JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

"A STUDY TO ASSESS THE ROLE OF DIETARY MODIFICATIONS IN PREGNANT WOMEN FOR A HEALTHY CHILD IN GOVERNMENT INSTITUTE OF MEDICAL SCIENCES (GIMS) HOSPITAL OF UTTAR PRADESH."

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IN

B.SC NURSING PROGRAMME

SCHOOL OF NURSING

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ABSTRACT

A study to assess the role of dietary modifications in pregnant women for a healthy child in GOVERNMENT INSTITUTE OF MEDICAL SCIENCES (GIMS) HOSPITAL OF UTTAR PRADESH. The bonafide work in the partial fulfillment of the requirement for the degree of Bachelor of Science in Nursing.

Objectives: To increase awareness of the importance of nutrition during pregnancy. To Provide pregnant women with information on healthy eating during pregnancy. To Provide pregnant women with access to healthy foods.

Methodology: A descriptive approach was adopted for the study.

Setting: The study was conducted at Government Institute of Medical Sciences (Gims) Hospital Of Uttar Pradesh.

Sample: In the present study, sample were the pregnant women, mothers and children under 15 years old.

Sample size: For the present study sample size is 100 (40 pregnant women, 20 mothers and 40 children <15Yrs).

Methods of data collection procedure: Data were collected from the pregnant women, mothers and children under 15 years old to assess the amount of nutritional diet they were taken by using structured knowledge questionnaire and collecting data like BMIs, Blood pressure etc.

The collected data were tabulated and analyzed by descriptive graphs.

Results:

The significant finding of the GIMS Hospital study found that, because of unawareness of what went into their food, 65% of pregnant women experienced problems including high blood pressure and body mass index (BMI) as a result of bad eating habits. However, following an educational session, 70% of the women saw improvements in their nutrition and 80% of them had increased their knowledge. 60% of the kids were underweight even back then, showing how important nutritional education is for improving the health of both mothers and children.

Conclusion:

It was concluded that a great portion from pregnant women who visited GIMS Hospital were not well-educated about healthy prenatal dietary habits. But the organised training programme was an enabling a tool that helped raise awareness, to change food habits throughout pregnancy – something vital for both maternal and foetal health.

Keywords:

- Pregnant Women
- Nutrition, Prenatal Care
- Dietary Habits
- Maternal Health

CHAPTER-1

INTRODUCTION

LAUGHTER IS BRIGHTEST WHERE FOOD IS BEST.

-IRISH PROVERB

Obesity is a worldwide problem that contributes to an increased mortality and morbidity. During a survey, the World Health Organization prioritized obesity and overweight as risk factors for pregnancy survival in women of childbearing age. Women actually gained about 700 grams per year and increased their BMI over time. Most women have a normal healthy weight when entering pregnancy (Normal BMI ranging 18.5-24.9 kg/m2), but increasing body weight during pregnancy can lead to adverse outcomes such as low birth-weight and consequential long-term cardiometabolic health risks [1]. You might have type 2 diabetes and poor maternal weight gain during pregnancy is also a risk factor for mother as well as fetal. Consequently, proper nutrition of the mother ensures healthy fetal development and reduces many risks regarding complications such as congenital malformations, pre-term labor and low birth weight. Although there is an acknowledgment that a healthy diet is important for pregnancy, most women do not adhere either to the food guide recommendations (particularly those in poor health), where prenatal care is often compromised by a lack of nutritional knowledge or long wait times among healthcare providers. Nutrition communication can be helpful. Strengthen nutrition communication, they can make you communicate, eat healthier and be healthier [3]. Antenatal Diet is a healthy diet during pregnancy, that supports both mother and a baby by providing essential nutrients. It is required to have antenatal diet because it helps to promote baby's growth and development, reduces heart disease, diabetes and high blood pressure. For mother, it provides stronger immune system, reduces risk of diseases and more energy.

Key Nutrients:

- **Vitamin B1 (folic acid):** This vitamin helps to prevent abnormalities in pregnancy impacting the spine and brain. The chance of abnormalities in the neural tube is considerably decreased if the right amount of folic acid is taken in during the periconceptional phases (from nourishment or supplements).
- **Iron:** Anaemia is a disorder that not only puts at risk the health of the mother but also the developing kid. Iron is essential for the formation of blood and to prevent anaemia. By eating foods that are high in iron, it provides a necessary amount of iron to the increased blood flow during pregnancy.
- **Calcium:** It is necessary for a baby's teeth, muscles, and bones to develop. Eating meals rich in calcium helps the mother's bones lose less and meets the demands of the growing baby.
- **Protein:** Protein is the building block of life and contributes to the development of the baby's organs and tissues, so it is necessary in pregnancy. Eating a mixed diet of meats, fish, dairy, legumes, and plant proteins will provide you all the protein your body needs.

- **Omega-3 Fatty Acids:** These fats are important for the development of the baby's brain and vision. Including more omega-3 rich foods in your diet — like fatty fish, walnuts, chia seeds, and flaxseeds can help.
- **Vitamin:** It helps in calcium absorption and in formation the bones, in the mother and baby. Sunshine exposure makes it, as well, and you will get it in fortified diarylike milk, or eggs, fatty fish.
- **Fiber:** Eating foods rich in fiber can help prevent such pregnancy problems as constipation. You will include whole grains, vegetables, legumes, and fruits, among others on your menu rich in fibre.

Maintaining a Balanced Antenatal Diet:

Given the importance of different nutrients, no one can deny the importance and requirement of nutrients from balanced healthier menus. Some of the important tips to keep in mind when preparing for a well-balanced antenatal diet.

