Al-Quds University

Deanship of Graduate Studies

A Pregnant woman Awareness knowledge and usage About Folic Acid Taken During Preconception Care and First Trimester in north Hebron.

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MCH Thesis

Jerusalem-Palestine

1444/ 2023

A Pregnant Awareness knowledge and usage About Folic Acid Taken During Preconception Care and First Trimester in north Hebron.

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A Thesis Submitted in Partial Fulfillment of Requirements for the Degree of Master in MCH Nursing Deanship of Graduate studies - Al- Quds University.

1444/2023

Al-Quds University

Deanship of Graduate Studies

Faculty of Nursing Maternal Child Health Program

Thesis Approval

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Master thesis submitted and accepted, Date: 9/1/2023

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1444/2023

Dedication:

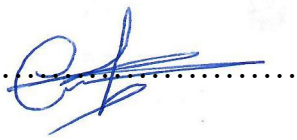
I am incredibly appreciative of the support from my entire loving family. My wonderful Parents, first. Second, I dedicate this thesis to my wonderful husband who has supported and encouraged me throughout this endeavor. Third, I dedicate this to my adorable kids. In order to spend more time with them going forward, I hope they will one day understand why their mommy spent so much time working on the laptop.

Maysaa Kamel Al-shrouf

Declaration:

I certify that this thesis submitted for the degree of Master, is the result of my own research, except where otherwise acknowledged, and that this study (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed ……..



Maysaa Kamel Al-shrouf

Date: 9.1.2023

Acknowledgments:

First and foremost, I would like to praise Allah the Almighty, the Most Gracious, and the Most Merciful for His blessing given to me during my study and in completing this thesis. May Allah's blessing goes to His final Prophet Muhammad (peace be up on him), his family and his companions.

I would like to express my gratitude and sincere thanks to **Dr. Farid Ghrayeb** who has given me her valuable guidance, advice and encouragement so I could complete this thesis in time.

As a result of their essential knowledge and help, I also extend my greatest honor to all professors and nursing department employees. Let me also express my gratitude to the midwives who assisted me in distributing the questionnaires in the clinics and to the North Hebron Health Directorate for allowing me to perform this study in their environment.

My husband

The wonderful person who supported me throughout this journey, and who was the greatest source of inspiration, my beloved husband "wisam".

My wonderful Father

To my wonderful father, the most important person in my life, who supported and inspired me to have confidence in myself by helping him make a decent living and providing for us.

my wonderful mother
The person who has the biggest heart, shows the most tender care, and gave up a lot for me to become who I am today.

My sons:

To the light of my eyes, my kids "Enal&Baraa "

Abstract

Background : A balanced diet is very important for women, especially during pregnancy, which consists of proteins, carbohydrates, vitamins, minerals and fat. supplements do not replace a healthy diet however rather ensure that a woman is taking suitable daily nutrients. Folic acid (FA) is a B vitamin that is found in different foods but can be best obtained through a multivitamin. nutrient as leafy green vegetables, orange juice, fortified cereals, and strawberries are just some of the many foods that contain folic acid. Congenital anomalies affect an estimated 3% of newborns worldwide. Nearly 50 years ago, it was found that the B-vitamin folic acid played a role in improving normal embryonic development. This study was done to investigate the level of awareness among pregnant women on the importance of folic acid supplementation during conception and pregnancy in preventing neural tube defects (NTDs).

Aim: **:** to investigate knowledge and use of folic acid in pregnant women during the first trimester of pregnancy and preconception care in north Hebron area.

Methodology: A descriptive cross-sectional study design was conducted in 2022, with a sample of 200 pregnant women that were conveniently recruited for this study. Data was collected through a self-questionnaire distributed to pregnant women and those following their pregnancy in Halhul Clinic and Beit Ula Clinic in North Hebron Governorate. The questionnaire included the personal information of pregnant women. In addition to questions about knowing the awareness of pregnant women with regard to taking folic acid during pregnancy and planning for it in terms of its quantity, benefits, harms of not using it, its deficiency, the appropriate dose, sources of obtaining it, the source of information, and urging to take it.

Result : Education level and knowledge of dietary supplements were significantly correlated (P0.000); participants with university degrees understood more about the benefits of dietary supplements than participants with lower educational levels.

There are gaps between knowledge and activity among women of reproductive age about folic acid; participants were more familiar with general than specific information. Evidence of knowledge and attitude changes that occurred after the dissemination of the booklet was found in

this study.86.7% of pregnant woman had a prior knowledge of folic acid but 72.85 of pregnant woman used of folic acid .

To enhance women's knowledge of folic acid's function in avoiding congenital abnormalities, particularly NTDs, awareness programs are necessary. Regarding the degree of awareness and the most efficient way to spread this knowledge, more research must be done.

Conclusion : Women should consume 400g of folic acid per day for at least one month prior to conception and for the first three months following conception. This is because even women who intend to get pregnant might stop using birth control without first talking to a doctor or other healthcare provider about their pregnancy intentions.

Key words : neural tube defects(NTDs), Folic acid (FA)

الملخص:

عنوان البحث: وعي الحوامل معرفةً واستخداماً لحمض الفوليك الذي تتناوله خلال فترة رعاية ما قبل الحمل والثلث الأول من الحمل في شمال الخليل

إعداد: ميساء كامل الشروف

إشراف الدكتور: فريد عبدالوهاب اغريب

الخلفية: النظام الغذائي المتوازن مهم جدا للمرأة وخاصة أثناء الحمل والذي يتكون من البروتينات والكربوهيدرات والفيتامينات والمعادن والدهون. لا تحل المكملات الغذائية محل النظام الغذائي الصحي ، هو فيتامين ب يوجد (FA) ولكن تأكد من أن المرأة تتناول العناصر الغذائية اليومية المناسبة. حمض الفوليك في الأطعمة المختلفة ولكن يمكن الحصول عليه بشكل أفضل من خلال الفيتامينات المتعددة. المغذيات مثل الخضار الورقية الخضراء وعصير البرتقال والحبوب المدعمة والفراولة ليست سوى بعض الأطعمة العديدة التي تحتوي على حمض الفوليك. تؤثر العيوب الخلقية على ما يقدر بنحو 3٪ من الأطفال حديثي الولادة في جميع أنحاء العالم. منذ ما يقرب من 50 عامًا ، وجد أن حمض الفوليك فيتامين ب يلعب دورًا في تحسين التطور الجنيني الطبيعي. أجريت هذه الدراسة للتحقق من مستوى الوعي بين النساء الحوامل حول أهمية مكملات حمض الفوليك أثناء الحمل والحمل في الوقاية من عيوب الأنبوب العصبي

الهدف: هدفت الدراسة إلى التعرف على وعي المرأة الحامل بحمض الفوليك الذي يتم تناوله خلال فترة ما قبل الحمل والحمل في محافظة الخليل.

المنهجية: تم إجراء تصميم دراسة وصفية مقطعية في عام 2022 ،مع عينة من 200 امرأة حامل تم تجنيدهن بشكل ملائم لهذه الدراسة. تم جمع البيانات من خلال استبيان ذاتي وزع على النساء الحوامل ومن تبعهن في عيادة حلحول وعيادة بيت أولا في محافظة شمال الخليل. تضمن الاستبيان المعلومات الشخصية للحوامل. بالإضافة إلى أسئلة حول معرفة وعي الحامل بتناول حمض الفوليك أثناء الحمل والتخطيط له من حيث كميته وفوائده وأضرار عدم استخدامه ونقصه والجرعة المناسبة ومصادر الحصول عليه، مصدر المعلومات والحث على أخذه.

النتيجة: (P0.000) : ارتبط مستوى التعليم والمعرفة بالمكملات الغذائية ارتباطًا وثيقًا, المشاركون الحاصلين على درجات جامعية فهموا أكثر عن فوائد المكملات الغذائية من المشاركين ذوي المستويات التعليمية المنخفضة.

هناك فجوات بين المعرفة والنشاط بين النساء في سن الإنجاب حول حمض الفوليك؛ كان المشاركون أكثر دراية بالعموم من المعلومات المحددة.

تم العثور على أدلة على التغيرات المعرفية والمواقف التي حدثت بعد نشر الكتيب في هذه الدراسة ، 86.7٪ من النساء الحوامل لديهن معرفة مسبقة بحمض الفوليك ولكن 72.85 من النساء الحوامل استخدمن حمض الفوليك.

لتعزيز معرفة النساء بوظيفة حمض الفوليك في تجنب التشوهات الخلقية ، وخاصة NTDs ، فإن برامج التوعية ضرورية. فيما يتعلق بدرجة الوعي والطريقة الأكثر فاعلية لنشر هذه المعرفة ، يجب إجراء المزيد من البحوث.

الخلاصة: يجب أن تستهلك النساء 400 مايكرو جرام من حمض الفوليك يوميًا لمدة شهر واحد على الأقل قبل الحمل ولأول ثلاثة أشهر بعد الحمل. هذا لأنه حتى النساء اللواتي يعتزمن الحمل قد يتوقفن عن استخدام وسائل منع الحمل دون التحدث أولاً إلى الطبيب أو غيره من مقدمي الرعاية الصحية حول نوايا الحمل.

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List of Abbreviations

NTD: Neural Tube Defect

FA: Folic Acid

DNA:DeoxyriboNucleic Acid

RNA:RiboNucleic Acid

UK: United Kingdom

WHO: Word Health Organization

RCOG: Royal College of Obstetricians & Gynecologists

NDHS: Nepal Demographic Health Survey

HEA: Health Education Authority

Chapter one :-Introduction

1.1Backgroud

Since 1960, many studies were concluded that there is a relationship between neural tube defect (NTDs) and poor folic acid (FA) intake during (preconception and first trimester)[Al Darzi et al., 2014]. Folate, otherwise called folate in its common structure, is a water-dissolvable type of nutrient B9. It is a characteristic supplement found in food varieties like verdant vegetables, vegetables, egg yolks, liver, and citrus organic products[Al Darzi et al., 2014].It is the coenzyme which transmits single carbon groups for the metabolism of nucleic acids and amino acids, Folic acid plays an important role in DNA / RNA synthesis, amino acid conversion, red blood cell formation, and body cell formation and maintenance. Folic acid requirements increase during intervals which transmits s of rapid growth and cell partition throughout life[Alblowi and Alomayri, 2018].

