

Neural tube defects (NTDs) are birth defects of the brain and spinal cord that occur early in pregnancy due to incomplete neural tube closure. They can cause significant morbidity, disability, and death, with spina bifida, anencephaly, and encephalocele being common examples. While medical advancements have improved survival rates, long-term care requires substantial financial investment, impacting caregivers, healthcare systems, and families emotionally and socially. Globally, over 300,000 babies are born with NTDs annually, with the greatest burden in low- and middle-income countries (Sisay et al., 2021).

In Pakistan, 39.7% of women are anemic, in which mild anemia found in 79%, moderate anemia is 53% and severe 2%. Not much is known about Pakistan's attitudes toward and obstacles to using FA supplements during pregnancy (Noorani et al., 2024).

Neural tube defects (NTDs) are complex disorders that are influenced by genetic variations affecting folic acid metabolism and neural tube closure, as well as gene-environment interactions. Prenatal folic acid supplementation and avoiding teratogenic substances can reduce the risk of NTDs, which have a negative impact on patient outcomes and present treatment challenges. The exact etiological factors that cause NTDs are still unknown, highlighting the multifactorial nature of these conditions and the need for comprehensive prenatal care strategies (NEHIR et al., 2024).

Global fortification initiatives reflect the finding that folic acid intake before and throughout pregnancy greatly reduces the risk of neural tube defects (NTDs). Because open NTDs have partial neural tube closure, early surgical intervention is frequently necessary to prevent infection and preserve exposed brain tissue. Continuous neurological monitoring after surgery is essential to evaluate function and handle any problems. Physical therapy is a key component of long-term management; it is customized to each patient's needs and the severity of the impairment in order to improve muscular strength, mobility, and overall function (Mosiell et al., 2021).

The newborn or infant with an open NTDs were kept warm and the defect was covered with a sterile wet saline dressing. The patient should be positioned in the prone position to prevent pressure on the defect. Oxygen therapy was offered to patients with respiratory distress. Clean intermittent catheterization (CIC) was used in patients with urinary incontinence. Broad spectrum antibiotics were used to prevent and or treat infections (Meningitis, septicemia, wound infection) in all patients with open NTDs (Motah et al., 2017).

PURPOSE OF THE STUDY

This research attempts to investigate and understand the comprehension and familiarity of women visiting Arif Memorial Teaching Hospital, Lahore, about folic acid supplements in preventing natal flaws of the brain and spine (neural tube defects) in their unborn babies. The goal is to:

- Assess their level of understanding
- Identify areas of confusion or misinformation
- Develop targeted education programs to improve knowledge and health outcomes
- Enhance prenatal care and healthcare practices
- Ultimately reduce the frequency of neural tube abnormalities and improve newborn health in Pakistan.

STUDY QUESTION

What is the degree of knowledge that pregnant women posses attending Arif Memorial Teaching Hospital, Lahore, about folic acid supplementation's potential to prevent neural tube abnormalities in newborns?

PROBLEM STATEMENT

Although the benefits of folic acid supplementation in reducing neural tube defects (NTDs) in neonates are well-established, there is still a significant awareness gap among pregnant women of reproductive age, both locally and globally. Worldwide rates of infant death and morbidity are greatly impacted by neural tube disorders, including spina bifida and anencephaly. Globally, there are approximately 214,000-322,000 affected pregnancies occurred worldwide annually. According to research, taking folic acid both before and throughout the early stages of pregnancy greatly reduces the likelihood that the unborn child would suffer neural tube abnormalities. NTDs with a 50% estimated infant death rate among those affected. NTDs happen in about 3,000 pregnancies each year in the United States. Furthermore, the authors provide the prevalence rates of NTD per 10,000 live births without folic acid supplementation for the following regions: Sub-Saharan Africa (15.27), Southern Asia (31.96), East Asia (19.44), Northern Africa and Western Asia (17.45), and East Asia (19.44).Survivors frequently experience a reduced quality of life and permanent disability.

SIGNIFICANCE

This study is significant because it will provide researchers with a foundational understanding to evaluate the degree of understanding and adherence to recommended folic acid intake that are proven in order to be useful in lowering the prevalence of NTDs. The current study aims to identify potential knowledge gaps or areas for improvement in that could be targeted for intervention or education programs by examine the existing state of knowledge regarding neural tube defect. Assessing women's awareness of using folic acid supplements to prevent neural tube abnormalities (NTDs) in infants is important in a lot of different ways. Increased knowledge translates into empowered decision-making about prenatal health for participants, especially women of reproductive age. These women can take proactive steps to maintain their health by being aware of the advantages of taking folic acid supplements. This could lower the risk of non-trans-placental defects (NTDs) in their offspring and reduce their anxiety over the result of their pregnancy. Patients' increased knowledge can help hospitals and healthcare providers by improving the quality of prenatal care and informing specialized educational programmes. Researchers will find these results equally significant as they provide important new information on areas of current knowledge gaps and guide future study on successful educational interventions. Additionally, by using this data, policymakers can support evidence-based policies that encourage folic acid supplementation, potentially improving population health outcomes and furthering programmes related to maternal and child health. Therefore, this study has significance for healthcare delivery, research developments, and policy creation focused at improving mother and child health outcomes internationally, in addition to addressing individual health literacy. So this is very essential that every woman should have proper knowledge regarding this. It's an incredibly easy and efficient method to promote healthy pregnancies and protect the well-being of newborns. This study will be help full to motivate women to prevent their babies from neural tube defects.

SUMMARY

The significance of supplementing with folic acid in avoiding neural tube abnormalities (NTDs) in neonates is the subject of this extensive study. It looks at the physical and mental changes that pregnant women go through as well as the significance of prenatal care for the mother's and the fetus's health. The study discusses the high rate of anemia among Pakistani women and how it can affect taking pills containing folic acid while pregnant. As per study's goal of determining awareness levels in a tertiary care private hospital context, the research question centers on evaluating women's understanding of using folic acid supplements to prevent NTDs. To get better maternal and infant health outcomes and guide future interventions, the study's hypotheses also suggest connections between supplementing with folic acid and the prevention of NTD. The project aims to decrease non-communicable diseases (NTDs) and encourage healthier pregnancies in Pakistan by evaluating knowledge levels and adherence to folic acid intake.

LITERATURE REVIEW

LITRATURE: A population-based cross-sectional study conducted in Northern Saudi Arabia involving 428 Saudi women found that most (85%) had been prescribed folic acid, and a majority believed it was advisable during pregnancy (95.1%) and essential before pregnancy (75.2%). While 85.3% used folic acid supplements during pregnancy, only 8.4% had attended a seminar on its importance. Notably, 31.3% believed supplementation should stop after pregnancy, and 84.6% recognized the link between folate deficiency and fetal abnormalities (Alanazi & Mohamed Hammad, 2021).

A descriptive cross-sectional research was conducted in the second Al-Adha Center in Baghdad, Iran, from January 1 to February 28, 2017.170 married women between the ages of 15 and 49 were included in the research. There were 7 (4.1%) uneducated people and 70 (41.1%) highly educated people. 79% of them were aware that they needed to take folic acid. Its importance throughout pregnancy was known by about 61.2% of people, but only 47.1% were aware of its prenatal

benefits. In the first month of the previous pregnancy, 76.5% of women started taking folic acid. Over half (57.7%) made daily use of it. The findings also indicate a strong correlation among age of women, level of education, and parity with their familiarity with folic acid and its significance (Yahiya B.T, 2019).

In June 2019, the University of Ukraine's Medical Faculty students participated in this cross-sectional survey. 96.5% students were aware that the vitamin folic acid was classified as, and 95.6% knew of one natural substance that contained a high concentration of folate. But not enough people were aware of how much was in certain goods. Entire sample: 86.8% understood that congenital abnormalities were caused by folic acid deficiency during pregnancy. Only 67.5% and 53.5%, respectively, of people were aware that synthetic folic acid supplements may be taken before and during pregnancy. Of the female medical students, just 10% frequently took folic acid. (Hlushko et al., 2021)

In 2017, a cross-sectional descriptive study was conducted in Saveetha medical college and hospital in India. The ladies who visited the outpatient department of obstetrics and gynecology as pregnant patients are the study population. Of the two hundred expectant mothers, one hundred and fifty-three (76.5%) had heard about FA, primarily from medical professionals (94.7%). The effects of FA in preventing anemia and promoting brain development were known to sixty-one women (30.5%) and nine women (4.5%), respectively. Fifteen (7.5%) of the women knew the amount of FA, and nine (4.5%) could name a diet high in FA. Out of 150 women (75%) FA was only taken following a pregnancy diagnosis; just 32 women (16%) took it periconceptionally. Not one but eighteen (9%) of the pregnant ladies took FA. Among the 131 women (65.5%) who were planning a pregnancy, only 48 women (36%), had taken periconceptional antibiotics (Ethirajan & Pritem., 2020).