- **Variety & Colorful Meals:** Eat a variety of 5 colorful fruits and vegetables everyday along with whole grains, lean proteins and healthy fats. By adding a few different colours to your plate you can really boost the nutrient variety of your meal.
- **Avoid Hydrating Well**: It will keep your skin dry and take forever to absorb your food properly Drink lot of water throughout the day to keep hydrated and digestion in place.
- **Frequent Meals and Snack**: Eating small, but more frequent meals help to keep the blood sugar levels stable and provide a continuous source of nutrients for both mother and baby.
- **Minimize processed foods:** Processed foods are not good for you at the best of times, and if you're after glowy skin, they're just not going to help. Reduce your intake of sugar, and fatty, salty processed store-bought foods. When possible, Iore healthier choices.
- **For safe food practices:** Make informed choices and understand nutritional requirements. (E.g., don't eat raw or undercooked meats and unpasteurized milk products).

Category	Serving Size	Nutritional Benefits
Whole Grains	2+ cups per serving	Fiber, B vitamins, magnesium
Protein	2-3 servings	Lean protein, iron, zinc (sources: fish, poultry, beans)
Dairy	2-3 servings	Calcium, protein, vitamin D (sources: milk, yogurt, cheese)
Fruits	2-3 servings	Vitamins, minerals, fiber
Vegetables	4-5 servings	Vitamins, minerals, fiber
Oils	1-2 tablespoons	Omega-3 fats (sources: olive oil, canola oil)
Water	8-10 glasses	Hydration

BACKGROUND OF THE STUDY: -

Pregnancy is an important window that significantly affects maternal and child health. A balanced prenatal diet is essential that the baby is healthy throughout his life. Nonetheless, the adoption of healthier food choice may not be straightforward during pregnancy due to all kind of mechanisms like socio-economic status, lack of knowledge, little support from health care providers, etc. Knowing how these treatments influence mother and newborn, outcomes is important to promote healthy pregnancies and the maintenance of the good long-term health benefits.

Women starting pregnancy with a normal body mass index are at risk of gaining an excessive amount of gestational weight. It is found that this is associated with a number of poor outcomes, such as excessive birthweight of the infant, pregnancy-related complications and postpartum weight retention. This concluded that prenatal nutrition and lifestyle-based interventions can reduce gestational weight gain, weight gain over that recommended by the Institute of Medicine, and high blood pressure. Gestational diabetes, caesarean section and birthweight more than 4 kg were not significantly different between the groups. The study highlights that it is necessary that specific nutritional treatments be developed and evaluated in pregnant women in aiming to prevent excessive GWG and related issues. Building on this evidence, the goal of the present research is to determine which specific dietary changes contribute to gestational weight management and healthier gestational weight gain. (O'Brien, Grivell, and Dodd, 2016)[1]

The study of the feasibility and effectiveness of tools for the promotion of adequate food consumption among pregnant women was performed. The review included 17 studies that assessed tools of different distribution formats and content and providers. Results suggest that approaches best fitted to individual features and lifestyle behaviours, especially those provided by dietitians and nutritionists, may be most successful. Findings from this study underscore the importance of individualized treatment approaches in prenatal care. Our study aims to intervene through these adjustments and evaluate the effects of the implementation of individualised dietary changes to facilitate pregnant women to meet and maintain an adequate diet and thus improve maternal and neonatal health results. (Beulen et al. ,2020)[3]

This research was on the effects of prenatal lifestyle interventions in the prevention of childhood obesity This review contains eight studies in which children had adiposity measured at ages ranging from six months to seven years. Both individual and pooled measurements of body adiposity in offspring were also reduced, although the magnitude of the effect was reported as not clinically significant. Embed results are mixed, with some evidence suggesting a reduction in both individual and pooled measures of body adiposity in offspring, particularly in children of obese women, but other studies showed no clinically useful effect. The diversity of technique and results suggests the need for additional investigation to determine the lasting implications of prenatal interventions in childhood obesity. There is a void of information surrounding this issue, and my research aims to help fill this gap by considering whether making specific nutritional modifications while pregnant can reduce obesity risk in children, shedding light on ways to address effective, long-term health interventions. (Dalrymple et al. (2018)[2]

A study on the impact of prenatal diet and lifestyle advice on maternal diet and physical activity of overweight and obese pregnant women. Newly announced findings from a randomised controlled trial have revealed that comprehensive nutritional and lifestyle interventions increase food intake and physical activity levels among these women compared to those who receive conventional care. These results highlight the potential impact of targeted interventions on fostering appropriate mother health behaviours during pregnancy. My research aims to build on these benefits by focusing on diet interventions that affect maternal and neonatal health outcomes, especially in the area of preventing excessive weight gain and promoting overall health and wellness. (Dodd et al., 2014)[4]

In 2014 the study happens on the effects of antenatal dietary and lifestyle advice only from christie et al, on newborn outcomes in overweight and obese women. The trial made an account of the infant results recording gestational age at conveyance, Apgar score, requirement for revival, birth weight at delivery and nursery affirmation. The results suggested that prenatal interventions may help to improve a multitude of neonatal outcomes. This research highlights how the provision of dietary and lifestyle advice during pregnancy may improve the health of the next generation. We build on these findings in my study by exploring how single or combined dietary modifications might be effective for improving neonatal health outcomes, thereby facilitating the design of comprehensive prenatal care programs designed to improve the health of mother as well as child. (Dodd et al., 2014)[5]

NEED FOR THE STUDY:

Food habits of pregnant women have a significant influence on both maternal and new born health. Nutrition intake during pregnancy plays an essential role, hence not providing proper nutrition guidelines many pregnant women can be at risk to excessive gestational weight gain, gestational diabetes, hypertension, and adverse newborn outcomes. This study underscores the benefits of prenatal dietary and lifestyle approaches and yet significant knowledge gaps remain in identifying best diets that are generalizable to diverse populations of pregnant women. There is evidence for weight change across gestation having a modest effect on pregnancy outcomes. Using a normal body mass index (BMI) pregnancy group, their study assessed the effect of prenatal nutrition and lifestyle interventions, and showed that they might reduce gestational weight gain and hypertension. The study found a hole in understanding the downstream implications of these dietary changes for maternal and infant health. This discrepancy emphasizes the requirement for further exploration to clarify the importance of individual dietary modifications in pregnancy for the well-being of the child. We can boost the nutritional support offered by healthcare practitioners to pregnant and coeliac sufferers, by determining evidence-based suggestions from these diet treatments on their efficacy. All of this can help enhance pregnancy outcomes that lowers the risk of complications and ensures that overall mother and child health is at its best. Therefore, it is essential that we identify mechanisms through which nutritional alterations during pregnancy can promote better health for the offspring. This study aims to test that hypothesis and has the potential to establish new prenatal care paradigms and associated health endpoints for both mother and baby. (O'Brien, Grivell, and Dodd, 2016)[1]

Problem Statement

A STUDY TO ASSESS THE ROLE OF DIETARY MODIFICATIONS IN PREGNANT WOMEN FOR A HEALTHY CHILD IN GOVERNMENT INSTITUTE OF MEDICAL SCIENCES (GIMS) HOSPITAL OF UTTAR PRADESH.

OBJECTIVE

1. To increase awareness of the importance of nutrition during pregnancy.
2. To Provide pregnant women with information on healthy eating during pregnancy.
3. To Provide pregnant women with access to healthy foods.

OPERATIONAL DEFINITION

Assess: - It refers to the evaluation of dietary modifications in pregnant women for a healthy child.

Women: - It refers to those females who are pregnant or having baby under 15 yrs. of age.

Diet: - Foods to be taken during and after pregnancy to keep both the mother and kid healthy

HYPOTHESIS:

H0: At GIMS Hospital Pregnancy, the pregnancy of pregnant ladies will not have any significant difficulties as well.

H1: GIMS Hospital hospitals will have significant issues for pregnant women.

H2: An organized training program at GIMS hospital will not influence the knowledge and preparedness of pregnant women.

H3: Knowledge and preparedness of pregnant women will be improved after undergoing a structured training programme at GIMS Hospital.

ASSUMPTIONS:

1. Pregnant women at GIMS Hospital may encounter complications during pregnancy.

2. A convenient sample of pregnant women will be under study from GIMS Hospital.

LIMITATIONS:

1. Study included pregnant mothers receiving treatment at GIMS hospital.

2. The study was conducted in pregnant women at GIMS hospital of Uttar Pradesh, cannot be generalised.

DELIMITATION:

This study focuses exclusively on the pregnant women attending GIMS hospital, thereby excluding pregnant women receiving care at other healthcare facilities.

SUMMARY

This chapter includes a detailed discussion of the study's background, need, problem statement, objectives, operational definitions, assumptions, limitations, and delimitations. It establishes the foundation for understanding the scope and boundaries of the research. The next chapter will provide an overview of the literature reviewed for this study, offering insights into previous research and the context within which this study is situated.

CHAPTER-2

REVIEW OF LITERATURE

(Source: O'Brien, Grivell, and Dodd, 2016)[1]

The importance of comprehensive antenatal interventions focusing on diet and physical activity has been widely recognized in managing gestational weight gain (GWG). Early intervention is crucial, ideally beginning in the first trimester, to ensure adherence to dietary and lifestyle recommendations. The intensity and frequency of these programs significantly influence their effectiveness. Studies indicate that more intensive, ongoing support, including personalized meal planning and regular follow-ups, is associated with better outcomes in managing GWG. However, implementing such programs in standard clinical practice poses challenges, necessitating a balance between efficacy and practicality. The findings underscore the need for a structured approach to antenatal care that integrates both dietary counselling and physical activity guidance.

(Source: Dalrymple et al. (2018)[2]

The impact of behavioral interventions in antenatal care is increasingly acknowledged, particularly in addressing psychological factors that contribute to excessive gestational weight gain. Cognitive-behavioral therapy (CBT) and motivational interviewing (MI) have been integrated into antenatal programs to help women manage stress and enhance self-efficacy. These approaches have shown promise in improving adherence to lifestyle changes and reducing excessive weight gain during pregnancy. Women participating in CBT sessions have been more successful in avoiding excessive weight gain compared to those receiving standard care. Additionally, these interventions have been linked to better postpartum outcomes, such as lower rates of postpartum depression and greater postpartum weight loss, highlighting their holistic benefits.

(Source: Beulen et al. ,2020)[3]

The role of mHealth interventions in supporting antenatal care has gained traction, particularly with the increasing use of smartphones and digital platforms. Mobile health applications that offer tailored dietary advice, activity monitoring, and reminders have been shown to be effective in reducing gestational weight gain. These tools provide the advantage of convenience, allowing women to engage with the intervention on their terms. However, user engagement remains a critical factor in the success of mHealth interventions. Studies highlight the importance of digital literacy, user motivation, and application design in determining the effectiveness of these tools, suggesting a need for continued refinement to maximize their impact on diverse populations.

(Source: Dodd et al., 2014)[4]

The socioeconomic and cultural context of pregnant women plays a significant role in the success of antenatal interventions. Research in various regions, including low- and middle-income countries, reveals challenges in implementing standardized dietary and lifestyle programs. Cultural beliefs, economic constraints, and healthcare access all influence how women engage with these interventions. For example, traditional dietary practices during pregnancy may either support or conflict with medical recommendations, affecting

adherence. Moreover, in low-resource settings, barriers such as limited access to nutritious foods and inadequate healthcare infrastructure complicate intervention efforts. Tailoring antenatal programs to address these challenges is essential for enhancing their relevance and effectiveness in diverse settings.