Numerous countries including the UK recommend that all women planning to become pregnant should take 400 µcgper day of folic acid for at least one month prior to conceptionand for up to 12 weeks post conception. This recommendation was based on the findings of the Medical Research Council Vitamin Study Research Group in 1991 that periconceptional folic acid intake reduces the risk of NTDs[Maher and Keriakos, 2014, Force*, 2009].However, NTDs occur during days 22 to 28 of fetal life, before most women know they are pregnant and, therefore, start taking FA supplement[Flores et al., 2014] after the first month of pregnancy is too late to prevent NTDs. Thus, in 1992, the US Public Health Service advised that all women who are able to become pregnant consume at least 400 mcg of FA as a daily supplement [Al-Holy, et al., 2018]. Currently, folic acid supplementation is officially recommended for women of childbearing age in many countries[Gomes et al., 2016]. past two decadesThe proportion of newborn deaths attributable to birth defects has increased as a result of the steady rate of birth defect mortality. [Raats et al., 1998].Birth defects have an adverse impact on people's lives, families, health care systems, and societies. They can also result in long-term incapacity.[Baykan et al., 2011]. In a range of social and economic contexts, some interventions have been proven to be successful in preventing birth abnormalities. [Oddy et al., 2007]. Resolutions from the World Health Assembly have been issued in acknowledgment of this public health priority, calling for global action in the form of comprehensive strategies for maternal, neonatal, and child health as well as infant and young child nutrition.[French et al., 2003]. A

Strategic Framework for prevention and control of birth defects in the Region over the next five years has been established by the WHO Regional Office for South East Asia in partnership with Member States in response.(Kondo et al., 2005).

This Framework provides strategic guidelines to help Member States build and expand birth defect surveillance and prevention programs with consideration for integrating them into existing public health programs in light of the current situation in the Region.(Pötzsch et al., 2006). The Framework also emphasizes the obligations of partners, Member States, and the WHO. (Maher and Keriakos, 2014).

One of the most prevalent vitamin deficits among women nowadays is a folic acid deficiency. Low folic acid consumption during pregnancy puts women at risk for complications including neural tube defect(NTD)(Riazi et al., 2012).

An estimated 300,000 babies per year around the world are thought to be affected by neural tube defects (NTDs), catastrophic birth disorders of the brain and spine that typically result in death or paralysis. (Riazi et al., 2012). Even though the majority of NTDs can be avoided by consuming enough folic acid prior to conception and during the first few weeks of pregnancy, many people, especially those in low- and middle-resource environments, are still at risk.(Oleiwi et al., 2021), do not have access to folic acid-fortified meals or vitamin supplements. Furthermore, many of these settings lack reliable birth defects surveillance data, which might support mandated fortification and other NTD prevention programs. South East Asia has one of the highest rates of birth malformations in the world.(Riazi et al., 2012). Expanding worldwide initiatives to avoid neural tube defects can aid in the achievement of the 63rd World Health Assembly Resolution on birth defects as well as UN Millennium Development Goal 4 to reduce child mortality, which many countries in South East Asia are currently not on track to achieve. In nations where folic acid fortification is not yet widespread, further work is required to design and implement obligatory folic acid fortification regulations as well as supplementation programs.(Riazi et al., 2012).

According to the World Health Organization (WHO), birth defects afflict 1 in 33 infants globally, cause 3.2 million disabilities due to birth defects each year, and are thought to be responsible for 270,000 neonatal deaths.(Oleiwi et al., 2021). However, these estimations could be affected by the "data

scarcity," especially in low- and middle-resource countries. This paucity of data is caused by variations in, or a lack of, vital registration, the ability of countries to diagnose and detect birth defects, and the absence of a formal birth defect surveillance system. Even if there is a monitoring system for birth defects, estimates of prevalence may not account for birth defects among stillbirths and elective terminations because no data is gathered on these events or because birth defects may not be found among stillbirths or terminations. As a result, the cost of birth abnormalities worldwide continues to be understated.(Riazi et al., 2012).The annual number of pregnancies afflicted by NTDs might be decreased by 50 to 70% by folic acid supplementation. Despite this, few women are aware that folic acid supplements can prevent neural tube abnormalities, and its uptake rates are still low.(Oleiwi et al., 2021).

The Health Education Authority (HEA) in the United Kingdom started a campaign in 1995 to raise public awareness of the status of folic acid in women. The three-year effort also sought to influence educators and journalists as well as medical experts.(Raats et al., 1998).Studies from all across the world have examined how crucial folic acid is for women who are ready to have children and have found some links between demographics. and lifestyle factors on the absorption of folic acid(Baykan et al., 2011, Oddy et al., 2007, French et al., 2003, Kondo et al., 2005, Pötzsch et al., 2006).

According to Mark Maher et al., a sizable proportion of women still do not aware that they should take folic acid before becoming pregnant and do not continue taking it after becoming pregnant. three months' gestation. The family planning service, the primary care team, and schools must take the initiative in educating women. Regarding folic acid(Maher and Keriakos, 2014).

1.2problem statement

A healthy pregnancy and childbirth are a fundamental right of every human being pregnant woman. Pregnancy is a time when a woman's body goes through a lot of hardships. Modifications to the body and mind Women require more nutrition than men do.Every pregnancy requires the ability to adapt to new circumstances and a developing fetus. To avoid negative consequences, take good care of yourself and eat right. more detailsAll women of reproductive age must maintain a healthy diet before and after conception since it has a major positive impact on the health of both the mother and the child. Despite certain things NTDs are among the most frequent birth abnormalities that cause infant mortality and severe disability, Various research projects have looked into Recognize the significance of folic acid in women of reproductive age and the unique relationships between them. Lifestyle and demographic factors and folic acid absorption. Therefore, the main goal of this study was to increase knowledge of the dangers of not taking folic acid during the first trimester of pregnancy and to shield women from such dangers.The poor mother and vertebrate health have a direct impact on the nutrition of girls. Due to the high rates of mother and infant mortality, the world is currently experiencing extreme economic and social hardship. Numerous nutrients can be found in food vitamins, protein, fat, and carbohydrates must be consumed throughout the physiological condition. Folic acid is one of the important nutrients for every physiological state. Vitamin B is a water-soluble vitamin that is essential for the carbon metabolism process as well as for the synthesis, repair, and methylation of deoxyribonucleic acids, as well as for the quick cell development and division 30.According to Mantovani, Fillippini, Bortolus, and Franchi(Mantovani et al., 2014), It lessens the chance of miscarriage, encephalopathy, spinal bifida, and other birth abnormalities, recurrent miscarriage, preterm delivery, preeclampsia, and abruption placenta. Folic acid should be taken daily at a dose of 400 mcg, and one month prior to conception is the optimal time to do so (World Health Organization [WHO], Royal College of Obstetricians & Gynecologists [RCOG] (Bhandari et al., 2014).There was broad consensus and suggestions to support the idea that women of reproductive age need to eat well before and after getting pregnant in order to have healthy pregnancies. The World Health Organization defines reproductive age as 15 to 49 years(Bhandari et al., 2014).Numerous recent studies support the conclusion drawn from a review of the literature that folic acid was one of the key factors in a reduction in unfavorable pregnancy outcomes. Due to

inadequate folic acid intake, several health issues, including preterm birth, maternal anemia, low birth weight, and other long-term health impacts, occur during pregnancy and in the postpartum period. It has been observed that women who consumed insufficient amounts of dietary folate and low doses of folic acid supplements were more likely to deliver their infants before the end of the third week of pregnancy. Folic acid Numerous studies have demonstrated that taking supplements before and during the first trimester of pregnancy greatly reduces the chance of preterm birth. (Liu et al., 2016).According to the government's policy, only during the second trimester of pregnancy are folic acid supplements provided without charge. (Nepal Demographic Health Survey [NDHS],(Hasan et al., 2018). Folic acid consumption can lower the rate of unfavorable birth outcomes, such as preterm birth, according to a number of studies (PURI, 2018, Keim et al., 2011). Very few women in Nepal are aware that taking folic acid before to conception is advantageous (Paudel et al., 2012). Similar to Nepal, just 69.87% of pregnant women there take folic acid supplements, and only 16.3% of urban women are aware that folate affects the health of the fetus (Paudel et al., 2012).

NTD will affect the children and their families. It is expected to: Increase the financial cost , Increase stress of families , Lower the child's self-esteem and social involvement and relations with peers and Influence the professional activities of the affected person.

1.3 Study objective

General Objective: to investigate knowledge and use offolic acid in pregnant women during the first trimester of pregnancy and preconception care in north Hebron area.

Specific Objectives

1. To Determine the level of folic acid knowledge and use among pregnant women
2. To identify the source of information about folic acidamong pregnant women
3. To compare the level of folic acid knowledge and use among pregnant women by demographic variables(age ,place of residence , number of pregnancy , planning for the pregnancy ,monthly outcome ,educational level and function.

1.4 Research question

1. what is the level of folic acid knowledge and use among pregnant women?
2. What is the source of information about folic acid among pregnant women?
3. Is there a significant relationship between folic acid knowledge and use among pregnant women by demographic variables?

1.5 Research hypothesis

1. There are no statistically significant differences in mean knowledge scores of folic acid knowledge and use among pregnant women by age.

2. There are no statistically significant differences in mean knowledge scores of folic acid knowledge and use among pregnant women by place of residence.

3. There are no statistically significant differences in mean knowledge scores of folic acid knowledge and use among pregnant women by monthly outcome.

4. There are no statistically significant differences in mean knowledge scores of folic acid knowledge and use among pregnant women by number of pregnancy.

5. There are no statistically significant differences in mean knowledge scores of folic acid knowledge and use among pregnant women by planning for pregnancy.

6. There are no statistically significant differences in mean knowledge scores of folic acid knowledge and use among pregnant women by educational level.

7. There are no statistically significant differences in mean knowledge scores of folic acid knowledge and use among pregnant women by function.

1.6 Significant of study

Among the many advantages of folic acid for expectant mothers is a reduction in birth abnormalities related to the brain and spinal cord (Linhares and Cesar, 2017). Folic acid aids in the reduction of birth abnormalities in babies, according to the center of disease control (CDC).For at least 30 days before to conception, pregnant women should take 4,000 mcg of folic acid every day(Linhares and Cesar, 2017). Folic acid consumption lowers the risk of brain and spinal cord birth abnormalities and raises newborn survival rates(Linhares and Cesar, 2017) .

This study's original contribution was to determine the efficacy and improvement of folic acid intake for periconceptual Pregnant Awareness About Folic Acid taken During Preconception Care and First Trimester for use by public policy makers and medical community members concerned with reducing birth defects. Study findings may also improve Find out how much folic acid is used and known to pregnant women and to determine where pregnant women are getting their knowledge on folic acid from, to compare the knowledge and use of folic acid among pregnant women according to demographic factors, so this study has a potential for positive social change.