In Jeddah, Saudi Electronic University (SEU) conducted a cross-sectional survey among 312 female students. The results showed that 81.1% of the students had heard of folic acid, 30.4% had knowledge about neural tube abnormalities, and 47.1% had used folic acid supplements. Marriage, a focus on health sciences, and educational attainment were found to have substantial correlations with folic acid awareness. Also connected to thorough understanding of folic acid was prior pregnancy experience. The research emphasizes that in order to increase women of childbearing age's knowledge and use of folic acid, health education and awareness programmes are necessary (AL-Mohaithef et al., 2021).

In a cross-sectional study conducted in Ankara, Turkey from August to December 2018, 1442 women (1106 non-pregnant, 336 pregnant) were polled. It was discovered that 89% of pregnant women and 77.2% of non-pregnant women had heard about folic acid. Compared to non-pregnant women (41.4%), pregnant women (53.9%) knew more about the advantages of it before getting pregnant. 75.2% of pregnant women and only 15.1% of non-pregnant women used folic acid supplements. The dietary folate and folic acid intake of pregnant women was much higher than that of non-pregnant women. In spite of public health initiatives, women of reproductive age still have low levels of folic acid awareness, knowledge, and recommended use (Karaçil Ermumcu et al., 2020).

In the University Maternity Hospital in Limerick, a prospective observational study lasting six weeks was carried out. The majority of women seeking prenatal care, according to this survey, were taking daily folic acid supplements in accordance with national guidelines. But only 30.5% (n = 100) followed public health guidelines and started taking supplements before 12 weeks before getting pregnant. Furthermore, the schedule for taking supplements of folic acid varied among the 96% (n 315) of women who reported taking it currently, ranging from any point in time between more than 12 weeks before conception to the day of their initial consultation for prenatal booking. Women appearing at their initial session ranged in gestation from 4 to 30 weeks, to put this into perspective (Linnell & Cremona, 2022).

The research was carried out from December 18, 2022, to March 30, 2023, at King Faisal University's main health polyclinic in Al Ahsa, Saudi Arabia. A comprehensive examination of the literature led to the development of a 22-item self-constructed questionnaire used in the study.

There were twelve components total—six socio demographic, two obstetric, four awareness, six knowledge, and three attitudes. Through systematic randomized sampling, 385 females were included in the sample. The data analysis programme utilized was SPSS version 26.0. The participants had good knowledge scores and a positive attitude towards the intake of folic acid, but they were less aware of neural tube abnormalities and knew less about the recommended folic acid dosage for pregnancies at low-risk (Tehsin et al., 2024).

A cross-sectional study conducted on 350 married women in the gynecology department of the District Head Quarter (DHQ) Hospital in Faisalabad, Pakistan, and published on March 30, 2022, highlights the incredibly low levels of knowledge regarding NTDs and folic acid consumption among women in Pakistan. According to research, 85.4% of people were not aware of neural tube defects, and 76.7% of participants claimed they were not aware that folic acid was used. The majority of individuals (86.2%) were unaware that folic acid protects against diseases that are not transformed (NTDs) (Yasmin et al., 2022).

An analysis of case-control data about maternal nutrition and neural tube defects in Bangladesh was released on August 15, 2019. This study included 110 matched mother-infant pairs, 55 of which were cases and 55 of which were controls. Mothers of cases and mothers of controls consumed similar amounts of calories [median 2406 kcal/day vs. 2196 kcal/day (p=0.071)]. Mothers of cases and mothers of controls took less than half of the recommended 600 µg of folate per day (Obrycki Lee et al., 2019).

In a cross-sectional study conducted at Sir Ganga Ram Hospital in Lahore, 100 expectant mothers were enrolled during a four-month period and questionnaires were used for interviews. Of the women, 15 lacked educations, 35 were unaware of folic acid, 40 were unaware of its potential to prevent birth abnormalities, and only 69 were aware of the right amount and timing to start folic acid intake. Folic acid inadequacy was not well understood or recognized by the majority of women, which led to inadequate folic acid consumption. Therefore, health practitioners should inform and educate women about folic acid deficiency. They ought to understand the advantages of taking folic acid during pregnancy and its significance.

LITERATURE GAP ANALYSIS

Based on the reviewed studies, a literature gap is identified as follows:

Despite the existing research highlighting the importance of folic acid supplementation for preventing neural tube defects (NTDs) and the need for improved awareness and knowledge among women of childbearing age, there is a lack of comprehensive studies focusing on the knowledge and awareness of women in Northern Saudi Arabia specifically. It's possible that the results of the majority of studies can't be applied locally because they were carried out in different states or nations. Moreover, the preconception phase has received less attention in the majority of studies that have been conducted, which have concentrated mostly on pregnant women's awareness and understanding of folic acid supplements. Understanding women's knowledge and awareness during this phase is crucial because the preconception period is a crucial time for folic acid supplementation. Studies on the understanding and awareness of folic acid supplementation among women in Northern Saudi Arabia from various educational backgrounds and socioeconomic classes are also necessary. In order to enhance mother and child health outcomes, this would assist identify specific areas of need and inform focused interventions. Up order to fill up these gaps in the research, this study will examine women in Northern Saudi Arabia's knowledge and awareness of folic acid supplementation. It will specifically focus on the preconception phase and identify specific areas that require targeted interventions.

SUMMARY

This literature review aims to provide light on women's attitudes, knowledge, and awareness about the prevention of neural tube defects (NTDs) by investigating how folic acid supplementation is understood globally among these women. Global research indicates varying levels of awareness and

understanding of the optimal timing, dosage, and method of folic acid supplementation, particularly in the preconception period.

Women's awareness and understanding are influenced by a number of factors, including pregnancy experience, socioeconomic background, and education. Even with advancements, there are still substantial gaps, particularly in environments with limited resources, which highlight the necessity of focused health education approaches. Raising awareness among women and healthcare providers is crucial, as the literature also reveals a lack of knowledge regarding NTDs and how they can be prevented using folic acid supplements.

The review also identifies research gaps, including a lack of comprehensive studies in specific regions like Northern Saudi Arabia, limited focus on the preconception period, and the need for investigations into diverse socioeconomic backgrounds. Overall, the literature review provides valuable insights into the current state of knowledge and awareness, setting the stage for the present study to address these gaps and improve maternal and child health outcomes.

MATERIAL AND METHODOLOGY

HYPOTHESIS

Null Hypothesis

There is no association between the use of folic acid supplements and prevention of neural tube defects.

Alternative Hypothesis

There is an association between the use of folic acid supplements and prevention of neural tube defects.

STUDY OBJECTIVE

To evaluate the knowledge of pregnant women about the use of folic acid supplements to prevent neural tube defects in newborns in tertiary care private hospital.

OPERATIONAL DEFINITION

Knowledge: knowledge of pregnant women about folic acid supplements is defined as the extent to which pregnant women are aware of and understand the importance of taking folic acid supplements before and during pregnancy to prevent neural tube defects (NTDs) in newborns.

VARIABLES OF STUDY

Independent Variable

- Education level
- Age
- Socioeconomic status
- Ethnicity or cultural background
- Access to health care

Dependent Variable

- Knowledge of women.

STUDY DESIGN

A descriptive cross sectional design was used among pregnant women of gynecology ward of Arif memorial teaching hospital to evaluate the level of knowledge of pregnant women to take folic acid to prevent neural tube defects in newborns. The cross-sectional studies are particularly competent for taking the data at certain points of time and are appropriate to study the prevalence of conditions or linkages between the factors in populations

STUDY SETTING

Data collected from pregnant women patients aged between (18-45) of Gynae OPD of Arif Memorial Teaching Hospital, Lahore.

STUDY DURATION

This study was conducted within five months from august 2023 to march 2024.

SAMPLE SIZE

Sample size was 83 pregnant women of Gynae OPD which was calculated by using WHO calculator.

The formula is:

$$\boldsymbol{n} = \frac{\boldsymbol{z^2 1 -_{a/s}\ p(1-p)}}{\boldsymbol{d^2}}$$

Confidence level **1-α** =95%
Anticipated population proportion **p** = 0.12
Absolute precision required **d** = 0.07
Sample size **n** = 83

SAMPLING TECHNIQUE

Simple random sampling technique was used to collect data in this study.

ELIGIBILITY CRITERIA:

Inclusion Criteria:

- 18 to 45 years age
- Married women
- In patient and out patients in Gynae OPD of Arif Memorial Teaching Hospital, Lahore.

Exclusion Criteria:

- Age less than 18 and greater than 45 years.
- Unmarried women.
- Not willing to participate.

SAMPLE SIZE AND SAMPLING

Data collection was conducted after receiving authorization and ethical clearance from the appropriate authorities, including medical director of Arif Memorial Teaching Hospital. A self-made questionnaire with 32 questions was used in the investigation that was categorized into demographic and knowledge assessment questionnaire. Participants filled the questionnaire and were checked for accuracy and completeness. Ethical considerations were upheld throughout the study, including obtaining informed consent from participants and ensuring anonymity of respondents.