(Source: Dodd et al., 2014)[5]

The involvement of healthcare providers is critical to the success of antenatal interventions aimed at managing gestational weight gain. The quality of the provider-patient relationship is a key factor in whether women adhere to dietary and lifestyle changes. Studies have shown that when obstetricians, midwives, and dietitians are actively involved in offering personalized care, adherence rates improve. Training healthcare providers to deliver evidence-based advice and support is therefore crucial. Time constraints in busy clinical settings can limit the support offered, but innovative approaches, such as group sessions or the integration of support staff like dietitians, can help ensure comprehensive care is delivered.

(Source: Teede, H. J., Bailey, 2022)[6]

Exploring the cost-effectiveness of antenatal interventions is crucial for their widespread adoption, especially in resource-constrained environments. Studies have evaluated the economic impact of various antenatal programs, comparing the long-term healthcare savings from reduced gestational weight gain and its associated complications against the upfront costs of implementing these programs. The findings suggest that while intensive interventions may be more costly initially, they can lead to significant savings by preventing adverse maternal and neonatal outcomes. This economic perspective underscores the importance of investing in effective antenatal care programs as a means of reducing overall healthcare expenditures, particularly in public health systems.

(Source: Luo M, 2022)[7]

The long-term impact of antenatal interventions on maternal and child health extends beyond pregnancy, influencing postpartum health outcomes. Research indicates that women who participate in structured antenatal programs are more likely to achieve postpartum weight loss and maintain healthier lifestyles, reducing their risk of chronic conditions like obesity and cardiovascular disease. Additionally, the benefits extend to the child, with lower incidences of childhood obesity and related health issues. These findings highlight the importance of continuity of care, suggesting that antenatal interventions should be integrated into broader strategies for promoting long-term maternal and child health, rather than being viewed as isolated, short-term programs.

(Source: Okesene-Gafa, K. A., 2019)[8]

The role of environmental and societal factors in the success of antenatal interventions cannot be overlooked. Research has shown that the availability of community resources, such as access to parks and healthy food outlets, significantly influences the effectiveness of lifestyle interventions during pregnancy. Studies suggest that women living in environments with more opportunities for physical activity and healthier food options are more likely to adhere to dietary and exercise recommendations, leading to better management of

gestational weight gain. This highlights the need for public health strategies that not only focus on individual behavior change but also on improving the broader environment to support healthy pregnancies.

(Source: Schoeps,2022)[9]

The role of peer support in antenatal interventions has also been explored, with findings suggesting that women who participate in group-based programs or receive support from peers are more likely to adhere to recommended lifestyle changes. Peer support can provide motivation, reduce feelings of isolation, and enhance the sense of accountability, all of which contribute to better outcomes in managing gestational weight gain. This approach has been particularly effective in diverse populations, where cultural and social connections can be leveraged to support behavior change. The integration of peer support into antenatal programs offers a promising avenue for enhancing their effectiveness and reach.

(Source: Zobairi,1998)[10]

The importance of personalized care in antenatal interventions has been emphasized in recent research. Studies have shown that interventions tailored to the individual needs of pregnant women, taking into account their medical history, risk factors, and personal preferences, are more effective in managing gestational weight gain. Personalized care can involve adjusting dietary and exercise recommendations based on the woman's baseline health status and preferences, as well as providing targeted support for those at higher risk of complications. The success of personalized interventions highlights the need for flexible, patient-centered approaches in antenatal care, ensuring that each woman receives the support most relevant to her circumstances.

(Source: Delil, R, 2021)[11]

Dietary diversity is a critical aspect of maternal nutrition, particularly during pregnancy when nutrient demands are elevated. This study conducted at Wachemo University Nigist Eleni Mohammed Memorial Referral Hospital in Southern Ethiopia assessed the dietary diversity practices among pregnant women and identified key determinants influencing these practices. The findings revealed that only 42.6% of the women practiced adequate dietary diversity. Factors such as higher household income, maternal education, partner's education, and receiving nutritional information were significantly associated with better dietary diversity. These results underscore the importance of socioeconomic factors and education in promoting better nutritional outcomes during pregnancy, highlighting the need for targeted interventions to improve dietary practices among pregnant women in similar settings.

(Source: Khanagoudar, 2023)[12]

Anemia during pregnancy remains a significant public health challenge, particularly in developing countries, due to its association with adverse pregnancy outcomes. This study aimed to assess the nutritional diet of anemic and non-anemic antenatal mothers and evaluate their knowledge and practices regarding the effects of antenatal diet. Conducted with 500 anemic and 500 non-anemic mothers, the study found a significant difference in knowledge and practice scores between the two groups. Anemic mothers had lower knowledge

and practice scores compared to non-anemic mothers, indicating a gap in awareness and dietary management among those suffering from anemia. The findings suggest the need for enhanced educational programs to improve the dietary knowledge and practices of anemic mothers, ultimately aiming to reduce the prevalence and impact of anemia during pregnancy.

(Source: Gow, 2023)[13]

The relationship between antenatal nutrition and postpartum depression (PPD) is complex, with mixed findings in existing research. This study, part of the Microbiome Understanding in Maternity Study (MUMS) cohort, investigated whether the quality of a pregnant woman's diet was associated with PPD and depression during pregnancy. The results indicated a strong correlation between depression scores during pregnancy and PPD, emphasizing the need for regular depression screening throughout the perinatal period. However, no significant association was found between diet quality during pregnancy and PPD in this cohort. While diet is crucial for overall maternal and fetal health, its direct impact on depression may require further exploration in larger studies to draw more definitive conclusion.