This study will help the Ministry of health and supervisors inNorth Hebron Health Directorate to know the awareness of pregnant woman about folic acid and to conduct the necessary Educational sessions for them and it will serve as a database for future Palestinian researchers.

Chapter Tow :Literature review

2.1 Introduction

The purpose of this study was to investigate knowledge and useof folic acid in women before and after their prenatal visits, specifically during the first three months of pregnancy.

postpartum pregnancies among mothers. The researcher looked at literature in this chapter that discussed folic acid awareness, diets high in folate, its significance, and recommendations bothbefore and during pregnancy. This chapter also examined pregnant women's levels of folic acid awareness and use, as well as their sources of folic acid information, and compared these levels across a range of demographic factors.

2.2Folic Acid and Pregnancy

Folic acid supplements are only provided free of charge beginning prenatally, during the second trimester, as per government policy (Nepal Demographic Health Survey [NDHS], (Newman et al., 2016). According to several studies (Hasan et al., 2018), folic acid ingestion can reduce the rate of negative birth outcomes, such as premature birth (Wang et al., 2018). In Nepal, very few women are aware of the benefits of folic acid supplementation before to conception (Paudel et al., 2012). Similar to Nepal, only 69.87% of pregnant women there take supplements containing folic acid, and only 16.3% of urban women are aware that folate has an impact on the fetus's health(Paudel et al., 2012).Worldwide, 41% of pregnant women are anemic, and 50% of them are estimated to be anemic due to iron deficiency, according to the WHO (WHO, 2012).Similarly, negative birth outcomes were responsible for 46% of infant deaths under the age of five(Jha and Singh, 2018). Maternal health is linked to neonatal health complications. The majority of the nutritional and pregnancy-related causes were discovered in underdeveloped nations. 1 360 maternal deaths per 100,000 live births occur in Sierra Leone (Jha and Singh, 2018). In India, there were 100,000 live births and 45,000 maternal deaths in 2015.

Preconception care is described as "the provision of biomedical, behavioral, and social health interventions to women and couples prior to conception, with the goal of improving their health status and reducing behaviors and individual and environmental factors that may contribute to poor maternal and child health outcomes." Its overarching goal is to enhance mother and child health outcomes over the long and short terms (Ruel et al., 2013)Therefore, it was essential to run an appropriate and more successful awareness and encouraging campaign to encourage women to adopt healthy eating habits at least three months before conception and throughout the course of

pregnancy. Previous research has demonstrated that a diet rich in folic acid can help to reduce the negative effects of pregnancy (Chitayat et al., 2016, Liu et al., 2022).Folic acid is thus recognized as one of the crucial nutritional elements for women in the reproductive age group.The need for folic acid during pregnancy can be met with healthy eating habits. In contrast to other nutrients, folate is primarily required for the synthesis of red blood cells and helps to prevent other fetal complications, hence the Society of Obstetricians and Gynecologists of Canada advises women to consume folate-containing diets (Wilson et al., 2015).

2.3 Dietary Behavior of Folic Acid

One of the necessary micronutrients present in food on a naturally occurring basis is folate (Gazzali et al., 2016). Green leafy vegetables, legumes, egg yolks, liver, and citrus fruits are food sources of folate(Evans et al., 2014). The micronutrient folic acid is available in synthetic form in pharmaceutical vitamins, enhanced foods, and dietary supplements(van Gool et al., 2018, Rogers et al., 2018).However, folate insufficiency is a serious public health issue, particularly for underprivileged populations in developing nations (Yulianto, 2018, Harika et al., 2017). It has been connected to a number of pregnancy problems. Increased risks for maternal anemia, hypertension, hemorrhage, miscarriage, and cardiovascular disease are among them (Rodrigues et al., 2015, Arias et al., 2017). More than 300,000 babies globally, including 65 infants out of every 10,000 births in Ethiopia, have been reported to have neural tube abnormalities (NTDs) as a result of folate deficiency(Tablante et al., 2019, Carson et al., 2010, McNulty et al., 2019, Bitew et al., 2020).Folate intakes are frequently inadequate among women in SSA because to restricted access to foods fortified with micronutrients and rich in micronutrients, as well as the high cost, local unavailability, and unacceptability of these foods due to cultural or religious beliefs (Wang et al., 2012). The World Health Organization (WHO) suggests supplementing with 400 g of folic acid before pregnancy to reduce the prevalence of NTD since poor dietary folate consumption is one of the main causes of folate deficiency(Amoroso, 2016, Organization, 2004). An increase in pre-pregnancy folate levels is the essential and best way to reduce NTD and other pregnancy issues caused by folate shortage as the development of the central nervous system in the embryo occurs as early as 9 weeks after conception(Obeid et al., 2016).

2.4 Knowledge about Folic Acid

Folic acid and folate, or vitamin B9, are necessary for a number of physiological processes. Folate is required by the human body for the synthesis, maintenance, and methylation of DNA as well as to function as a cofactor in a number of biological processes. In times of fast cell division and expansion, like infancy and pregnancy, it is especially crucial. Neural tube abnormalities are linked to maternal folate insufficiency (NTDs)[(Weinstein et al., 2003)]. Unmet nutritional needs, often known as hidden hunger, affect an estimated two billion people worldwide and have a detrimental effect on both health and economic growth. The majority of the Millennium Development Goals must be accomplished by concerted global action to end the global population's hidden hunger. Stunting, anemia from iron shortage, and vitamin A deficiency was all very prevalent, and there was an unacceptably high level of hidden hunger in a number of sub-Saharan African nations as well as India and Afghanistan.

Micronutrient deficiency was the cause of 1.5–12% of all DALYs in 36 countries[(Mbow et al., 2019)]. There is significant dose--response relationship between folate intake and birth weight. This relationship indicated 2% increase in birth weight for every two-fold increase in folate intake[(Fekete et al., 2012)]. Autism in newborn infants may be linked to inadequate folic acid intake during pregnancy. [(Schmidt et al., 2012)]. There may be a connection between folic acid and Down syndrome, according to preliminary study[(James et al., 1999)].Taking folic acid supplements before and during pregnancy may lower the risk of an infant's developing heart abnormalities. [(Bazzano, 2009)]

2.5 Literature review

HedyehRiazi et al reported that, the information obtained showed that 7.8% are with a high level of knowledge, 43.8% with a medium level, 30.4% with a low level of knowledge, and 18% with no knowledge. Hospitals and health centers are the main sources for promoting popular awareness of folic acid. There is a statistically significant relationship between knowledge, education, work, time of onset of prenatal care, age, attractiveness, and health information sources.

The number of women with a higher level of knowledge was greater among those with lower parity, higher level of education, employment, and younger people looking for health information, Awareness of folate is low among Iranian women. Various strategies are required to raise the level of knowledge about folic acid among women of childbearing age and provide them with some information about the benefits of this supplement(Riazi et al., 2012).

Sajidah S. Oleiwi et al in Karbala al- Iraq,2021 reported that, Awareness of the benefits of using folic acid was the highest (65.0%) of the study sample (yes). The highest percentage (67.5%) of the study sample used folic acid in the first three months. The level of education was the highest percentage (30.0%) of the study sample, a primary school graduate. The highest percentage (32.5%) of the study sample was in the age group (20-26) years, with low educational level (elementary school graduate) and housewives with sufficient income to some extent. As a result of this study, most of the women who participated in the study were found to be infected with multigravida (3-4), and most of them graduated from elementary school and had a reduced awareness of folic acid. The study recommends encouraging the health care provider to set up health programs and raise community awareness about the properties of folic acid and early medical examination that will maintain a healthy pregnancy(Oleiwi et al., 2021).

Although, P. Paude et al detailed, forty percent (95% CI 35.1-45.0) of women had heard of FAS, 16.3% (95% CI 12.8-20.2) knew that folic acid affects fetal health and 5.0% (95% CI 3.1–7.6) knew that it should be taken Preloaded. Education level was strongly correlated with awareness (multivariate odds ratio for lowest versus highest level of education: 0.29, 95% confidence interval 0.15-0.56), Which summarized that knowledge of FAS is very low among women of

reproductive age in Kathmandu. It is recommended that FAS information be included in health education programs[Paudel et al., 2012].

Jihyun Kim et al reported that, 65.6% of the women who replied to the survey had heard of folic acid before to becoming pregnant, and 26.4% mentioned using it before becoming pregnant. Higher educated women were more likely to take folic acid during the preconception period and to be aware of its benefits. When age, education level, household income, employment status, gravidity, parity, and folic acid awareness were included in the model, it was found that folic acid awareness was a significant predictor ofpreconceptional folic acid use. At the time of the interview, 85.4% and 77.7% of women knew that folic acid can prevent neural tube defects and when it should be taken, respectively. Healthcare professionals (41.2%), friends and family (31.2%), and the media (26.5%) were the main sources of folic acid information[Kim et al., 2017].

Although, Ha AVVreported that, it was discovered that Vietnam had a low incidence of the right FA supplementation during pregnancy. According to the WHO recommendations, less than one-third of women reported taking either supplements containing FA alone or multivitamins including FA. According to our findings, pregnant women who are at least thirty years old, have only completed secondary school, are working, and are expecting their first child should receive more attention. Pregnancy planning among couples should also be encouraged. The findings imply that additional initiatives supporting FA supplementation may aid in increasing knowledge of the value of FA, particularly among these vulnerable categories of women. The timing of FA use among all Vietnamese women must be accurate to ensureIn these health efforts, it should be stressed more how FA supplementation can help prevent NTDs[Ha et al., 2019].

Mortensen, J.H.S. Mortensen, et all reported that in 16% of the newborns, maternal FA usage (adequate FA use) was observed during and during pregnancy. The relationship between father age and acceptable FA use was inversely U-shaped; the adjusted RRs for adequate FA use for paternal ages 20 and 40 years, respectively, were 0.35 (95% CI 0.28-0.43) and 0.72 (95% CI 0.71-0.74). Fathers' compulsory education (from 1 to 9 years) was compared to their higher education; the RR for effective FA usage was 0.69 (95% CI 0.68–0.71). In all categories of maternal education, there was a lower likelihood of using appropriate FA for paternal compulsory schooling. Compared to the reference group of "Lower professionals," occupation

classifications other than "Higher professionals" were linked to a lower probability of appropriate FA use. RR for proper FA usage was0.58 (95% CI 0.56–0.60) comparing fathers from “Low/middle-income countries” with fathers born in Norway(Mortensen et al., 2018).Despite of this, Taiwo Akeem Lawal et alreported that In Nigeria, periconceptional FA consumption is low among mothers overall and is especially low among those who are working class, less educated, multigravid. The likelihood that the same categories of women are aware of FA's function in preventing birth abnormalities is lower(Lawal and Adeleye, 2014).