PARTICIPANTS RECRUITMENT

A simple random sampling technique was employed to recruit participants in this study. A random sample of 80 participants was selected from a population of women of GYNAE OPD of Arif memorial Teaching Hospital. To ensure randomness, a computer-generated random number table was used to select participants according to inclusion and exclusion criteria of study and responses were collected to use for data analysis.

DATA COLLECTION TOOL

Data was gathered via a self-administered questionnaire in this study. The data collection tool was developed by reviewing relevant literature. The questionnaire was filled by pregnant women patients of gynecology OPD after taking permission from Medical director of the hospital. The questionnaire consists of two parts:

1. Demographic Questionnaires
2. Knowledge assessment Questionnaire

VALIDITY AND RELIABILITY

VALIDITY

The data collecting instrument was divided among three experts to assess the content validity; changes were made in accordance with the advice of the experts about sentence structure and appropriateness.

RELIABILITY

The reliability score of scale (N=80)

Table 3.1:

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.645	.663	33

ETHICAL CONSIDERATIONS

The research was conducted in accordance with the laws and regulations, and the participants' rights were upheld.

- Every subject provided written informed permission.
- All data was collected and information was kept private.
- Throughout the study, participants' identities will remain secret.
- The participants will be made aware that the study's methodology carries no risks or drawbacks.
- They will also be made aware of their freedom to leave the study at any point while it is ongoing.
- There are no known risks connected to this study.
- Confidentiality of participants will be preserved. Furthermore, no publication arising from this study will disclose your identify.
- You voluntarily choose to participate in this research project. You are free to decline to participate and to change your mind at any moment. If you want to opt out of this study or to stop participating, you won't face any consequences.

SUMMARY

This chapter explains the methodology, research design, and environment of the study on women's awareness of folic acid supplementation to prevent neural tube abnormalities (NTDs) in infants. A simple random sample procedure was utilized to choose 83 women from the gynecology ward of the Arif Memorial Teaching Hospital in Lahore for the descriptive cross-sectional study. Married women between the ages of 18 and 45 who were either inpatients or outpatients in the Gynae OPD participated in the five-month trial, which ranges from August 2023 to March 2024.

Data were collected using a self-administered questionnaire with a Cronbach's alpha score of 0.645. The questionnaire was validated for reliability and content validity. SPSS version 23.0 was used to analyze the data. Descriptive analysis and Pearson correlation were employed to evaluate participants' knowledge levels, and ethical norms were adhered to in order to protect their privacy and rights.

RESULTS

DEMOGRAPHIC DATA OF PARTICIPANTS

The studied population's demographics show a varied representation across a range of factors. When it comes to the age distribution of the respondents, the majority (58.8%) are in the 27–35 age range, followed by the 36–45 age groups (27.5%). Thirteen percent of the sample is young adults, ages 18 to 26. With 98.8% of respondents reporting to be married, the population's marital status reveals that most people are married, with only 1.3% admitting to be divorced. 65% of respondents indicated they had middle to Matric level education, which is a considerable amount. Next in line with education level are 20% who have intermediate to graduate level education. What's interesting is that 15% of the group said they were illiterate. The socioeconomic status distribution shows that, at 60%, the majority of people are in the middle class, with 22.5% belonging to the high-status group and 17.5% to the low-status group. At home, suburban living is slightly more common than urban living (37.5% vs. 15%), with 47.5% of respondents indicating they live in a suburban area. The distribution of employment status is varied, with 46.3% of people working for the government, 35% being unemployed, 13.8% being employed privately, and 5% running their own business. The majority of people (57.5%) claim that their family is somewhat supportive, 38.8% report that it is very supportive, and 3.8% report that they are neutral.

Table 4.1: Age

		Frequency	Percent
Valid	18-26	11	13.8
	27-35	47	58.8
	36-45	22	27.5
	Total	80	100.0

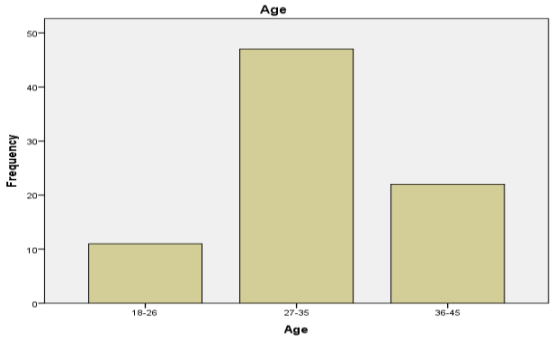


Table 4.2: Marital Status

		Frequency	Percent
Valid	Married	79	98.8
	Divorced	1	1.3
	Total	80	100.0

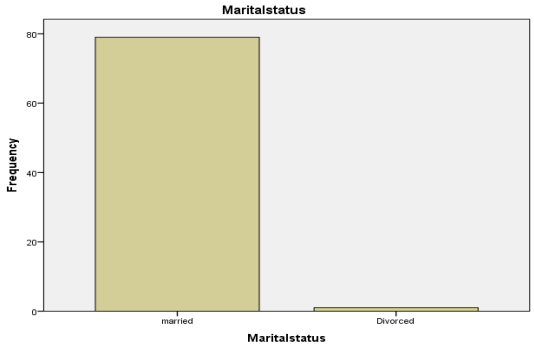


Table 4.3: Education Status

		Frequency	Percent
Valid	Illiterate	12	15.0
	Middle-Matric	52	65.0
	Inter-Graduate	16	20.0
	Total	80	100.0

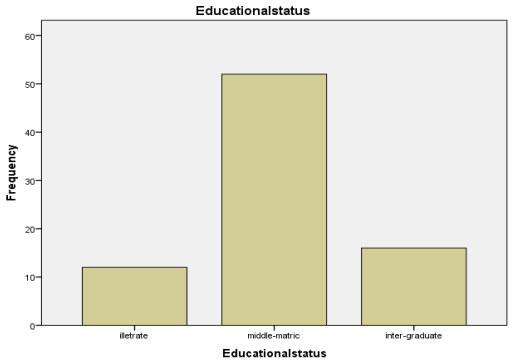


Table 4.4: Socioeconomic Status

		Frequency	Percent
Valid	Low	14	17.5
	Middle	48	60.0
	High	18	22.5
	Total	80	100.0

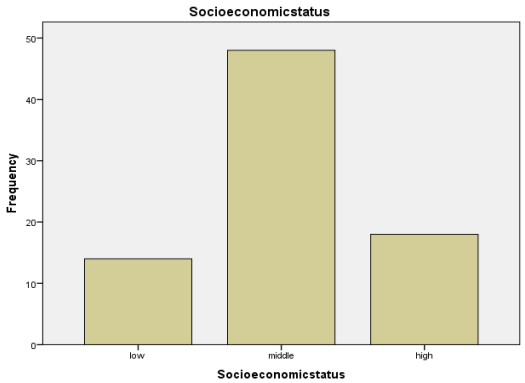


Table 4.5: Residence

		Frequency	Percent
Valid	Rural	12	15.0

	Suburban	38	47.5
	Urban	30	37.5
	Total	80	100.0

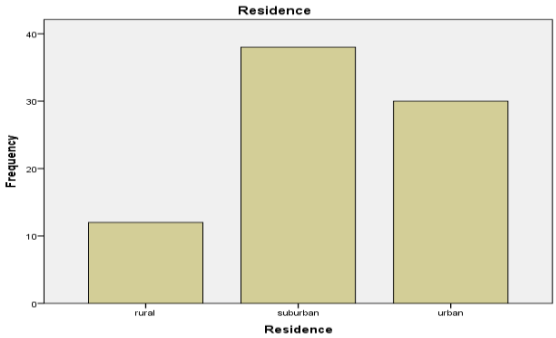


Table 4.6: Employment Status

		Frequency	Percent
Valid	Unemployed	28	35.0
	Government Employed	37	46.3
	Private Employed	11	13.8
	Self Business	4	5.0
	Total	80	100.0

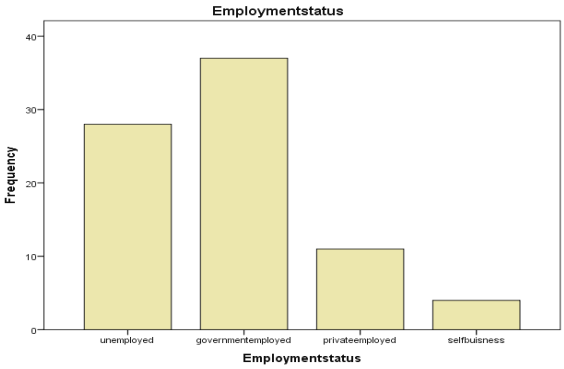


Table 4.7: Family Support

	Frequency	Percent
Very Supportive	31	38.8
Somewhat Supportive	46	57.5
Neutral	3	3.8
Total	80	100.0

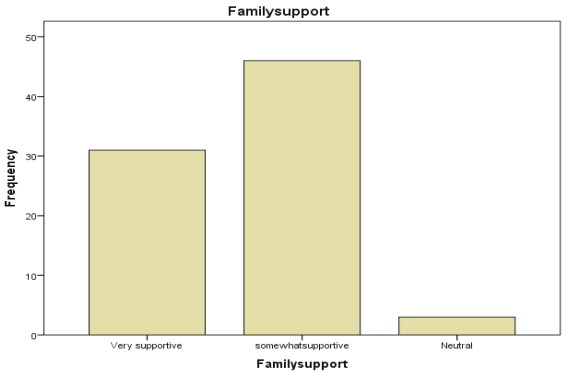


Table 4.8: Which gravida you have?