(Source: Mary, 2023)[14]

Pregnancy, while a time of joy, can also be accompanied by significant challenges, particularly for first-time mothers (primi mothers). This study explored the impact of midwife-led educational interventions on the knowledge and attitudes of primi mothers regarding antenatal exercises and diet. Using a true experimental design, the study revealed that the intervention group showed significant improvements in knowledge and attitudes compared to the control group, which did not receive any educational support. The findings highlight the effectiveness of midwife-led education in empowering first-time mothers with the knowledge and confidence needed to manage their pregnancy effectively. These results support the implementation of similar educational programs in antenatal care settings to improve maternal and fetal health outcomes.

(Source: Castro-Barquero, 2023)[15]

Adherence to a healthy dietary pattern, such as the Mediterranean diet, during pregnancy is associated with better maternal and fetal health outcomes. This cross-sectional study of 1,356 pregnant women found that those with high adherence to the Mediterranean diet had a significantly lower risk of inadequate intake of essential macro and micronutrients. The Mediterranean diet was particularly effective in improving the intake of nutrients like calcium, magnesium, iron, and various vitamins, which are often deficient during pregnancy. These findings suggest that promoting the Mediterranean diet among pregnant women could be a valuable public health strategy to enhance diet quality and prevent nutrient deficiencies, thereby supporting healthier pregnancies and reducing the risk of complications associated with poor nutrition.

(Source: Bookari, K., 2017)[16]

This study highlights the challenges pregnant women face in achieving adequate nutrition, particularly focusing on disparities based on socioeconomic status and access to healthcare. The research emphasizes the critical role of healthcare providers in offering reliable nutrition information, yet identifies significant gaps in

the delivery and accessibility of such guidance. The findings stress the need for tailored interventions to improve nutrition education, especially for those with limited resources, and call for a more integrated approach to maternal healthcare that considers the unique needs of diverse populations.

(Source: Bryant, J., 2019)[17]

This paper explores the perceptions and behaviors of pregnant women regarding nutritional information, revealing a reliance on various sources such as healthcare providers, media, and social networks. The study underscores the importance of healthcare providers in offering accurate information but also points out the challenges, such as time constraints and varying levels of engagement. The confusion and overwhelm experienced by women due to conflicting information from less reliable sources suggest the necessity for more structured and supportive communication strategies within healthcare settings. The research examines the delivery of dietary advice in antenatal care, showing that while most women believe nutrition guidance should be part of routine care, a significant portion does not recall receiving such advice. The study identifies midwives as the primary source of this information, often provided in the early stages of pregnancy. The findings highlight the need for more consistent and clear communication to prevent confusion about dietary restrictions and ensure that all pregnant women receive the necessary guidance to make informed dietary choices.

(Source: Super, S., Beulen, 2021)[18]

This study focuses on the opportunities for dietitians to support pregnant women, particularly those with low socioeconomic status, in the Netherlands. The research identifies several key areas where dietitians can make a significant impact, such as raising awareness of healthy eating patterns, providing personalized advice, and addressing barriers to healthy eating. The study calls for stronger collaboration between dietitians and midwives to ensure that nutrition becomes a standard component of antenatal care, particularly for vulnerable populations.

(Source: Nana, 2018)[19]

This paper assesses dietary practices among pregnant women in Bahir Dar, Ethiopia, finding that a majority of participants have poor dietary practices despite having some level of dietary knowledge. The study identifies factors such as household income, access to media, and previous health conditions as significant determinants of dietary behavior. The findings suggest that improving dietary practices in this population requires targeted education and intervention programs that address these specific barriers.

(Source: Chatterjee, N., 2014)[20]

The research delves into the perceptions and practices related to anemia among pregnant women in Mumbai, India. It reveals a general lack of concern about anemia's impact on maternal health, with many women viewing it as a normal part of pregnancy. The study highlights the need for educational programs that not only distribute supplements but also address cultural perceptions and gender norms that contribute to the normalization of anemia, ultimately advocating for a more holistic approach to maternal health education.

(Source: Andersen, L. T., 2003)[21]

This study evaluates the dietary intake of pregnant women in rural South India, finding that their diets are largely insufficient in energy and nutrients, with low intakes of foods other than rice. The research identifies economic constraints and traditional eating customs as significant barriers to meeting dietary recommendations. The study suggests that nutrition education should focus on promoting the consumption of affordable, locally available foods and ensure that all healthcare providers deliver consistent, evidence-based dietary advice.

(Source: Nagi, R., 2016)[22]

This paper examines oral health awareness and nutritional knowledge among pregnant women in Bilaspur, India, revealing significant gaps in both areas. The study finds that while most women practice basic oral hygiene, there is limited awareness of the risks of periodontal disease during pregnancy. Nutritionally, the research shows that knowledge of food sources and balanced diets is low, particularly in rural areas. The findings call for integrated educational efforts that address both oral health and nutrition as critical components of prenatal care.

(Source: Nguyen, P. H., 2021)[23]

This study reviews maternal dietary patterns in India, highlighting suboptimal energy and nutrient intake among pregnant women. The research identifies several barriers to adopting recommended diets, including economic limitations, food availability, cultural food practices, and insufficient exposure to nutrition counseling. The study advocates for a multi-sectoral approach that includes food-based programs, behavior change communication, and nutrition-sensitive agriculture interventions to improve maternal diets, though it also notes challenges in the implementation and effectiveness of these strategies.