Medawar G et al reported that, this study highlights the need for improved health education and increased participation of health professionals in disseminating vital information among women, particularly during the preconception period. Any community must encourage FA supplementation before conception and throughout the reproductive years. Women with poor incomes and middling education levels, as well as those who have risk factors like obesity, epilepsy, diabetes, a history of NTDs, and a dangerous lifestyle, should pay extra attention to this issue (including smoking and alcohol consumption)(Medawar et al., 2019).

Medawar G et al reported that, this study highlights the need for improved health education and increased participation of health professionals in disseminating vital information among women, particularly during the preconception period. Any community must encourage FA supplementation before conception and throughout the reproductive years. Women with poor incomes and middling education levels, as well as those who have risk factors like obesity, epilepsy, diabetes, a history of NTDs, and a dangerous lifestyle, should pay extra attention to this issue (including smoking and alcohol consumption)(Medawar et al., 2019).According to Jackie Bland, a significant new campaign was launched to encourage every woman who might get pregnant to take the recommended dosage of folic acid at the appropriate time. It is crucial that women take folic acid well before getting pregnant in order to avoid neural tube abnormalities (NTDs) and actively stop new cases of spina bifida and hydrocephalus. It is hoped that more women than ever before will hear the message and begin taking the 400 mcg per day needed to ensure the development of a healthy brain and spine through the use of social networks and the voices of healthcare professionals(Bland, 2011).

2.6 conceptual framework

The concept was initially applied to analyze families as a single unit of study (Andersen, 2008). The original model still serves as a paradigm for quantitative research into healthcare today despite the fact that it has changed and been altered by numerous researchers since that time(Gibson, 2020).

However, the majority of studies on healthcare access places an emphasis on personal characteristics like income and insurance status (Kirby and Kaneda, 2005).Therefore, the anderson et al has been developed to include the function of community-level determinants that influenced an individual's availability to acquire essential treatment within national and international studies (Tolera et al., 2020, Aday and Andersen, 1984).As a result, researchers discovered that residing in underprivileged areas dramatically decreased both individual motivation to seek medical aid for medical illnesses as well as availability or access to care (Balehegn et al., 2020).

The links between poverty and access to healthcare have gone unexplored due to the concentration on international study despite the expansion of scholarly investigation employing (Rocha et al., 2018, Shepherd-Banigan et al., 2017). Focus has been placed on pregnant women's supplement consumption (Di Saverio et al., 2020)and access to healthcare along geographic lines (Ameyaw et al., 2017, Qureshi et al., 2016, Aday and Andersen, 1984).The majority of the research applying the anderson et al has focused on healthcare barriers in developing countries (Shamaki et al., 2017), and evidence indicates that rural communities continue to be at risk of receiving subpar pregnancy care(Yaya et al., 2018).

International instances have indicated that, in contrast to the majority of studies undertaken in the United States that concentrated on poverty and mental health According to research from other countries, alternative behaviors like female autonomy are a major factor in providing proper periconceptual pregnancy care.

Chapter three :Methodology: -

3.1 Introduction: -

This study Quantitative descriptive cross-sectional studyto investigate knowledge and use of folic acid in pregnant women during the first trimester of pregnancy and preconception care in north Hebron area. Data was taken between (June –august)2022, in the primary health care center at halhul and beit ula health prenatal clinics in north Hebron governorate, which its Provides free or almost free health services (health insurance), so that it has the greatest burden of following up on pregnant women.

200 pregnant women from Health Directorate of North Hebron, filled out the questionnaire and verbally consented to fill out the form. At the same time, an ethical grant for this study was received from the Al-Quds University Institutional Review Board, and ethical approval was obtained on 13 April 2022.

3.2 Sitting: -

The study for measuring of pregnant woman awareness about folic acid taken during pregnancy was conducted at north Hebron Governmental clinics (Hahul clinic &Beit Ola clinic) in west bank in Palestine.

3.3 Research design: -

Quantitative descriptive cross-sectional study chosen to fulfill the aim of this study. Data had been obtained from 200 pregnant womenwhose follow-up in these clinics from June 2022-augest 2022, 20 pregnant women firstly collected as a pilot study then complete 180 pregnant women in the same clinics.

3.4Study Population: -

The study target includes all pregnant woman whose follow-up in these chosen clinics ranging from 18 to 45 years in Halhul Clinic and Beit Ula Clinic, which are located in the north Hebron Governorate. Data was composed during the use of the interview technique with a diagnosed pregnant woman use folic acid, after obtaining their agreements for participation in the study

through interview and informed about the study objectives, the number of pregnant women who participated in the study was 200 women's.

3.5 Study Sample: -

All pregnant woman in the primary health care center. a non-probability sample (purposive sample), consisted of 200pregnant woman from 2 primary health centers at Halhul and Beitulahealth clinics which is located in the north Hebron, beginning at June 2022 & termination of September 2022, that is representative and enough to ensure to reject the null hypothesis.

Data were composed during the use of interview technique with a diagnosed pregnant woman use folic acid after obtaining their agreements for participation in the study through interview and informed about the study objectives, it was based the questionnaire based on a review of the relevant literature around folic acid and pregnant woman.

-inclusion criteria: -

1-a pregnant woman aged (15-45) yrs.

2-a pregnant woman follow-up in beitola&halhul clinic at (June - September) 2022.

3-primy or multipara.

4-a pregnant woman whose agree to share.

3.6Study tool: -

The questionnaire utilized in the study was based on an original earlier study, which Four university professors who specialize in nursing, computing, and statistics were asked to assess the questionnaire and make any necessary changes. the survey was completed. This questionnaire was modified in light of our factors and hypothesis. Arabic was converted from English by specialists in translation, and then re-check that it fulfills the meaning required in the question.

10% of randomly chosen women in the same clinics and with the similar characteristics were examined in a pilot research.

There were three parts to it: -

- 7 questions about sociodemographic and obstetrical variables.
- Folic acid intake knowledge, 18 questions.
- different nutrients consumed during pregnancy, 13items .

The Questionnaire Examined Several Types of Variables: -

-Dependent Variables: -

1. Knowledge of folic acid and its protective role during pregnancy (score): This score included 18 questions assessing women's knowledge of folic acid's benefits, including pregnancy and fetus problems caused by a lack of folic acid intake, the proper period and dosage of its intake, their source of information, and the main food sources containing this vitamin and its precursors. Folic acid consumption habits during the preconception and pregnancy periods.

2- The number of daily servings of certain types of food eaten during pregnancy

-Independent Variables: -

These were demographic, socioeconomic and gynecologic variables:

1. Age in years.

2-Place of residence: - city, village, camp.

3- Parity number: - Prime-gravida, multipara.

4-Plan for pregnancy: -planned, not planned.

5-monthly income: - enough, enough somewhat, not enough.

6-level of education: - illiterate, primary school graduate, Tawjihi graduate university graduate.

7-occupation: - student, housewife, governmental occupation, nongovernmental occupation

In order to ensure that participants understood the information contained in

The questionnaire, so that they can answer the questions clearly and accurately, some of the questionnaire papers were distributed by me to the participants, and others were clarified and explained to the colleagues who work in these clinics in order to answer any question from them in the event .

Questionnaire Attached at the end of the paper.

3.7 Data collection: -

200 pregnant women from 2 primary health centers at Halhul and Beit Ola health clinics which is located in the north Hebron. Data was composed during the use of the interview technique with a diagnosed pregnant woman use folic acid, after obtaining their agreements for participation in the study through interview.

3.8 Ethical considerations: -

1. The proposal had been submitted to Al-Quds University - Faculty of Public Health review board to obtain approval and permission to conduct the study.

2. Approvals had been obtained from the Ministry of Health to conduct the study.

Confidentiality of the gathered data will be preserved. There hadn't identifying mechanisms, like codes, names, or even numbers, which might trace personal information to a specific patient

3.9 Statistical analysis: -

The data collected was analyzed using SPSS version 20 statistical software. Parametric data were expressed as mean and standard deviations (minimum and maximum) and non-parametric data wereexpressed as number (percentage). Comparison between participations' knowledge before and after the brochure used unpaired Macneimer test and Wicoxon test, Chi -square test was used to find therelation between socio-demographic data and the awareness of folic acid. A P-value of <0.05 was considered significant.

Chapter Four : Result

This chapter presents the results obtained from the study as set out in the objectives. The study findings are presented to underscore the awareness of pregnant women about the intake of folic acid during pregnancy and pregnancy planning among north Hebron pregnant woman, Palestine. Data for the study was collected from women residing in Halhul&Beit-ola clinic between June and August 2022.

4.1 pilot study

The questionnaire was pre-tested three weeks prior to the actual field work with 20 women with a similar characteristics or settings with original study participants. Pre-testing was conducted to assist in determining the dependability, consistency of the instruments.

Based on the results of the pilot study, internal consistency of the questionnaire items was measured by Cronbach's alpha in order to judge the reliability of the questionnaire. Any reliability of 0.7 and above was taken to depict an agreeable level of reliability for the instrument. The reliability test performed on the study instrument yielded an alpha index of 0.87. Thus, the items of the questionnaire were deemed to be consistent and the instrument was considered reliable.

4.2 Data Collection Instrument

To achieve the objectives of the study, the researcher developed a questionnaire which was structured in three sections including the socio-demographics, awareness items, and nutrients and folic acid consumption among pregnant women (Likert scale), as shown in the following table:

Table No. (1): Questionnaire Sections

N.	Section Title	number of paragraphs
1	personal information	7
2	Awareness of pregnant women about taking folic acid	18
3	Various nutrients	13

4.3The validity of the instrument

Four university professors who specialize in nursing, computing, and statistics were asked to assess the questionnaire and make any necessary changes. the survey was completed, and the outcome was what it is now.

Table No. (2): Pearson Correlations for the branches of the questionnaire and the total score for the questionnaire

N.	Branch Title	correlation coefficient	Indication level
1	Awareness of pregnant women about taking folic acid	0.449**	0.00
2	Various nutrients	0.929**	0.00

4.4 study tool correction

Likert scale was adopted to answer the questionnaire items in the third section, where each item had 5 answers: 2-3 servings per day, 1 serving per day, 4-6 servings per week, 1-3 servings per week, do not consume it Start. The distribution of scores on them was as in the following tables No. (4) and (5).