No.	0	1	2	3	4	5	6	7	8
Frequency	2	9	14	16	13	8	10	3	5
Percentage (%)	2.4	10.8	16.9	19.3	15.7	9.6	12.0	3.8	6.3

The distribution of gravida in the population under study indicates a wide range of reproductive experiences. According to the data, most people have had gravidity levels of 2, 3, and 4, which make up 16.9%, 19.3%, and 15.7% of the population, respectively. At 10.8% and 9.6%, respectively, gravida levels 1 and 5 also exhibit noteworthy frequencies. Less common gravida levels 0, 6, 7, and 8 are 2.4%, 12.0%, 3.8%, and 6.3%, respectively, indicating lesser percentages of the sample.

Table 4.9: How many of your babies were born at full term?

No.	0	1	2	3	4	5	6	7	8
Frequency	6	7	16	12	18	6	9	3	3
Percentage	7.8	8.4	19.3	14.5	21.7	7.2	10.8	3.6	3.6

With an aim towards offering insights into their birthing experiences, the data presents the distribution of full-term births among the sample population. The majority of respondents stated that they had had two to four full-term births, with frequencies of sixteen, twelve, and eighteen, respectively. These translate into percentages of 19.3%, 14.5%, and 21.7%. Additionally, there were seven babies born at full term for each of the gravida levels 1, 6, and 7, which corresponded to percentages of 8.4%, 7.2%, and 10.8%. In babies born at full term, gravida levels 0, 5, and 8 had lower frequencies of 6, 6, and 3, which accounted for 7.8%, 7.2%, and 3.6% of the sample, respectively.

Table 4.10: How many times have you lost your pregnancy?

No.	0	1	2	4	6
Frequency	51	19	8	1	1
Percentage	61.4	22.9	9.6	1.2	1.2

The data provides insight into the frequency distribution of miscarriages and stillbirths in the population by showing the number of pregnancy losses among the people surveyed. 51 respondents, or 61.4% of the sample, said they have never lost a pregnancy. This statement was made by the majority of respondents. The most frequent occurrence of pregnancy loss among those who did experience it was once, with 19 respondents, or 22.9% of the total. Only eight people, or 9.6% of the sample, reported having lost a pregnancy twice. Just a very tiny percentage of respondents—representing 1.2% of the sample—reported having lost a pregnancy four or six times.

Table 4.11: How many of your children are alive?

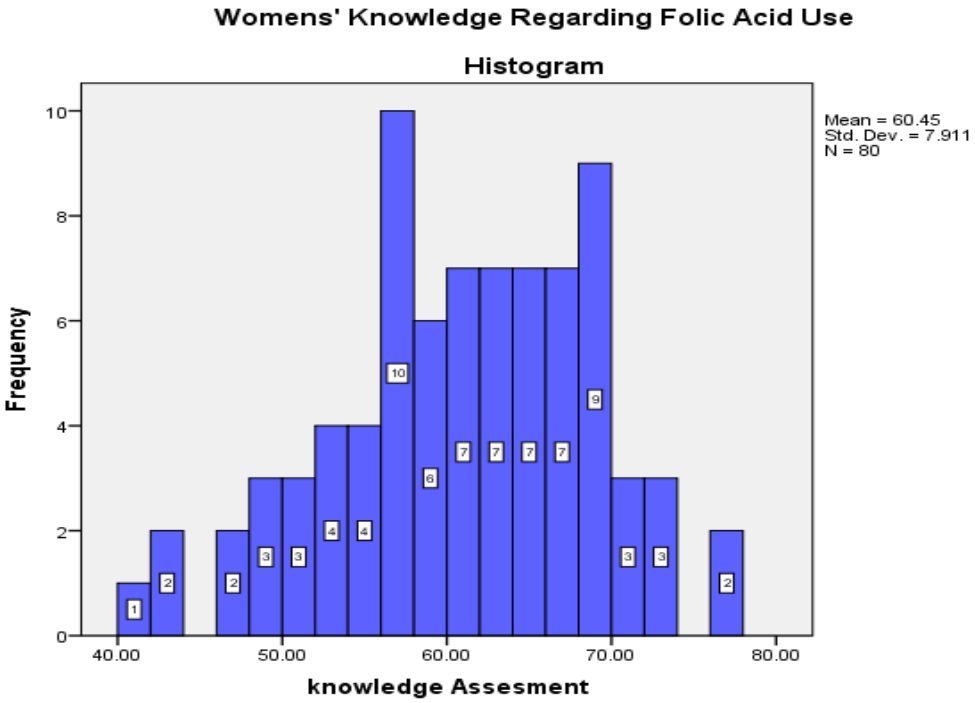
No.	0	1	2	3	4	5	6	7	8
Frequency	5	8	16	14	20	8	7	1	1
Percentage	6.0	9.6	19.3	16.9	24.1	9.6	8.4	1.2	1.2

The majority of respondents stated that they had two to four living children, with frequencies of sixteen, fourteen, and twenty, respectively, making up 19.3%, 16.9%, and 24.1% of the sample. Eight people, or 9.6% of the sample, reported having only one living child. This is a noteworthy proportion. The percentage of respondents who said they had no living children was lower; 5 people (6.0%) fell into this category. There were fewer occurrences of children surviving in gravida levels 5, 6, 7, and 8, with frequencies ranging from 1 to 8 people, each accounting for 1.2% to 9.6% of the sample.

Table 4.12:Knowledge Assessment of the Participants(n=80)	
ITEMS	**N (%)**
Do you know which of the basic medicine should be taken at the time of pregnancy?	
Antibiotics	4(5.0%)
Folic acid	39(48.8%)
Antiviral	37(46.3%)
What is the right time to begin the intake of folic acid in your opinion?	
Two months before pregnancy	11(13.8%)
Three months before pregnancy	47(56.6%)
Four months before pregnancy	22(26.5%)
Do you know which the appropriate time to take folic acid is?	
Morning	10(12.0%)
Afternoon	25(30.1%)
Evening	45(54.2%)
Do you know how many tablets of folic acid should be taken in a day?	
One tablet	6(7.2%)
Two tablet	24(28.9%)
Three tablet	50(60.2%)
Do you know how long you should continue taking folic acid?	
First 6 weeks of pregnancy	13(16.6%)
First 8 weeks of pregnancy	41(51.2%)
First 12 weeks of pregnancy	26(31.3%)
Have you ever taken folic acid supplements before pregnancy?	
Yes	5(6.0%)
No	23(27.7%)
Do not know	52(62.7%)
Have you ever taken vitamins containing folic acid when pregnant?	
Yes	8(9.6%)
No	25(30.1%)
Do not know	47(56.6%)

Is it important to take folic acid consistently as part of a daily routine?	
Yes	6(7.2%)
No	30(36.1%)
Do not know	44(53.0%)
Is it safe to take multivitamins without a doctor's prescription?	
Yes	18(21%)
No	30(36.1%)
Do not know	32(40.0%)
Are you familiar with the folic acid's function in lowering the incidence of neural tube abnormalities?	
Yes	9(11.3%)
No	40(50.0%)
Do not know	31(37.3%)
Do you ever see a baby having gap in spinal cord?	
Yes	19(23.8%)
No	37(46.3%)
Do not know	24(28.9%)
Have you heard of neural tube defects before?	
Yes	17(20.5%)
No	39(47.0%)
Do not know	24(28.9%)
Do you have any history of neural tube defects affected pregnancies?	
Yes	12(15.0%)
No	42(52.5%)
Do not know	26(31.3%)
Do you have family history of neural tube defects?	
Yes	18(22.5%)
No	35(43.8%)
Do not know	27(32.5%)
Are you familiar with any multivitamins that can lower the chance of neural tube defects?	
Yes	12(14.5%)
No	31(37.3%)
Do not know	37(44.6%)
Is a balanced diet is important for pregnancy?	
Yes	13(16.6%)
No	41(51.2%)
Do not know	26(32.5%)
Do you have any history of nutritional deficiency?	
Yes	16(20.0%)
No	37(46.3%)
Do not know	27(33.8%)
Which food source is rich in folic acid?	
Meat	8(10.0%)
Green vegetables	45(56.3%)