(Source: Mudhaliar, 2017)[24]

This study emphasizes the critical role of maternal nutrition in determining pregnancy outcomes, particularly in the Indian context where undernutrition is prevalent. The research provides updated insights into the nutritional status of 220 pregnant women, highlighting alarming statistics like an 87.43% prevalence of low birth weight and 78.19% anemia among participants. It underscores the need for tailored healthcare protocols to address maternal undernutrition, a key factor contributing to adverse gestational outcomes. The study advocates for a deeper understanding of the relationship between maternal nutrition and birth size to enhance intervention strategies.

(Source: Shivalli, 2015)[25]

This quasi-experimental study explored the effectiveness of the 'Trials of Improved Practices' (TIPs) approach on improving dietary and iron-folate intake during pregnancy. Conducted in four villages of Chiraigaon, Varanasi, it revealed significant improvements in nutritional outcomes among pregnant women who received TIPs intervention compared to a control group. The TIPs group showed higher hemoglobin levels, reduced anemia prevalence, and better compliance with iron-folate supplementation. This study highlights the

potential of community-based behavior change strategies to enhance maternal nutrition and calls for larger studies across diverse socio-cultural settings to validate these findings.

(Source: Nguyen, 2019)[26]

This research in Uttar Pradesh, India, examines the multifactorial determinants of maternal nutrition practices, including diet diversity, iron-folic acid (IFA) and calcium supplementation, and weight monitoring. The study found that factors like nutrition knowledge, self-efficacy, family support, and health service quality significantly influence these practices. Despite strong policy support, the study notes that many women still do not receive adequate nutrition services. It suggests that optimal program implementation could substantially improve maternal nutrition practices but emphasizes the need for broader socio-economic improvements to fully meet WHO recommendations.

(Source: Pathak, 2004)[27]

This cross-sectional study conducted in rural Haryana, India, assesses the prevalence of multiple micronutrient deficiencies among pregnant women. It found high rates of deficiencies in zinc, iron, magnesium, and folic acid, with many women showing concurrent deficiencies. The study attributes these deficiencies to poor dietary intake and low frequency of micronutrient-rich food consumption. It highlights the critical need for targeted nutritional interventions, especially considering the high prevalence of inadequate nutrient intake among pregnant women, which could have severe implications for maternal and fetal health.

(Source: Jood, S., Bishnoi, 2002)[28]

This study investigates the dietary intake of rural pregnant women in Haryana, India, revealing significant inadequacies in the consumption of key food groups like cereals, pulses, vegetables, and fruits. Despite some respondents having higher-than-recommended intakes of milk and fats, the overall diet was found to be deficient in essential nutrients like protein, beta-carotene, and ascorbic acid. The research underscores the need for nutritional education among rural pregnant women to address these dietary gaps and improve their nutritional status, which is crucial for better pregnancy outcomes.

(Source: Sachan, A., 2005)[29]

This study highlights the high prevalence of hypovitaminosis D among pregnant women in India, a surprising finding given the country's abundant sunlight. The research shows that over 84% of the pregnant women studied had low levels of 25-hydroxyvitamin D, which correlated with elevated parathyroid hormone levels, indicating significant physiological implications. The study also found a strong correlation between maternal and cord blood vitamin D levels, suggesting the need for public health interventions to address this widespread deficiency, which could have serious consequences for both maternal and neonatal health.

(Source: Garnweidner, 2013)[30]

This qualitative study conducted in Oslo, Norway, explores pregnant women's experiences with nutrition-related information during antenatal care. The findings reveal that women, especially those with immigrant backgrounds, often found the nutritional advice given by midwives to be too general and sometimes conflicting with their cultural dietary practices. The study highlights the gap in tailored nutritional communication in antenatal care and suggests that midwives could play a more significant role in promoting a healthy diet by providing culturally sensitive and personalized nutrition advice.

CHAPTER-3
RESEARCH METHODOLOGY

RESEARCH METHODOLOGY:

In this chapter we describe the methodology and the various steps involved for collecting and organizing information to perform the study It involves description of Research Approach Setting Research design, Sampling technique, details of tool, the training strategy, pilot study, data collection and data Analysis for research.

RESEARCH APPROACH:

The basic procedure to conduct research inquiry is selection of research approach A descriptive approach was adopted for the study.

RESEARCH DESIGN:

A Blueprint to conduct a study is a known as a research design. It helps in maximizes to control elements which could hinder the desired outcome of research study. After considering the entire factors related to the selected problem, the researcher had selected the descriptive approach to the specific, a checklist is conducted and given to a group and a questionnaire is distributed to another group.

VARIABLES:

An attribute of an object or person that differing multiple variables are known as variables.

In this research we have taken-

- **Independent variables:**
  In this study training program is organized to minimize the risk of Infant Mortality rate and Malnutrition among Mothers is independent variable.

- **Dependent variables:**
  In the present study the dependent variable is awareness of Pregnant Women of selected hospital in Greater Noida.

SETTING OF THE STUDY:

For this research locus and the conditions where data was collected is Government Institute of medical science (GIMS), Hospital was selected as study setting which is situated in Kasana Village of Greater Noida.

POPULATION: In the present study population was defined as Pregnant Women.

- **Available Population:** Available population incorporates women who were available when data was collected in Gims hospital Accessible population of present study was Pregnant Women in GIMS hospital greater Noida.

SAMPLING: -

Sample: In the present study, sample were the pregnant women, mothers and children under 15 years old.

Sample size: For the present study sample size is 100 (40 pregnant women, 20 mothers and 40 children <15Yrs).

Sampling technique: - Pregnant Women and Children are selected by Non experimental descriptive sampling technique from GIMS Hospital greater Noida who fulfilled the inclusion criteria.

CRITERIA FOR SAMPLE SELECTION: -

Inclusion Criteria:

- Patients in selected hospital.
- Who are willing to participate
- Available at time of data collection

Exclusion Criteria:

- Patients who were unwilling to involve in research project at selected hospital.
- Who were absent during pre-test, teaching program or post-test.