Table No. (3): Likert Scale

The answer	2-3 servings per day	One serving daily	4-6 sessions per week	1-3 classes per week	Never consume it
Degree	5	4	3	2	1

Table No. (4): The Key to Arithmetic Averages of the Five-Way (Likert Scale)

SMA	Degree
1-2.33	Few
2.34-3.66	Medium
3.67-5	Large

4.5 Normality Distribution Test

The researcher used Kolmogorov-Smirnov Test (K-S) to test whether the data follow a normal distribution or not, and the results are as shown in the following table:

Table No. (5): Normal distribution test results

N.	Branch Title	P value (Sig.)
1	Awareness of pregnant women about taking folic acid	0.000
2	Various nutrients	0.000
Total degree		0.000

*Data are subject to normal distribution at significance level α = 0.05

It is evident from the outcomes displayed in Table (6) that the probability value (Sig.) for all study axes was less than the significance level (α = 0.05), and this means that the data distribution for these axes does not follow a normal distribution, so parametric tests were used to answer the hypotheses the study.

4.6 The characteristics of the study sample

Table No. (6): Characteristics of the study sample

Variable	Options	N=180	percentage %	missing values
Age	Under 20 years old	16	8.9	2
	20-29	97	53.9	
	3-39	60	33.3	
	40 or more	5	2.8	
Place of residence	City	63	35.0	3
	Village	114	63.3	
	Camp	0	0	
Pregnancy number	1st pregnancy	39	21.7	3
	Second pregnancy or more	138	76.7	
Planning for this pregnancy	It was planned	87	48.3	4
	Not planned	89	49.4	
Monthly income	Enough	76	42.2	3
	not enough	16	8.9	
	Medium	85	47.2	
Educational level	illiterate or elementary	2	1.1	3
	Preparatory	10	5.6	

Variable	Options	N=180	percentage %	missing values
	Secondary	67	37.2	
	BA	97	53.9	
	Postgraduate	1	0.6	
Function	Student	13	7.2	2
	Housewife	130	72.2	
	Working in a government job	19	10.6	
	non-governmental job	16	8.9	

The results of the demographic variables of the respondents showed that the majority of the study sample consisted of people aged 20-29 years, with a percentage of 53.9%, followed by people from 3-39 years old with a rate of 33.3%, and the lowest percentage of the study sample according to age was from people aged 40 years or more, by 2.8%. It is also clear that most of the respondents are residents of villages with a percentage of 63%, and cities with a percentage of 35%. The results also showed that the number of pregnancies in most cases was two or more times by 76%, and few women in the study sample have only one pregnancy by 21%. We also found that the planned pregnancy is equal in the ratio with the unplanned pregnancy. We also noticed that there is a small percentage of the study sample whose monthly income is insufficient by 8.9%. The results also showed that the majority of pregnant women hold a bachelor's degree by 53%, or a middle school certificate with a percentage of 37%, and also the majority of pregnant women are housewives and do not work in any governmental or non-governmental job at 72%.

4.7 Analysis of the results of the questions of the second section

1: Have you ever heard of folic acid?

Table No. (7): Extent of knowledge of pregnant women about folic acid		
Answer	**N=180**	**percentage %**
Yes	156	86.7
No	21	11.7
Total	177	98.4%
missing values	3	

It is clear to us by reading the results of the previous table that the majority of pregnant women have prior knowledge of folic acid at a rate of 86.7%, and a few pregnant women do not have this knowledge at a rate of 11.7%.

2: Did you use folic acid before this pregnancy?

Table No. (8): Percentage of pregnant women using folic acid before pregnancy		
Answer	**N=180**	**percentage %**
Yes	131	72.8
No	47	26.1
Total	178	98.9
missing values	2	

By reading the results of the previous table, it becomes clear to us that the majority of women used folic acid before the current pregnancy with a percentage of 72.85, while there is a rather small percentage that did not use this acid at a rate of 26.1%.

3: Have you taken or are you taking folic acid during this pregnancy?

Table No. (9): Percentage of folic acid intake by pregnant women during the current pregnancy		
Answer	**N=180**	**percentage %**
Yes	154	85.6
No	25	13.9
Total	179	99.5
missing values	1	

The previous table indicates that the majority of pregnant women use folic acid during pregnancy by 85.6%, and this percentage is greater than the percentage of using this acid before pregnancy, which we referred to in the previous table, and it was 72.8%, which means that the percentage of folic acid intake during pregnancy period is more than the proportion of this acid intake before pregnancy.

4: Have you ever heard of a problem or disease of a pregnant woman who got it because of not taking folic acid?

Table No. (10): Percentage of pregnant women's knowledge of diseases in pregnancy due to lack of folic acid in others		
Answer	**N=180**	**percentage %**
Yes	69	38.3
No	108	60.0
Total	177	98.4%
missing values	3	

The results of this table show that there is a small percentage of pregnant women who are aware of the existence of a problem or disease of another pregnant woman who has contracted it due to not taking folic acid by 38.3%, while 60% of the study sample are not aware of the occurrence of diseases or problems in pregnancy due to not taking folic acid.

5: What is folic acid?

Table No. (11): Percentage of pregnant women's knowledge of the concept of folic acid		
Answer	**N=180**	**percentage %**
Metal	37	20.6
Vitamins	117	65.0
I don't know	26	14.4
Total	180	100%
missing values	0	

Through the previous results, we find that 65% are aware of the correct concept of folic acid as being among the types of vitamins, while 20.6% of pregnant women are aware that folic acid is a mineral, while there is a small percentage of 14.4% of pregnant women who do not know about folic acid. The real concept of folic acid.

6: Folic acid:

Table No. (12): The percentage9+*++ of knowledge of the study sample about the main components of folic acid		
Answer	**N=180**	**percentage %**
Vitamin A	23	12.8
Vitamin C	22	12.2
One of the B-complex vitamins	79	43.9
Metal	42	23.3
Total	166	92.2%
missing values	14	

By reading the results of the previous table, we find that the majority of pregnant women are aware of the correct component of folic acid, which is the vitamin B complex, with a rate of 43.9%, while we find that the rest of the answers received varying percentages, such as vitamin A by 12.8%, and vitamin C by 12.2%.

7: Where is the source for information on folic acid?

Table No. (13): Pregnant women's information source on folic acid		
Answer	**N=180**	**percentage %**
Doctors	87	48.3
Family	18	10.0
Friends	9	5.0
Nurses	17	9.4
Internet and books	32	17.8
Pharmacist	2	1.1
Total	165	91.6%
missing values	15	

The results contained in the previous table indicate that the main source of information for pregnant women about folic acid are doctors with 48.3%, the Internet and books with 17.8%, then nurses with 9.4%, and friends with 5%.

8: Food source of folic acid:

Table No. (14): Knowing the study sample about the dietary source of folic acid		
Answer	**N=180**	**percentage %**
Vegetables	49	27.2
the fruit	18	10.0
Cereal	18	10.0
Meat and chicken	26	14.4
I don't know	53	29.4
Total	164	91.1%
missing values	16	

Reading the results of the previous table shows that there is a weakness in the level of knowledge of pregnant women about the food source of folic acid, as 29.4% of the study sample are not aware of the food source of folic acid, and 27.2% have knowledge that the food source of folic acid is vegetables.

9: Meal site:

Table No. (15): The places where the study sample eats food

Answer	**N=180**	**percentage %**
College cafeteria	0	0
the home	165	91.7
fast food restaurants	6	3.3
Restaurants other than fast food restaurants	1	0.6
Other	6	3.3
Total	178	98.9%
missing values	2	

Previous results indicate that the majority of places to eat food for pregnant women are homes with a percentage of 91.7%, and the few of them eat in fast food restaurants at 3.3%.

10: Why is folic acid important for an expectant mother?

Table No. (16): Percentage of pregnant women's knowledge of the importance of folic acid intake for pregnant women		
Answer	**N=180**	**percentage %**
red blood cell production	21	11.7
Prevents abnormalities of the nervous system of the fetus	136	75.6
Reducing miscarriage and premature birth	13	7.2
Total	170	5.5%
missing values	10	

The study sample of pregnant women believes that folic acid is important for the expectant mother because it prevents abnormalities of the nervous system of the fetus by 75.6%.

11: Deficiency of folic acid in the fetus leads to:

Table No. (17): Percentage of pregnant women's knowledge of the importance of folic acid intake for pregnant women		
Answer	**N=180**	**percentage %**
Anemia	15	8.3
Malformation of the nervous system	118	65.6
I don't know	40	22.2
Total	173	3.9%
missing values	7	

The study sample believed that folic acid deficiency in the fetus leads to anemia in 8.3% of the sample, while 65.6% of the sample believed that folic acid leads to a malformation in the nervous system, and 3.9% of pregnant women are unaware of the effects of folic acid in the fetus. Folic acid deficiency in the fetus.

12: How would you describe your general health?

Table No. (18): The current health status of pregnant women's health		
Answer	**N=180**	**percentage %**
weak and emaciated	12	6.7
Moderate between health and disease	41	22.8
Good	48	26.7
Very well	58	32.2
Excellent	16	8.9
Total	175	97.3%
missing values	5	

By reading the results of the previous table, we find that the health of pregnant women varies and there is no specific level of health. Some of the women have good health with a rate of 26.7%, others have moderate health between health and disease by 22.8%, and there is a percentage of 32.2% of pregnant women whose health is very good.

13: When should you take folic acid?

Table No. (19): Knowing pregnant women about the appropriate time to take folic acid		
Answer	N=180	percentage %
first 3 months	84	46.7
When are you planning to get pregnant	16	8.9
during pregnancy	15	8.3
A+B	59	32.8
Total	174	96.7%
missing values	6	

By reading the previous results, we find that the majority of the study sample believes that the intake of folic acid should be done in the first 3 months of pregnancy, at a rate of 46.7%.

14: Do you know the correct dose of folic acid?

Table No. (20): The level of knowledge of pregnant women about the correct dose of folic acid		
Answer	**N=180**	**percentage %**
Yes	135	75.0
No	41	22.8
Total	176	97.8%
missing values	4	

The results of the previous table indicate that 75% of pregnant women know the correct amount of folic acid that a pregnant woman should take, while a small percentage of pregnant women 22.8% do not know the correct amount of this dose.