Bread	27(33.7%)
Did you take any medicine before pregnancy?	
Yes	13(16.3%)
No	34(42.5%)
Do not know	33(41.3%)
Do you have daily intake of tea or coffee?	
Yes	23(28.7%)
No	35(43.8%)
Do not know	22(27.5%)
Do you have any exposure to x-rays?	
Yes	15(18.8%)
No	46(56.5%)
Do not know	19(23.8%)
Have you ever smoked?	
Yes	10(12.5%)
No	44(55.0%)
Do not know	26(32.5%)



The study results revealed significant knowledge gaps among participants regarding folic acid and pregnancy. Only about half (48.8%) knew folic acid was the recommended supplement during pregnancy, while many believed it was antibiotics or antiviral. Most participants (56.6%) thought folic acid should be taken beginning three months prior to conception, and over half (54.2%) believed it should be taken in the evening. Additionally, 60.2% thought three tablets should be taken daily, and 51.2% thought it ought to be taken for the first eight weeks of pregnancy. Few participants had taken previously folic acid supplements (6%) or during (9.6%) pregnancy and many were unsure about its importance (62.7% and 56.6%, respectively). Only 7.2% believed it was important to take folic acid consistently, and 53% were unsure if it was safe to take multivitamins without a doctor's prescription. The survey also revealed a lack of awareness about neural tube defects, with only 11.3% familiar with folic acid's role in reducing the risk. Many

participants had never seen someone with a gap in their spinal cord (46.3%) and had not heard of neural tube defects before (47%). Few participants had a history of neural tube defects affected pregnancies (15%) or a family history of the condition (22.5%).Furthermore, only 14.5% were familiar with multivitamins which may lower the chance of neural tube abnormalities, and 51.2% did not believe a balanced diet was important for pregnancy. Most participants correctly identified green vegetables as a rich source of folic acid (56.3%). Few participants had taken medicine before pregnancy (16.3%), and many did not have a daily intake of tea or coffee (43.8%). Finally, only 18.8% had been exposed to x-rays, and 12.5% had ever smoked.

CORRELATION BETWEEN THE VARIABLES:

Correlations				
		Intake of folic acid supplements before pregnancy?	Intake of folic acid supplements during pregnancy?	familiarity with the role of folic acid to reduce the risk of neural tube defects
Intake of folic acid supplements before pregnancy?	Pearson Correlation	1	.249*	-.093
	Sig. (2-tailed)		.026	.414
	N	80	80	80
Intake of folic acid supplements during pregnancy?	Pearson Correlation	.249*	1	-.049
	Sig. (2-tailed)	.026		.664
	N	80	80	80
Familiarity with the role of folic acid to reduce the risk of neural tube defects?	Pearson Correlation	-.093	-.049	1
	Sig. (2-tailed)	.414	.664	
	N	80	80	80
*. Correlation is significant at the 0.05 level (2-tailed).				

Pregnancy and the use of folic acid supplements have a substantial positive link ($r = 0.249$, $p = 0.026$), suggesting that women who took folic acid supplements prior to becoming pregnant were more likely to continue doing so. Nonetheless, there is no discernible association between the use of folic acid supplements prior to conception and knowledge of its potential to lower the risk of neural tube defects ($r = -0.093$, $p = 0.414$) or knowledge of this potential relationship between the use of folic acid supplements during pregnancy ($r = -0.049$, $p = 0.664$). This suggests that while there is a correlation between taking folic acid supplements at different stages of pregnancy, there is no correlation between taking folic acid supplements and knowledge of its importance in preventing neural tube defects.

COMPILATION OF SCORE

There were a total of 26 questions in this study to evaluate knowledge. The multiple-choice questions used in the knowledge evaluation had a score of 1 for the right answer and 0 for all other responses.

Table 3.2: Classification of participants' knowledge levels

Degree of knowledge	
Poor	40.8%
Moderate	30.2%
Good	29%

5. DISCUSION

The study's findings demonstrate that participants' understanding of folic acid and its significance during pregnancy was noticeably lacking. Many participants were not aware of the suggested supplementation schedule, amount, or duration, despite its well-established function in avoiding neural tube abnormalities. This ignorance could result in insufficient consumption of folic acid, which could cause avoidable birth abnormalities. Only 48.8% of participants recognized that taking folic acid supplements during pregnancy is advised. This data raises concerns since it indicates that a sizable segment of the population may not be getting enough information about prenatal care. Additionally, a significant proportion of the participants held the belief that folic acid should be initiated three months prior to pregnancy, which could result in a delayed start to supplementation. The findings also show that participants were not well-informed on neural tube abnormalities; just 11.3% were aware of folic acid's potential to lower the risk. The low rates of folic acid supplementation before and during pregnancy could be attributed in part to this ignorance. 51.2% of participants in the survey did not think that a balanced diet was crucial during pregnancy, which is a worrying lack of awareness. This could result in insufficient nourishment throughout a crucial stage of fetal growth.

6. CONCLUSION

In conclusion, the study's findings indicate that there is a notable lack of participant understanding about folic acid and its significance during pregnancy. Despite having a varied population, many participants were ignorant of the benefits of folic acid and how to use it properly. Few people had taken folic acid supplements before or during pregnancy, and the majority was unclear about dosage, duration, and consistency. Many participants also had misgivings regarding their pre-pregnancy health practices and exposures. These results highlight the need of folic acid during pregnant education and awareness initiatives, especially about dosage, duration, and consistency. Physicians ought to stress the value of folic acid supplements and offer precise instructions on how to use them. Encouraging public health campaigns should emphasize the value of a healthy diet throughout pregnancy and the function of folic acid in avoiding neural tube abnormalities. These gaps in knowledge can be filled to lower the incidence of neural tube abnormalities and enhance maternal and child health outcomes.

The results of the literature review and our study were compared to conclude this: The use of folic acid supplements during pregnancy was shown to differ significantly between our study's 9.6% of women who used them and a previous study's far higher incidence of 85.3% (Alanazi & Mohamed Hammad, 2021). Furthermore, compared to previous research, our study's findings demonstrated a lack of understanding of the significance of folic acid before and during pregnancy (Alanazi & Mohamed Hammad, 2021). The results of our analysis indicated that women were less attentive (48.8%) of the need for folic acid supplementation and its importance during pregnancy than the respective findings of 79% and 61.2%. Also, our review's (11.3%) findings regarding the role of folic acid in preventing pallor and promoting mental health differed significantly from the 30.5% reported. (Yahiya B.T, 2019). Furthermore, our analysis revealed less information (48.8%) about the use of synthetic folic folate supplements both before and during pregnancy than the previously reported 67.5 % (Hlushko et al., 2021). The amount of women utilizing folic corrosive improvements periconceptionally was outstandingly reduced in our examination (6%) contrasted with the stated 16 % (Ethirajan and Pritem, 2020).

The mindfulness levels regarding brain tube deficiencies (11.3%) and folic corrosive (48.8%) were lower in our review than in the full data (81.1% and 30.4%,, respectively) (AL-Mohaithef et al., 2021). Moreover, compared to the detailed 47.1%, fewer women used folic acid-corrosive enhancements in our review (9.6%) (AL-Mohaithef et al., 2021).Comparing our review to writing discoveries, we found that mindfulness levels regarding folic acid and its pre-origination benefits were lower (Karaçil Ermumcu et al., 2020). Similarly, the percentage of women using folic acid derivative supplements was lower in our analysis (9.6%) compared to the findings that showed

15.1% of women and 70.2% of women were pregnant(Karaçil Ermumcu et al., 2020). In comparison to the reported 30.5% of women, our research revealed lower percentages of women starting folic acid supplementation before 12 weeks of pregnancy (6%)(Linnell & Cremona., 2022). In comparison to writing discoveries, our analysis revealed reduced mindfulness levels in relation to brain tube abnormalities and the recommended dosage of folic corrosive (Tehsin et al., 2024). In comparison to the detailed rates, our analysis revealed reduced awareness levels about the use of folic acid corrosive and brain tube malformations (Yasmin et al., 2022). The level of women taking folic corrosive upgrades during pregnancy was considerably lower in our research (9.6%) contrasted with the defined not definitely 50% of the everyday suggested folate admittance (Obrycki Lee et al., 2019).

STRENGTHS

This research study has many strengths: it covers a wide range of topics regarding folic acid and pregnancy; it is an objective assessment of knowledge and awareness; it identifies significant knowledge gaps; it contributes to the body of literature; it has the potential to have an impact; it offers opportunities for collaborative initiatives, educational programmes, and future research studies; and finally, it offers a comprehensive understanding of participants' knowledge and behaviors, identifies areas for improvement, and informs evidence-based interventions to improve maternal and child health outcomes. With its diverse sample of 80 participants, this research study has much strength.

LIMITATIONS

There are various drawbacks with this study. Firstly, the results could not apply to all women of reproductive age, and the sample size of 80 participants might not be typical of the overall population. Second, the study used self-reported data, which could include biases or erroneous recollections. Thirdly, neither nulliparous nor never-pregnant women were included in the study; only those who had become pregnant at least once were. Fourthly, the study did not account for variables like education level, socioeconomic background, and access to healthcare that may affect people's knowledge and awareness of folic acid. Fifth, a more thorough picture of the participants' general knowledge and awareness may have been obtained if the study had evaluated their knowledge and awareness of more crucial pregnancy-related subjects. And lastly, the study was a cross-sectional study, and causality cannot be inferred from the findings. A longitudinal study design would be necessary to establish causality and track changes in knowledge and awareness over time.