RESEARCH TOOL: -

The aim of project was to evaluate the difficulties and obstacles encountered by Pregnant women during their gestation period in GIMS hospital and to evaluate effectiveness of structured teaching program among all willing patients.

Following tools were used for data collection:

Tool 1: Socio-Demographic data of Women.

Tool 2: A pilot questionnaire to assess awareness of Antenatal diet among Patient in Hospital.

Tool 3: Checklist to assess the challenges and readiness of Pregnant women and mothers.

DESCRIPTION OF TOOLS:

Tool 1:Sociodemographic Data tool for Women- Sociodemographic Data- Socio-Demographic data for women visiting GIMS hospital Demographic data include their age, educational level, occupation, marital status, area of residence (defined as rural or urban), mode of transportation used to get to the hospital, lifestyle factors (including dietary habits and physical activity), past and present medical history in terms of diseases - such as hypertension, diabetes mellitus), religion and family type (nuclear or joint family) and household income.

Tool 2: An Investigational Pilot Questionnaire -This questionnaire consists of the listing of questions and has multiple choice questions to assess the awareness and knowledge of pregnant women in terms of antenatal nutrition regarding their diet at the hospital setting. Split into 15 sections, the paper discusses different aspects of nutritional requirements, recommended dietary practices in pregnancy and common dietary fallacies. One mark per correct answer, maximum fifteen points. This pilot questionnaire is used to identify educational interventions that can fill existing knowledge gaps. A checklist to appraise trouble confronting/potential importance of laden women and mothers is.

Tool 3: Checklist for Assessing the Challenges and Readiness of Pregnant Women and Mothers: One of the eight-point checklists consisted of true/false or yes/no questions. One point is awarded for each correct answer, giving a maximum score of eight. The list covers everything from going to the hospital, how mentally prepared are you, what you know about labor and access to home support systems. This can be helpful in pinpoint some specific topics that pregnant mothers might need extra help or guidance on.

PURPOSE OF RESEARCH:

To find out difficulties encountered by pregnant ladies during their pregnancy period attending at GIMS Hospital. It also intends to evaluate the effectiveness of a structured educational programme for all consenting patients. The focus is on getting a sense of key challenges faced by such women and demarcating whether educational interventions might improve their understanding/ readiness for pregnancy/ delivery.

CONTENT VALIDITY:

Content validity ensures that research instruments can accurately measure the expected behavior or events. For this study, we developed a structured training programme and data gathering instruments in both English and Hindi to ensure that all participants would be able to comprehend and respond. The tools were content valid because professionals judged the items in both languages to be relevant, comprehensive and clear about what they should grasp around pregnant women's problems and prep.

RELIABILITY:

Research re-liability is consistency, correctness, stability and homogeneity. The socio-demographic data tool, pilot questionnaire and checklist were delivered initially to a sample of 33 pregnant women at GIMS Hospital by one teacher in order to check the reliability. These initial tests showed that the instruments were reliable and consistent, with precise and stable measurements in the different participants.

PILOT STUDY:

The pilot study is a mini-version of the main study which is conducted in order to check out whether the research methodology and equipment used can be feasible and reliable. The study was a pilot study conducted in GIMS hospital on a small sample of pregnant women. This pilot trial was crucial to assess whether the implementation of the data collecting methods and tools for the main study were feasible and could be trusted.

DATA COLLECTION PROCEDURE:

This is a systematic approach in different stages that are used to gather the necessary information for research inquiry. Emergency permitted by the officials at Greater Noida: GIMS Hospital. All participants were informed of the study and gave written consent. We collected data from April 4 to April 24, 2024. Participants first completed a pretest and logged on to the computer where they followed a scripted 45-minute instruction programme. After implementing the intervention, post-test assessments were used to evaluate whether participants reported higher identifications of potential for harm and readiness.

PLAN FOR DATA ANALYSIS:

Data analysis carries informative significance due to the interpretation and summarization of findings. Collected data were compiled and analyzed by descriptive statistics for summarizing characteristics of the samples. Demographic data were described by percent distributions. Biostatistical methods were used to justify levels of awareness and preparation by pregnant mothers. We used paired t-test to evaluate the effectiveness of structured instruction program in increasing participants knowledge and readiness for pregnancy and labour.

SUMMARY:

In this research, a brief introduction about the concept of project, research methodology as experimental study; and covered variables including independent and dependent. Description of study setting, sample size and inclusion & exclusion criteria Full details of instruments used. The strategy included: sample strategies, content validity, pretesting tools, dependability of data collection and plan for analysing the data. This holistic approach added in-depth understanding of the problems faced by pregnant women and helped provide insight on effectiveness of the planned training program at GIMS Hospital.

CHAPTER-4

ANALYSIS AND INTERPRETATION OF DATA

TABLE-1

Respondents by People

Respondent	Frequency	Percent
Pregnant Women	40	40.0
Children	20	20.0
Mothers	40	40.0
Total	**100**	**100.0**