15: Do you think folic acid deficiency causes birth defects?

Table No. (21): The level of knowledge of pregnant women about the effects of folic acid deficiency on the occurrence of congenital malformations in the fetus		
Answer	**N=180**	**percentage %**
Yes	132	73.3
No	41	22.8
Total	173	96.1%
missing values	7	

The results presented in the previous table indicate that pregnant women are aware of the effects of folic acid deficiency, which are represented in the occurrence of congenital malformations of the fetus, so that this answer got 73.3%, while 22.8% of pregnant women are not aware of this effect.

16: How often should you take a folic acid supplement?

Table No. (22): Level of knowledge of pregnant women how often to take folic acid		
Answer	**N=180**	**percentage %**
every day	162	90.0
day after day	3	1.7
Once a week	1	.6
I don't know	10	5.6
Total	176	97.8%
missing values	4	

The results presented in the previous table indicate that the study sample of pregnant women is aware that there is a necessity to take folic acid every day at a percentage of 90%.

17: Folic acid is known to prevent:

Table No. (23): The level of knowledge of pregnant women about the diseases and problems that folic acid prevents from occurring		
Answer	**N=180**	**%**
Down's syndrome	41	22.8
Spina bifida (a defect in the formation of the nerves and spine)	96	53.3
Cerebral Palsy	16	8.9
Rubella	0	0
Total	165	85%
missing values		

The results of the previous table indicate that 53.3% of pregnant women believe that folic acid prevents spina bifida, while 22.8% of pregnant women believe that folic acid prevents Down syndrome.

4.8 Analysis of the results of the third section questions

This section raises a main question related to the number of servings to be taken by a pregnant woman from the various nutrients presented in this section? to answer this question, a one-sample t-test was used for the levels of intake of different nutrients by the study sample. This is as presented in the following table:

Table No. (24): Arithmetic means, standard deviations, and T-test values for a single sample of the levels of servings that a pregnant woman should eat from the various nutrients mentioned in this section from the point of view of pregnant women.

No	Nutrients	SMA	standard deviation	T. test value	P-value	Degree
1.	Bread	3.28	1.56	28.143	0.000	medium
2.	Rice	2.83	1.41	26.995	0.000	medium
3.	Vitamins containing folic acid	2.83	1.54	24.555	0.000	medium
4.	Milk and its derivatives	2.81	1.58	23.798	0.000	medium
5.	Citrus Fruits	2.80	1.49	25.174	0.000	medium
6.	Other Fruits	2.80	1.51	24.926	0.000	medium
7.	Other vegetables	2.62	1.46	23.948	0.000	medium
8.	Green leafy vegetables	2.33	1.34	23.384	0.000	few
9.	Nutrient enriched flour	2.20	1.52	19.425	0.000	few
10.	Orange juice	2.17	1.41	20.651	0.000	few
11.	Pasta	1.97	1.36	19.428	0.000	few
12.	Fertilized grains	1.58	1.21	17.434	0.000	few
13.	Dried Beans	1.51	1.21	16.663	0.000	few
Total Degree		2.90	0.46	59.943	0.000	medium

Table No. (24) Shows the arithmetic averages, standard deviations, and t-test values for a single sample of the levels of servings that a pregnant woman should eat from the various nutrients mentioned in this section from the pregnant woman's point of view, arranged in descending order

according to the arithmetic mean scores. The following table shows that the value of the t-test for the total score is statistically significant, so that the value of the statistical significance is 0.000, which is less than the significance level of 0.05, which indicates the need to raise the level of awareness among pregnant women of the nutrients that a pregnant woman must take during pregnancy.

It is also clear that the respondents' attitudes towards the nutrients that a pregnant woman should eat are average, so that the total mean for this question was 2.90, and this indicates that pregnant women are aware of the different nutrients that must be eaten during pregnancy, but not in the required manner. By reading the paragraphs of this question, we find that the highest paragraphs that obtained an arithmetic mean have a medium degree.

4.9 Study hypotheses

First hypothesis: Due to the variable, there are no statistically significant variations in pregnant women's knowledge of folic acid intake during pregnancy and during the pregnancy planning phase at the level of significance (0.05). (age).

A one-way analysis of variance test was used to determine whether differences in the respondents' average replies to questions about pregnant women's knowledge of folic acid intake throughout pregnancy and pregnancy planning related to the age variable supported this hypothesis. As shown in the table below No. (26).

Table No. (25): Results of the one-way analysis of variance test to find the differences between the average responses of the respondents towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the age variable**.**

Contrast source	**sum of squares**	**DF**	**mean squares**	**F**	**Sig**
Between groups	0.239	4	0.060	0.267	0.899
within groups	39.090	175	0.223		
Total	39.329	179			

It is clear from the previous table that there are no statistically significant differences at the signific

ance level ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the age variable. This is because the statistical significance (P-value) is higher than the significance level ($\alpha=0.05$). This confirms the acceptance of the hypothesis.

The numbers, arithmetic averages, and standard deviations of the study sample's answer to the branches in the questionnaire according to the age variable also confirm this. This is as shown in the table below No. (26).

Table No. (26): Numbers, arithmetic averages and standard deviations among the respondents' answers about the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the age variable.

Age	**Number**	**SMA**	**standard deviation**
Under 20 years old	16	2.19	0.26
20-29	97	2.08	0.50
3-39	60	2.07	0.47
40 or more	5	2.10	0.13

This confirms the acceptance of the hypothesis: there are no statistically significant differences at the level of significance ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the age variable.

The second hypothesis: There are no statistically significant differences at the level of significance ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable (Place of residence).

To study this hypothesis, a one-way analysis of variance test was used for the differences between the average answers of the respondents towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable of residence. As shown in the table below No. (27).

Table No. (27): Results of the one-way analysis of variance test to find the differences between the average responses of the respondents towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Place of residence.

Contrast source	sum of squares	DF	mean squares	F	Sig
Between groups	0.321	2	0.160	0.728	0.484
within groups	39.008	177	0.220		
Total	39.329	179			

It is clear from the previous table that there are no statistically significant differences at the significance level ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Place of residence. This is because the statistical significance (P-value) is higher than the significance level ($\alpha=0.05$). This confirms the acceptance of the hypothesis.

The numbers, arithmetic averages, and standard deviations of the study sample's answer to the branches in the questionnaire according to the variable Place of residence also confirm this. This is as shown in the table below No. (28).

Table No. (28): Numbers, arithmetic averages and standard deviations among the respondents' answers about the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Place of residence.

Place of residence	**Number**	**SMA**	**standard deviation**
City	63	2.10	0.52
Village	114	2.08	0.43
Camp	0	0	0

This confirms the acceptance of the hypothesis: there are no statistically significant differences at the level of significance ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Place of residence.

The third hypothesis: There are no statistically significant differences at the level of significance ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable (Pregnancy number).

To study this hypothesis, a T-test analysis of the differences between the scores of the sample members towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period was used due to the variable number of pregnancies. As shown in the table below No. (29).

Table No. (29): The results of the T-test to find the differences between the scores of the sample members towards the awareness of the pregnant woman about the intake of folic acid during pregnancy and the pregnancy planning period due to the variable number of pregnancies.

Pregnancy number	**number**	**SMA**	**standard deviation**	**T value**	**Sig**
1st pregnancy	39	2.15	0.37	4.184	0.042
Second pregnancy or more	138	2.07	0.49		

It is clear from the previous table that there are statistically significant differences due to the variable number of pregnancies, because the statistical significance value (P-value) is less than the significance level ($\alpha = 0.05$). The statistical significance value was 0.042, which is less than the significance level ($\alpha = 0.05$). As shown in the previous, table no. (30). this confirms the rejection of the hypothesis.

Fourth Hypothesis: There are no statistically significant differences at the level of significance ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable (Planning for this pregnancy).

To study this hypothesis, a T-test analysis of the differences between the scores of the sample members towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period was used due to the variable Planning for this pregnancy. As shown in the table below No. (30).

Table No. (30): The results of the T-test to find the differences between the scores of the sample members towards the awareness of the pregnant woman about the intake of folic acid during pregnancy and the pregnancy planning period due to the variable Planning for this pregnancy.

Planning for this pregnancy	Number	SMA	standard deviation	T value	Sig
It was planned	87	2.09	0.45	4.184	0.042
Not planned	89	2.08	0.48		

The above table clearly demonstrates that there are statistically significant differences due to the variable Planning for this pregnancy, because the statistical significance value (P-value) is less than the significance level (α = 0.05). The statistical significance value was 0.042, which is less than the significance level (α = 0.05). As shown in the previous, table no. (30). this confirms the rejection of the hypothesis.

Fifth Hypothesis: At the level of significance, there are no statistically significant differences (α ≤ 0.05) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable (Monthly income).

To study this hypothesis, a one-way analysis of variance test was used for the differences between the average answers of the respondents towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable of Monthly income. As shown in the table below No. (31).

Table No. (31): Results of the one-way analysis of variance test to find the differences between the average responses of the respondents towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Monthly income.

Contrast source	sum of squares	DF	mean squares	F	Sig
Between groups	0.383	3	0.128	0.576	0.631
within groups	38.946	176	0.221		
Total	39.329	179			

There are no statistically significant differences at the significance level, as can be seen from the previous table ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Monthly income. This is because the statistical significance (P-value) is higher than the significance level (α=0.05). This confirms the acceptance of the hypothesis.

The numbers, arithmetic averages, and standard deviations of the study sample's answer to the branches in the questionnaire according to the variable Monthly income also confirm this. This is as shown in the table below No. (32).

Table No. (32): Numbers, arithmetic averages and standard deviations among the respondents' answers about the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Monthly income.

Monthly income	**Number**	**SMA**	**standard deviation**
Enough	76	0.49	0.05o
not enough	16	0.49	0.12
Medium	85	0.44	0.04

This confirms the acceptance of the hypothesis: there are no statistically significant differences at the level of significance ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Monthly income.

Sixth Hypothesis: At the level of significance, there are no statistically significant differences ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable (Educational level).

To study this hypothesis, a one-way analysis of variance test was used for the differences between the average answers of the respondents towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable of educational level. As shown in the table below No. (33).

Table No. (33): Results of the one-way analysis of variance test to find the differences between the average responses of the respondents towards the awareness of pregnant women about folic

acid intake during pregnancy and pregnancy planning period due to the variable educational level.