RECOMMENDATIONS

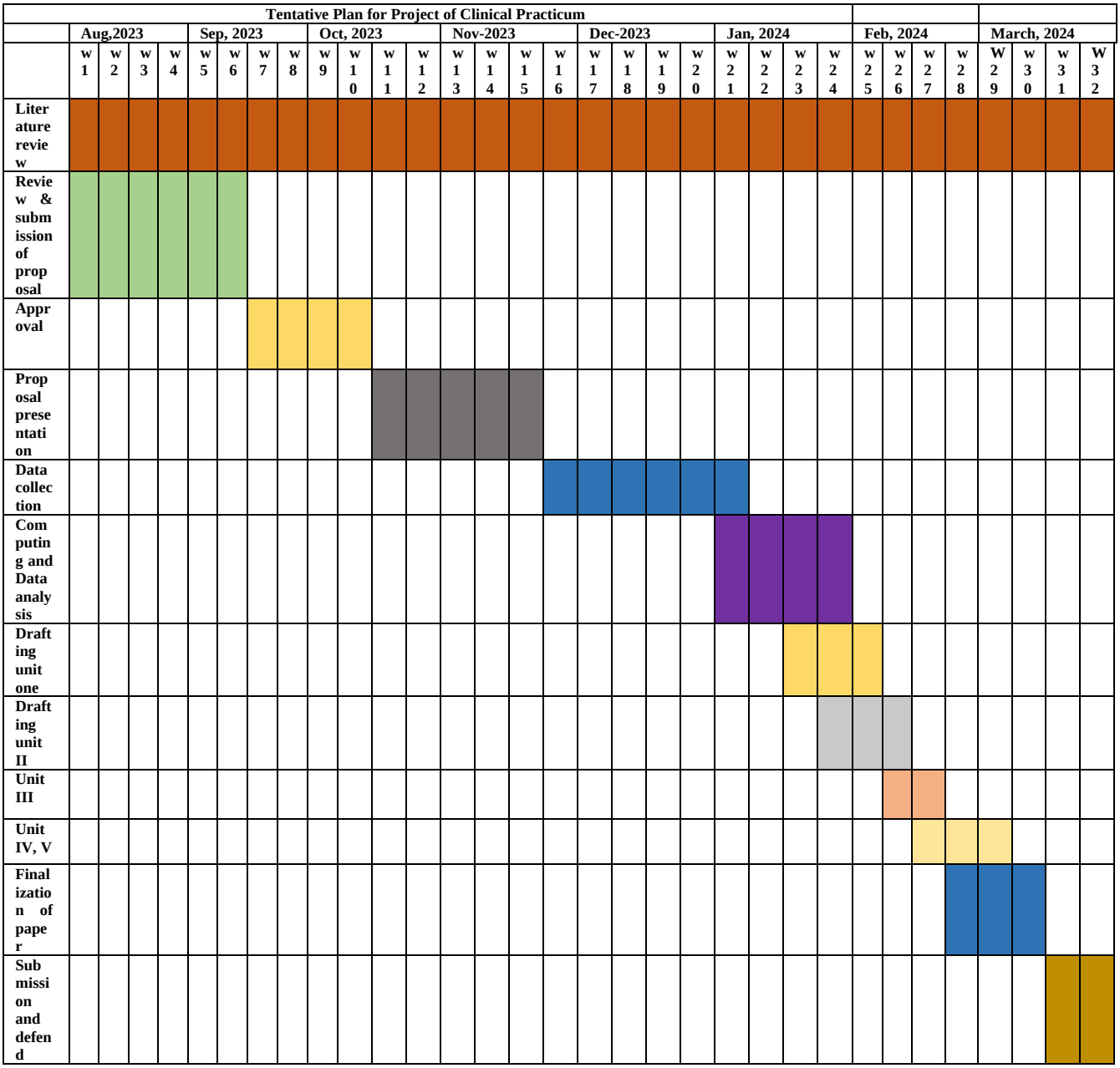
Following an analysis of the survey data, several comments and suggestions can be made to enhance pregnant mothers' access to prenatal health education and assistance. Educational interventions: Creating and putting into action focused educational initiatives to raise awareness and understanding of the benefits of folic acid during pregnancy, especially in women who are fertile. Training for healthcare professionals: Ensuring that medical professionals receive thorough instruction on folic acid supplementation and its function in preventing neural tube abnormalities would help to ensure that expectant mothers receive proper counsel and assistance.

Multivitamin safety education: Organizing awareness campaigns to inform expectant mothers about the safety of taking multivitamins and the necessity of first visiting a doctor before beginning any supplement regimen. Encouraging women who are able to bear children to take up healthy habits including eating a balanced diet, exercising frequently, and avoiding harmful substances like smoking and excessive caffeine. Long-term research: carrying performing long-term research to evaluate the effects of folic acid supplementation on the development of the fetus and pregnancy outcomes, as well as to pinpoint possible risk factors for neural tube abnormalities. Socioeconomic and cultural analysis: To create focused interventions and enhance health equality, this study looks

into the socioeconomic and cultural aspects impacting people's knowledge and awareness of folic acid and pregnancy.

Improvements to the healthcare system: Especially in rural and underprivileged areas, bolstering the healthcare systems to guarantee access to thorough prenatal care, including folic acid supplements and routine health checkups. Furthermore, given how frequently pregnant women are exposed to potentially harmful substances like smoking and x-rays, prenatal care providers should routinely assess for these risk factors and offer the appropriate guidance and support to reduce exposure. By emphasizing the need of a balanced diet and locating folic acid-rich food sources, supplementation efforts can be strengthened and overall maternal and fetal health improved.

GANTH CHART



LIST OF ACRONYMS

NTDS	Neural tube defects
DNA	Deoxyribonucleic acid
FA	Folic Acid

MRI	Magnetic resonance imaging
CIC	Clean intermittent catheterization
OPD	Outpatient department

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Annexure: 1

CONSENT FORM

Evaluation of Knowledge of Pregnant Women About the Use of Folic Acid Supplements to Prevent Neural Tube Defects in Newborns at Arif Memorial Teaching Hospital

We are the students of BSN Final year at Rashid Latif Nursing College, Lahore. You are invited to participate in a research study conducted by vaneeza yaseen & Rao Tariq.

Purpose

The purpose of this research is to find out how many pregnant women are aware about the use of folic acid in preventing the neural tube defects.

Risks and Discomforts

There is no risk of this education program in this research.

Potential Benefits

This research will serve as a baseline source to educate pregnant women about intake of folic acid which can reduce the risk of having a pregnancy affected by birth defects known as neural tube defects.

Protection of Confidentiality

Various steps will be taken to protect your anonymity and confidentiality. Code numbers will be assigned to assure confidentiality. It will be made sure that the participants' list is kept in a locked cabinet. Only the principal investigator and the supervisor will have access to the data.

Voluntary Participation

Your participation in this research is voluntary and you may withdraw from the research at any time you want. The results from this research will be presented in writing in a BSc nursing thesis which will be made publicly available, and read by a thesis committee.

CONSENT

I have read this consent form. Everything was explained to me and all my questions were answered. I have also informed that I can refuse to participate in this research at any time during this research. I am participating in this research. I give my consent to participate.

Participant's Signature: ---------- Thumb Impression: ---------- Date: ----------
Investigator's Signature: ----------

Annexure: 2

QUESTIONNAIRE

We are students of final year BSN generic at Rashid Latif Nursing College, Lahore. We are doing this research on Evaluation of knowledge of pregnant women about the use of folic acid supplements to prevent neural tube defects in newborns. Kindly read the instructions carefully and complete the information below.