Contrast source	sum of squares	DF	mean squares	F	Sig
Between groups	0.871	5	0.174	0.788	0.559
within groups	38.457	174	0.221		
Total	39.329	179			

There are no statistically significant differences at the significance level, as can be seen from the previous table ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable educational level. This is because the statistical significance (P-value) is higher than the significance level (α=0.05). This confirms the acceptance of the hypothesis.

The numbers, arithmetic averages, and standard deviations of the study sample's answer to the branches in the questionnaire according to the variable educational level also confirm this. This is as shown in the table below No. (34).

Table No. (34): Numbers, arithmetic averages and standard deviations among the respondents' answers about the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable educational level.

Educational level	Number	SMA	standard deviation
illiterate or elementary	2	1.68	0.87
Preparatory	10	2.07	0.33
Secondary	67	2.03	0.56
BA	97	2.14	0.39
Postgraduate	1	2.06	0

This confirms the acceptance of the hypothesis: there are no statistically significant differences at the level of significance ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable educational level.

Seventh Hypothesis: At the level of significance, there are no statistically significant differences. ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable (Function).

To study this hypothesis, a one-way analysis of variance test was used for the differences between the average answers of the respondents towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable of Function. As shown in the table below No. (35).

Table No. (35): Results of the one-way analysis of variance test to find the differences between the average responses of the respondents towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Function.

Contrast source	**sum of squares**	**DF**	**mean squares**	**F**	**Sig**
Between groups	1.143	4	0.286	1.309	0.268
within groups	38.186	175	0.218		
Total	39.329	179			

It is clear from the previous table that there are no statistically significant differences at the significance level ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Function. This is because the statistical significance (P-value) is higher than the significance level (α=0.05). This confirms the acceptance of the hypothesis.

The numbers, arithmetic averages, and standard deviations of the study sample's answer to the branches in the questionnaire according to the variable Function also confirm this. This is as shown in the table below No. (36).

Table No. (36): Numbers, arithmetic averages and standard deviations among the respondents' answers about the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Function.

Function	Number	SMA	standard deviation
Student	13	2.25	0.27
Housewife	130	2.04	0.48
Working in a government job	19	2.15	0.42
non-governmental job	16	2.25	0.45

This confirms the acceptance of the hypothesis: there are no statistically significant differences at the level of significance ($\alpha \leq 0.05$) towards the awareness of pregnant women about folic acid intake during pregnancy and pregnancy planning period due to the variable Function.

Chapter five : Discussion:

5.1 Discussion

Neural tube defects (NTDs) are one of the most serious congenital anomalies contributing to infant mortality and serious disability. He is the second most common type of birth defect aier congenital heart defects. NTDs occur during days 22-28 of fetal development, before most women even know that they are pregnant(Medawar et al., 2019, Mariam S et al., 2013, Kari et al., 2008).

Numerous research on folic acid knowledge in various counties, regions, and demographics have been carried out, particularly those focusing on dosage and crucial administration timing. Several research concentrated on the knowledge rates, such as folic acid supplementation before pregnancy or folic acid preventing NTDs. Many of the countries analyzed appear to have high incidence of these. Nearly 77% of Australian women, 84% of American women, 46.3% of Turki women, 62.4% of Egyptian pregnant women, Qatar (53.7%), the United Arab Emirates (Al-Holy et al., 2013)(46.6%), and about 60% of Lebanese women were aware of folic acid in 2003. Folic acid was also known to about 95% of respondents in Canada, nearly 77% of Australian women, 84% of American women, 46.3% of Turki women, and nearly 84% of women in the United States (Zeng et al., 2011). Although, according to the demographic data collected from the respondents, people aged 20 to 29 made up the majority of the study sample, accounting for 53.9% of the total. People aged 3 to 39 years old were next, with a rate of 33.3%, and people 40 years of age or older made up the least amount of the sample, 2.8%. Additionally, with a ratio of 63% in villages and 35% in cities, it is evident that the majority of responders are locals. The findings also revealed that few women in the study group had only one pregnancy, with only 21% of pregnancies in most cases being two or more. Additionally, we discovered that the ratio of planned to unplanned pregnancies is equal. We also noted that a small proportion of the study population has monthly incomes that are 8.9% insufficient. The findings also revealed that 53% of pregnant women have a bachelor's degree, 37% have a middle school diploma, and 72% of pregnant women are housewives who don't work in any government or non-governmental positions. it is evident to us that the majority of pregnant women have prior knowledge of folic acid, at a rate of 86.7%, while a small number of pregnant women do not, at a rate of 11.7%. While 70% of respondents in a European survey said they had heard of folic acid, only 40%

reported taking it[Bitzer et al., 2013, Bener et al., 2006], which showed that although there is an increase in the general awareness among married women in reproductive age about FA still there is a gap between knowing and acting need to be improved. This gap may be caused by the difficulty of recalling studies conducted in Turki (12.2%) [10], Qatar (20.3%), and Lebanon [Lamb and Hogg, 2013] this was similar in our studies conducted.

It is evident to us that, with a percentage of 72.85, the women predominate had utilized folic acid prior to their present pregnancies, while just 26.1% of the women did not. The majority of pregnant women use folic acid during pregnancy at a rate of 85.6%, which is higher than the rate at which they used it prior to becoming pregnant. This means that the proportion of folic acid consumed during pregnancy is higher than the proportion consumed prior to becoming pregnant. Despite the fact that only 38.3% of pregnant women are aware of the existence of a problem or disease that another pregnant woman has acquired as a result of not taking folic acid, 60% of the study sample is unaware that diseases or issues might arise during pregnancy as a result of not taking folic acid. We discover that while 20.6% of pregnant women are aware that folic acid is a mineral and only 14.4% of pregnant women are unaware of folic acid, 65% of pregnant women have the proper understanding that folic acid is one of the types of vitamins. the true meaning of folic acid, this was similar to the studies conducted in Turki[Baykan et al., 2011], Qatarand in Lebanon (7.5%), also in European survey[Bitzer et al., 2013, Zeng et al., 2011].

the degree to which pregnant women are aware of the food source of folic acid 29.4% percent of the sample is unaware of the food source of folic acid, and 27.2 % are aware that vegetables are the food source of folic acid while the majority of pregnant women eat in their homes 91.7 %, and only 3.3% eat in fast food restaurants, Folic acid is thought to be significant for expectant mothers since it reduces the risk of fetal nervous system abnormalities by 75.6%, according to the study sample of pregnant women. Pregnant women's health is shown to vary and there is no set standard of health. With a percentage of 26.7%, some of the women have good health, while 22.8% of the women have moderate health between health and disease, and 32.2% of pregnant women have very good health. The results mentioned in our study are almost similar to previous studies [Baykan et al., 2011, Bitzer et al., 2013, Zeng et al., 2011]We discover that 46.7% of the survey sample

believes that folic acid intake should occur during the early stages of pregnancy. While only 22.8% of pregnant women are unaware of the recommended dose of folic acid, 90% of pregnant women are aware that folic acid needs to be taken every day. Of those who are aware of this requirement, 75% of pregnant women are aware of it. While 22.8% of expectant mothers think folic acid prevents Down syndrome, 53.3% of them think it prevents spina bifida, it was similar the previous study.

in our study, the statistical significance value is 0.000, which is less than the significance level of 0.05, indicating that pregnant women's understanding of the nutrients they must consume during pregnancy has to be increased. Similar results were observed from a study conducted in Makkah Almukaramah(Mariam S et al., 2013), which revealed that the level of education among women in Hail, Saudi Arabia, was likewise a potent indicator of FA intake. In contrast to the study conducted in Hail-Saudi Arabia, where the monthly income did not correspond with awareness and knowledge of FA (Baykan et al., 2011, Nasr Hage et al., 2012, Al-Holy et al., 2013), the monthly income as a socio-demographic variable revealed a significant difference (P 0.000) and was correlated with FA intake awareness.

In our study, demonstrated the age variable has no statistically significant effects on pregnant women's knowledge of folic acid intake throughout pregnancy and pregnancy planning, at the significance level (0.05). Due to the statistical significance (P-value) exceeding the significance level (=0.05), this is the case. This demonstrates that the hypothesis is correct. Although, the results of various studies revealed that most women begin taking FA as soon as they learn of their pregnancy between the second and fourth week of gestation, missing the critical period of neural tube development. The right timing of taking FA supplements is crucial for the normal development of the fetus' nervous system and to lower the risk of NTDs, only 33.7% of respondents were aware that it must be taken as early as the first 12 weeks of pregnancy, similar to the recommendations made by Lebanon (24.7%) and Hail-Saudi Arabia (10% each)(Al-Holy et al., 2013, Nasr Hage et al., 2012).

There was a significant correlation (P<0.000) between education level and knowledge of dietary supplements; participants with university degrees knew more about the advantages of dietary supplements than participants with lower educational levels. The degree of education among women in Hail, Saudi Arabia, was likewise a potent indicator of FA consumption, and a study in Makkah Almukaramah produced results that were comparable(Al-Ahmadi, 2014, Al-Holy et al., 2013). In contrast to the study conducted in Hail-Saudi Arabia, where the monthly income did not link with awareness and knowledge of FA (Al-Holy et al., 2013, Baykan et al., 2011, Nasr Hage et al., 2012), the monthly incomes as socio-demographic factors revealed a significant difference (P 0.000) and correlated with the awareness of FA intake, this result agreed with our study.

There is a disparity in women of reproductive age's knowledge of folic acid; participants were more familiar with general than specific information, which causes gaps between knowledge and action. In this study, there was evidence of changes in knowledge and attitude following the distribution of the brochure. Awareness campaigns are required to increase women's knowledge of folic acid's role in preventing congenital anomalies, particularly NTDs. More research must be done regarding the level of awareness and the most effective means of disseminating this information.

Chapter Six :Conclusions, limitations and recommendation

6.1 Conclusion: -

There is mounting evidence that the incidence of NTDs and spina bifida has declined less than anticipated despite the implementation of government regulations, clinical recommendations, and health education programs. is the substantial frequency of impromptu pregnancies According to current European recommendations, women should consume 400 g of folic acid per day for at least one month prior to conception and for the first three months following conception.

When it comes to educating women about the advantages of taking folic acid at the right time and encouraging them to do so when trying to get pregnant or already pregnant, health care professionals can play a critical role. Similar to other studies, this survey found that gynecologists were the most frequently cited source of information on folic acid. This is because even women who intend to get pregnant might stop using birth control without first talking to a doctor or other healthcare provider about their pregnancy intentions.

6.2 Limitation:

Different restrictions may have an impact on the study's quality and ease of conduct. These restrictions include missing data, a heavy workload, and unwilling pregnant women,Poor knowledge and experience on the Word Office Program , Lack of sources and references related to the subject of researches in Palestine, Poor statistical capabilities which led to the need for a statistician to analyze data and lack of money.

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Due to their daily workload, some midwives do not participate in data collection when it comes to giving the questionnaire to expectant women. This results in missing data and midwives or expectant women not returning some questionnaire papers.

6.3 Recommendation: -

1- Primary healthcare providers especially midwives, nurses, and family doctors should work to educate all women of reproductive age about the benefits of folic acid for preventing NTDs and to advise them to take the supplement when considering becoming pregnant.

2- Encouragement and provision of oral contraceptives as a practical means of enhancing the folate status of women of reproductive age.

3- There should be campaigns to highlight the advantages of folic acid.

4- Educate a pregnant woman about when to use folic acid is recommended, the suitable dose of folic acid and the risk and problem that is caused by lack of folic acid taken during pregnancy

5- advise taking folic acid supplements prior to conception and in the first trimester of pregnancy.

6- The knowledge might be taught in high schools. On the amount of awareness and appropriate strategies to deliver this information, more research should be done.

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Appendices:

Appendix 1

Al- Quds University
Faculty of Health professions
Nursing Department
Jerusalem-Abu Dies

بسم الله الرحمن الرحيم

جامعـة القدس
كليـة المهـن الصحيـة
دائرة التمـريض والقبالة
القدس-أبوديـس

Consent form

In the framework of preparing a master's study - specializing in Mother and Child Health Nursing. Under the title "Satisfaction and Associated Factors among Mothers Delivered At Palestine Red Crescent Society Hospital" The Case Study of Red Crescent Society Hospital (RCSH) in Hebronand because you are the one we seek to satisfy, and to always achieve the best, we are pleased that you contribute to expressing your comments completely freely.

Therefore, please read this questionnaire carefully and answer freely as you see fit, by placing a tick in the appropriate box, noting that completing the questionnaire takes about 5-8 minutes.

Filling out this questionnaire helps us to promote a distinguished health service. Thank you in advance for your valuable contribution and cooperation in filling out the questionnaire, and all the data that you provide will be dealt with in Packaged, strictly confidential, and will only be used for scientific research purposes.

If you have any questions or inquiries, you can contact us through the following contact information:

Maysaa al-shrouf mw.maysaa@gmail.com

Part I: -Socio-demographic and obstetrical characteristicsvariable: -

1-mother age: -

a. less than20yrs
b. 20-29 years
c. 30- 39 years
d. 40 years and above

2-Place of residence: -

a. city b. village c. camp.

3- Parity number: -

a. Primi-gravida.
b. multipara.

4-Plan for pregnancy: -

a. planned
b. not planned.

5-monthly income: -

a. enough b. enough somewhat c. not enough.

6-level of education: -

a. illiterate
b. primary school graduate
c. Tawjihi graduate
d. university graduate.

7-occupation: -

a. student
b. housewife
c. governmental occupation
d. nongovernmental occupation.

Part II: -Information about awareness of folic acid:-(you can choose more than one choice)

1-Have you heard ever of folic acid: - a. Yes b. No

2-have you used folic acid before this pregnancy: - a. Yes b. No

3-Have you taken or are you taking folic acid during this pregnancy?

a. Yes
b. No

4-Have you ever heard of a problem or disease caused by a pregnant woman not taking folic acid?a. Yes b. No

5-what is the folic acid: -

a. minerals b. vitamins c. I don't know.

6- Folic acid is: (circle one)

a. Vitamin A
b. Vitamin C
c. One of the Vitamin B complex
d. A mineral

7-where is the source of information about folic acid: -

a. doctors
b. family
c. friends
d. nurse
e. internet, books…
f. Pharmacist

8-food source for folic acid: -

a. vegetables
b. fruits
c. cereals
d. meats and chicken
e. I don't know.

9- Location of Meals

a. Eat most often in college cafeteria
b. Eat most often at home
c. Eat most often at fast food restaurants
d. Eat most often at restaurants other than fast food establishments
e. Other, please indicate_____

10-why folic acid is important for pregnant woman: -

a. production of red blood cells
b. preventsfetal nervous system malformations.
c. reduce abortion &premature birth.

11- folic acid deficiency for fetus leads to:

a. anemia
b. deformation in nervous system
c. I don't know.

12- How would you describe your general health?

a. Poor
b. Fair
c. Good
d. Very Good
e. Excellent

13- when you must take folic acid: -

a. first 3 months
b. when you planning for pregnancy
c. through pregnancy period
d. a+b

14-awarness of the correct dose of folic acid: - a. Yes b. No

15-you think deficiency of folic acid cause birth defects: - a. Yes b. No

16-how frequently are you supposed to take your supplement folic acid: -

a. every day
b. day after day
c. once in a week
d. I don't know.

17- Folic acid is known to prevent

a. Down syndrome
b. Spina bifida
c. Cerebral palsy
d. Rubella

18- Briefly describe what you know about folic acid and its daily-recommended allowance:

_____

_____

Part III- Please read each of the following statements concerning various nutrients and indicate how often you consume each item. The following scale will be used for all itnumbers.

1 = Never consume it
2 = 1-3 servings per week
3 = 4-6 servings per week
4 = One serving daily
5 = 2-3 servings daily

Items	1	2	3	4	5
Dark green leafy vegetables					
Other vegetables					
Citrus fruit					
Other fruit					
Enriched cereals					
Orange juice					
Pasta					
Rice					
Enriched flour					
Dried beans					
Breads					
Milk, or milk products					
Vitamin containing folic acid					

Appendix 2

القسم الأول(المعومات الشخصية):-

1-العمر:-
ا-اقل من 20عاما ب-من20-29 ج-30-39 د-40 او اكثر

2-مكان الإقامة:-
ا-مدينة ب-قرية ج- مخيم

3-عدد الحمولات :-
1-الحمل الاول 2-ثاني حمل او اكثر

4-التخطيط لهذا الحمل :-
1-تم التخطيط له 2-لم يتم التخطيط له

5-الدخل الشهري :-
1-كافي 2-غير كافي 3-مرضي نوعا ما

6-المستوى التعليمي:-
ا-أمّي أو ابتدائي ب-إعدادي ج-ثانوي د-بكالوريوس ه-دراسات عليا

7-الوظيفة:-
1-طالبة 2-ربة بيت 3-العمل في وظيفة حكومية 4-وظيفة غير حكومية

القسم الثاني
ضع دائرة (يمكنك اختيار أكثر من إجابة):-

1-هل سمعت من قبل عن حمض الفوليك: -
أ. نعم ب. لا

2- هل استخدمت حمض الفوليك قبل هذا الحمل: -

أ. نعم ب. لا

3-هل تناولت أو تتناولين حمض الفوليك خلال هذا الحمل؟

أ. نعمب. لا

4-هل سمعت من قبل عن مشكلة أو مرض لامرأة حامل أصيبت به بسبب عدم تتناول حمض الفوليك؟ أ- نعم ب. لا

5- ما هو حمض الفوليك: -

أ. المعادن ب. الفيتامينات ج. لا أعلم.

6- حمض الفوليك: (دائرة واحدة)

أ. فيتامين أب. فيتامين سيج. واحد من فيتامين ب المركبد. معدن

7- أين مصدر المعلومات عن حمض الفوليك: -

أ. الأطباءب. الأسرةج. الاصدقاء د. ممرضه. الإنترنت والكتب .. و-صيدلاني

8- مصدر غذائي لحمض الفوليك: -

أ. خضرواتب. الفاكهةج. الحبوبد. اللحوم والدجاجه. لا أعلم.

9- موقع الوجبات:-

أ. تناول الطعام في أغلب الأحيان في كافتيريا الكلية

ب. تأكل في أغلب الأحيان في المنزل

ج. تناول الطعام في أغلب الأحيان في مطاعم الوجبات السريعة

د. تناول الطعام في أغلب الأحيان في المطاعم بخلاف مطاعم الوجبات السريعة

ه. غير ذلك ، يرجى توضيح _____

10-لماذا حمض الفوليك مهم للام للحامل: -

أ. إنتاج خلايا الدم الحمراء

ب. يمنع تشوهات الجهاز العصبي للجنين.

ج. تقليل الإجهاض والولادة المبكرة.

11- نقص حمض الفوليك لدى الجنين يؤدي إلى:

أ. فقر دمب. تشوه في الجهاز العصبيج. لا أعلم.

12- كيف تصف صحتك العامة؟

أ. ضعيفة وهزيلة ب. معتدلة بين الصحة والمرض ج. جيدد. جيد جدًاه. ممتاز

13- متى يجب تناول حمض الفوليك: -

أ. أول 3 أشهرب. عندما تخططين للحملج. خلال فترة الحملد. أ + ب

14- هل تعرفين مقدار الجرعة الصحيحة من حمض الفوليك: -

أ. نعم ب. لا

15- تعتقد أن نقص حمض الفوليك يسبب تشوهات خلقية: -

أ. نعم ب. لا

16- كم مرة يجب أن تتناول مكمل حمض الفوليك: -

أ. كل يومب. يوم بعد يومج. مرة واحدة في الأسبوعد. لا أعلم.

17- من المعروف أن حمض الفوليك يمنع:-

أ. متلازمة داون

ب. السنسنة المشقوقة(خلل في تكون النخاع العصبي والعمود الفقاري)

ج. الشلل الدماغي
د. الحصبة الألمانية

18- صِف بإيجاز ما تعرفه عن حمض الفوليك وما يوصى به يوميًا مخصص:

_____

_____

_____

القسم الثالث

يرجى قراءة كل من العبارات التالية المتعلقة بالعناصر الغذائية المختلفة وبيان عدد المرات التي تستهلك فيها كل عنصر. سيتم استخدام المقياس التالي لجميع أرقامه.

1 = لا تستهلكه أبدًا

2 = 1-3 حصص في الأسبوع

3 = 4-6 حصص في الأسبوع

4 = حصة واحدة يوميا

5 = 2-3 حصص يوميا

5	4	3	2	1	البند
					الخضارالورقية الخضراء
					الخضار الاخرى
					فواكه حمضيات
					فواكه اخرى
					حبوب مخصبة
					عصير البرتقال
					معكرونة
					ارز
					الدقيق المعزز بالعناصر الغذائية
					فاصولياء مجففة
					خبز
					حليب ومشتقاته
					فيتامينات تحتوي على فوليك اسيد