Name:

MR No:

Part I: Demographic Information:

1-Age	18-26	27-35	36-45	
2- Marital status	Illiterate	Middle to Metric	Inter to graduate	
3- Socio-economic status	Upper class	Middle class	Upper class	
4- Residence	Rural	Suburban	Urban	
5- Employment status	Unemployed	Government employ	Private employ	Self business
6-To what extent do you think you have family support in term of health?	Very supportive	somewhat supportive	Neutral	

Part II: (Knowledge Assessment)

1-Which gravida you have? _____			
2-How many of your babies were born at full term? _____			
3-How many times have you lost your pregnancy? _____			
4-How many of your children are alive? _____			
5-Do you know which of the basic medicine should be taken at the time of pregnancy?	Antibiotics	Folic acid	Antiviral
6-What is the right time to start the intake of folic acid in your opinion?	Two months before pregnancy	Three months before pregnancy	Four months before pregnancy
7-Do you know which is the best time to take folic acid?	Morning	Afternoon	Evening
8-Do you know how many tablets of folic acid should be taken in a day?	One tablet	Two tablets	Three tablets
9-Do you know how long you should continue taking folic acid?	First six weeks of pregnancy	First eight weeks of pregnancy	First twelve weeks of pregnancy
10-Have you ever taken folic acid supplements before pregnancy?	Yes	No	Do not know
11-Have you ever taken folic acid supplements during pregnancy?	Yes	No	Do not know
12-Is it important to take folic acid consistently as part of a daily routine?	Yes	No	Do not know
13-Is it safe to take multivitamins without a doctor's prescription?	Yes	No	Do not know
14-Are you familiar with the role of folic acid to reduce the risk of neural tube defects?	Yes	No	Do not know
15-Do you ever see a person having gap in spinal cord?	Yes	No	Do not know
16-Have you heard of neural tube defects before?	Yes	No	Do not know
17-Do you have any history of neural tube defects affected pregnancies?	Yes	No	Do not know
18-Do you have family history of neural tube defects?	Yes	No	Do not know
19-Are you familiar with any multivitamins that can reduce the risk of neural tube defects?	Yes	No	Do not know
20-Is a balanced diet is important for pregnancy?	Yes	No	Do not know
21-Do you have any history of nutritional deficiency?	Yes	No	Do not know
22-Which food source is rich in folic acid?	Meat	Green vegetables	Bread
23-Did you take any medicine before pregnancy?	Yes	No	Do not know
24-Do you have daily intake of tea or coffee?	Yes	No	Do not know
25-Do you have any exposure to x-rays?	Yes	No	Do not know
26-Have you ever smoked?	Yes	No	Do not know

Note:

"Thank you very much for completing this questionnaire. Your participation is much appreciated and will make a substantial contribution to our research. From the bottom of our hearts, thank you once more!

سوالنامہ

ہم راشد لطیف نرسنگ کالج لاہور میں بی ایس نرسنگ کے آخری سال کے طالب علم ہیں۔ ہم یہ تحقیق نوزائیدہ بچوں میں اعصابی نالی کی خرابیوں کو روکنے کے لیے فولک ایسڈ سپلیمنٹس کے استعمال کے بارے میں خواتین کے علم کی تشخیص کر رہے ہیں۔ برائے مہربانی ہدایات کو غور سے پڑھیں اور نیچے دی گئی معلومات کو مکمل کریں۔

نام:

میڈیکل ریکارڈ نمبر:

(حصہ اول)

-۱عمر: **(۱)** 18-26 سا ل **(۲)** 27 - 35 سال **(۳)** 36 - 45 سال

-۲ازد واجی حثیت: **(۱)** غیر شادی شدہ **(۲)** شادی شدہ **(۳)** طلاق یافتہ/بیوہ

-۳تعلیمی درجہ: **(۱)** ان پڑھ **(۲)** مڈل-میٹرک **(۳)** انٹر-گریجویٹ

-۴سماجی و اقتصادی حثیت: **(۱)**نچلا درجہ **(۲)** درمیانہ **(۳)** اعلیٰ طبقہ

-۵رہائش گاہ: **(۱)** دیہی **(۲)** قصبہ **(۳)**شہری

-٦**ملازمتی حثیت:** **(۱)**بےروزگار **(۲)**سرکاری ملازمت **(۳)** پرائیویٹ ملازمت **(۴)**ذاتی کاروبار

-۷صحت کے معاملے میں آپ کے گھر والے آپ کا کتنا ساتھ دیتے ہیں؟

(۱) بہت **(۲)** کسی حدتک **(۳)**بلکل نہیں

حصہ دوم(علم کی تشخیص)

۱-آپ کا حمل کتنی دفعہ ٹھہرا؟ ----------

-۲آپ کے کتنے بچے حمل کے بیس ہفتے مُکمل ہونے کے بعد پیدا ہوئے؟ ----------

-۳آپ کا کتنی دفعہ حمل ضائع ہوا ہے؟ ----------

-۴آپ کے کتنے بچے زندہ ہیں؟ ----------

۵. کیا آپ جانتے ہیں کہ ان میں سے کون سی بنیادی ادویات حمل کے دوران کون سی بنیادی ادوایات لینی چاہیئے؟

(۱)اینٹی بائیوٹکس **(۲)** فولک ایسڈ **(۳)**اینٹی وائرل

٦. آپ کے خیال سے فولک ایسڈ سپلیمنٹس کا استعمال شروع کرنے کا صحیح وقت کیا ہے؟

(۱)حمل سےدومہینےپہلے **(۲)**حمل سے تین مہینے پہلے **(۳)**حمل سے چار ماہ پہلے

۷. کیا آپ جانتے ہیں فولک ایسڈ دن میں کس وقت لینا چاہیے؟

(۱)صبح **(۲)**دوپہر **(۳)** شام

-۸کیا آپ کو معلوم ہے کہ ایک دن میں کتنی گولیاں کھانی چاہیے؟

(۱)ایک گولی **(۲)**دو گولیاں **(۳)**تین گولیاں

۹-کیا آپ جانتے ہیں کہ کتنے وقت تک فولک ایسڈ سپلیمنٹس لیتےرہنا چاہیے؟

(۱)حمل کے پہلے چھ ہفتوں تک **(۲)**حمل کے پہلے آٹھ ہفتوں تک **(۳)**حمل کے پہلے بارہ ہفتوں تک

۱۰-کیا آپ نے حمل سے پہلے کبھی فولک ایسڈ سپلیمنٹس لیے ہیں؟

(۱)جی ہاں **(۲)**جی نہیں **(۳)**معلوم نہیں

۱۱- کیا آپ نے کبھی حمل کے دوران فولک ایسڈ سپلیمنٹس لیے ہیں؟

(۱)جی ہاں **(۲)**جی نہیں **(۳)**معلوم نہیں

-۱۲آپ کےخیال میں کیا روزانہ کے معمول کے حصے کے طور پر فولک ایسڈ کو مستقل طور پر لینا ضروری ہے؟

(۱)ضروری ہے **(۲)** نہیں ضروری ہے **(۳)**معلوم نہیں

-۱۳کیا ڈاکٹر کے نسخے کے بغیر ملٹی وٹامنز لینا محفوظ ہے؟

(۱)جی ہاں **(۲)**جی نہیں **(۳)**معلوم نہیں

۱۴-کیا آپ نے پیدائشی نقائص کو روکنے میں فولک ایسڈ کے کردار کے بارے میں سنا ہے؟

(۱)جی ہاں **(۲)**جی نہیں **(۳)** معلوم نہیں

۱۵-کیا آپ نے کبھی کسی بچےکی ریڑھ کی ہڈی کو کھلے ہوئے دیکھا ہے؟

(۱)جی ہاں **(۲)** جی نہیں **(۳)**معلوم نہیں

۱۶-کیا آپ نے پہلے کبھی اعصابی نالی کی خرابیوں کے بارے میں سنا ہے؟
(۱)جی ہاں **(۲)** جی نہیں **(۳)**معلوم نہیں
۱۷-کیاآپ کاحمل کبھی اعصابی نالی کی خرابیوں کی وجہ سے متاثرہواہے؟
(۱)جی ہاں **(۲)**جی نہیں **(۳)**معلوم نہیں
۱۸- کیا آپ کےخاندان میں کوئی اعصابی نالی کی خرابیوں کاشکار ہوا ہے؟
(۱)جی ہاں **(۲)** جی نہیں **(۳)**معلوم نہیں
۱۹-کیا آپ کسی ایسے ملٹی وٹامنز سے واقف ہیں جو نیورل ٹیوب کی خرابیوں کے خطرے کو کم کر سکتا ہے؟
(۱)جی ہاں **(۲)** جی نہیں **(۳)** معلوم نہیں
۲۰-کیا حمل کے لیے متوازن غذا ضروری ہے؟
(۱)جی ہاں **(۲)**جی نہیں **(۳)** معلوم نہیں
۲۱-کیا آپ کو غذائیت کی کمی کا سامنا کرنا پڑا ہے؟
(۱)جی ہاں **(۲)** جی نہیں **(۳)** معلوم نہیں
۲۲-کون سےغذائی ذرائع سےہیں جو فولیٹ/فولک ایسڈ سے بھرپور ہوتے ہیں؟
(۱)گوشت **(۲)** ہری سبزیاں **(۳)** روٹی
۲۳-کیا آپ نے حمل سے پہلے کوئی دوائیں استعمال کی ہیں؟
(۱)جی ہاں **(۲)**جی نہیں **(۳)** معلوم نہیں
۲۴-کیا آپ روزانہ چائے یا کافی پیتے ہیں؟
(۱)جی ہاں **(۲** جی نہیں **(۳)** معلوم نہیں
۲۵-کیا آپ کا نقصان دہ شعاؤں سے سامنا ہوا ہے؟
(۱)جی ہاں **(۲)** جی نہیں **(۳)**معلوم نہیں
۲۶-کیا آپ نے کبھی تمباکو نوشی کا استعمال کیا ہے؟
(۱)جی ہاں **(۲)**جی نہیں **(۳)**معلوم نہیں

نوٹ:
"اس سوالنامے کو مکمل کرنے کے لیے آپ کا بہت بہت شکریہ۔آپ کا یہ عمل ہمارے لیے بہت قیمتی ہے اور یہ ہماری تحقیق میں اہم حصہ ڈالے گا ۔آپ کا ایک بار پھر تہہ دل سے شکریہ! "

Annexure: 3
Participant Information Sheet
Title of Study: Evaluation of Knowledge of Pregnant Women About the Use of Folic Acid Supplement to Prevent Neural Tube Defects
An invitation to participate in a research project has been extended to you. It's crucial that you comprehend the purpose and scope of the research before making a decision. Please take the time to thoroughly read the following material, and if you'd like, discuss it with others. If there is anything unclear and you would like to obtain further information, kindly inquire. Consider your options carefully before deciding whether or not to participate.
Thank you for reading this.

The purpose of the study
The aim of this study is to determine the level of awareness among expectant mothers on the potential benefits of folic acid supplementation in avoiding neural tube abnormalities. The baseline data from this study will be used to inform women about the benefits of folic acid intake and how it can lower the incidence of neural tube abnormalities during pregnancy.
This study is a full time project and will be completed in 2024.However the part that you are being asked to take part in, the data collection phase, will last for five to six months. In total I will be talking to up to 131 women patients of gynecology ward of Arif memorial teaching hospital.

Consenting to take part
It is up to you to decide whether or not to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time, or a decision not take part will not affect you in any way.

What the study will involve

The study is based upon answering to a questionnaire comprising of 32 questions. It is anticipated that questionnaire filling will last between 15 to 20 minutes. At all times strict guidelines and procedures will be adhered to so that your identity and anything that you write will be kept confidential.

The benefits of taking part

There will be no direct benefits to you, but this information would help to understand the compassion fatigue and compassion satisfaction among nurses.

Disadvantages of taking part

There is no disadvantage of taking part in this study; the only disadvantage is that your time will be consumed in filling of the questionnaire.

Maintaining confidentiality

If you consent to take part in this study all of the information you will give will be kept strictly confidential. Any information which will be used will have your name and address removed so that you cannot be recognized from it.

The Results of the study

This research is being undertaken to meet the requirement of an undergraduate study at RLNC. When all the information is collected and analyzed, the findings will be written up as project. A copy of this document will be placed in the Library at Rashid Latif Nursing College. This piece of work is due for completion in 2024.

As part of the process of sharing new knowledge in the scientific and professional communities a series of shorter articles, based upon the findings will be submitted to scholarly journals for peer review and publication. Similarly the information will form the basis for research conference presentations.

It is important to note that you will not be identified, or identifiable, in any report, publication or presentation derived from the findings of this study.

Complaints

If you have any complaints about any aspect of this study, please feel free to contact primary supervisor vaneeza and Rao Tariq (Ph. 03040769195). Every effort will be taken to deal your complaint properly.

Review of this study

For approval to undertake this study, the research proposal and all appropriate documentation have been submitted to ethics committee in accordance to guidelines at Rashid Latif Medical Complex Ethical Review Committee. If you require further information please contact the researcher at following contact details:

Student Name:

Vaneeza yaseen & Rao Tariq Ph.03040769195

GBSN RLNC

Annexure 4
Approval Letters

RASHID LATIF MEDICAL COLLEGE
RASHID LATIF NURSING COLLEGE
35 KM Ferozepur Road, Lahore. Tel: +92 492 451091-5
Fax: +92 492 451099, Website: www.rlmc.edu.pk

April 26, 2024

Permission Letter

Dr. Babar Wattoo,
Medical Director,
Arif Memorial Teaching Hospital Lahore

Subject: Permission for collecting data regarding our research study.

Dear Dr. Babar Wattoo,

With due respect, we are informing you that we are conducting research entitled "**Evaluation of knowledge of women about the use of folic acid supplements to prevent neural tube defects in newborns at Arif Memorial Teaching Hospital, Lahore.**", which is requirement of our" Research Project" of Bachelor of Science in Nursing as required by University of Health Sciences Lahore.

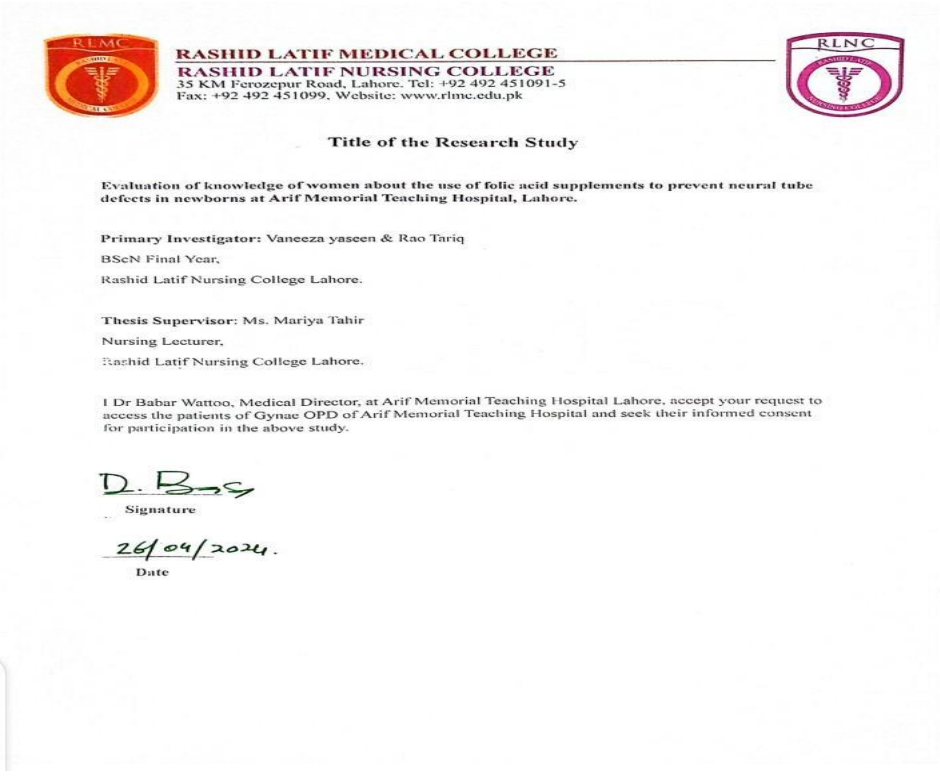
In connection with above subject matter, we are seeking permission to collect data from patients of Gynae OPD of Arif Memorial Teaching Hospital Lahore.

We would be very grateful to you for granting us permission regarding the above-mentioned subject for my research study.

Yours Sincerely,
Vaneeza Yaseen & Rao Tariq
BSeN Final Year

Supervisor
Ms.Mariya Tahir
Nursing Lecturer

Co-Supervisor
Mr.Faisal Nadeem
Principal/Associate Professor



RASHID LATIF MEDICAL COLLEGE
RASHID LATIF NURSING COLLEGE
35 KM Ferozepur Road, Lahore. Tel: +92 492 451091-5
Fax: +92 492 451099, Website: www.rlmc.edu.pk

Title of the Research Study

Evaluation of knowledge of women about the use of folic acid supplements to prevent neural tube defects in newborns at Arif Memorial Teaching Hospital, Lahore.

Primary Investigator: Vaneeza yaseen & Rao Tariq
BSeN Final Year,
Rashid Latif Nursing College Lahore.

Thesis Supervisor: Ms. Mariya Tahir
Nursing Lecturer,
Rashid Latif Nursing College Lahore.

I Dr Babar Wattoo, Medical Director, at Arif Memorial Teaching Hospital Lahore, accept your request to access the patients of Gynae OPD of Arif Memorial Teaching Hospital and seek their informed consent for participation in the above study.

D. Babar
Signature

26/04/2024.
Date

RASHID LATIF MEDICAL COLLEGE
RASHID LATIF NURSING COLLEGE
35 KM Ferozepur Road, Lahore. Tel: +92 492 451091-5
Fax: +92 492 451099, Website: www.rlmc.edu.pk

Rashid Latif Nursing College

Affiliated with University of Health Sciences

(NO.UHS/REG-20/388)

Recognized by Pakistan Nursing council

(No.PNC F-7-184-Admin/2018/685)

35km Ferozpur road Lahore

Date: _____

APPROVAL CERTIFICATE

This is certified that content and form of research project entitled "*Evaluation of the knowledge of women about the use of folic acid supplements to prevent neural tube defects in newborns at Arif Memorial Teaching Hospital, Lahore*" submitted by vaneeza yaseen and Rao Tariq has been found satisfactory for the requirement of degree BSN.

Sign: _____
Ms. Mariya Tahir
Supervisor

Sign: _____
Mr.Faisal Nadeem
Principal/Associate Professor