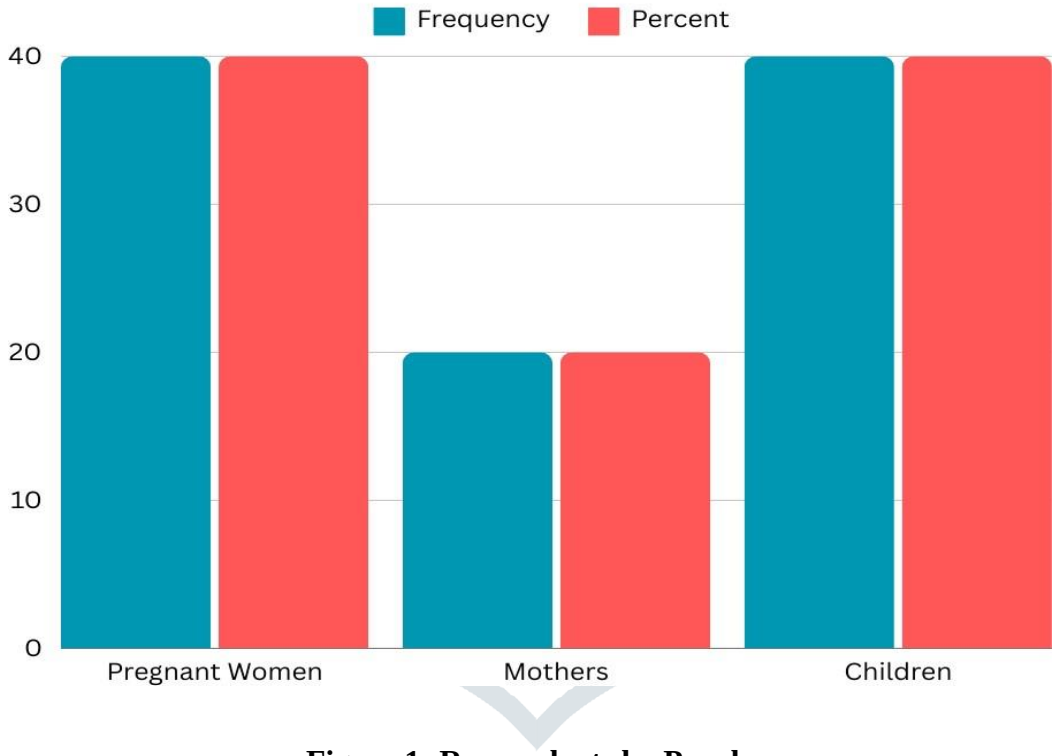

Figure.1: Respondents by People

The data presented in table 1 shows that majority (40%) people are Pregnant women and Mothers whereas 20% were children under 15 yrs.

TABLE-2

Respondents by Age

Age	Frequency	Percent
10	2	2.0
11	5	5.0
12	10	10.0
13	10	10.0
14	13	13.0
23	4	4.0
26	13	13.0
27	5	5.0
28	10	10.0
29	4	4.0
30	3	3.0
31	1	1.0
32	5	5.0
33	10	10.0
34	1	1.0
35	2	2.0
36	2	2.0
Total	**100**	**100.0**

TABLE-3

Respondents by Parental Status

Parental Status	Frequency	Percent
Single Parent (Mother)	5	5.0
Dual Parent (Father & Mother)	55	55.0

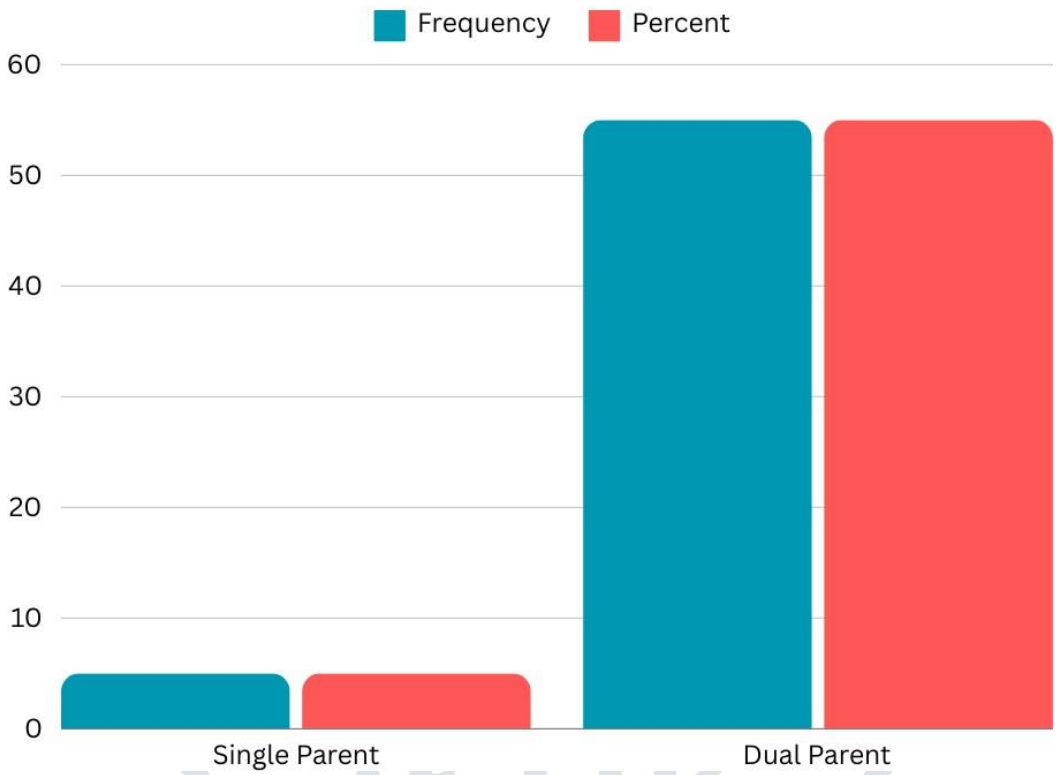

Figure-3. Respondents by Parental Status.

The data presented in Table 3 shows that the majority were dual parent. This indicates a higher proportion of respondents living in dual-parent households.'

TABLE-4

Respondents by Number of Children

Number of Children	Frequency	Percent
Single child	45	45.0
Multiple children	55	55.0
Total	**100**	**100.0**

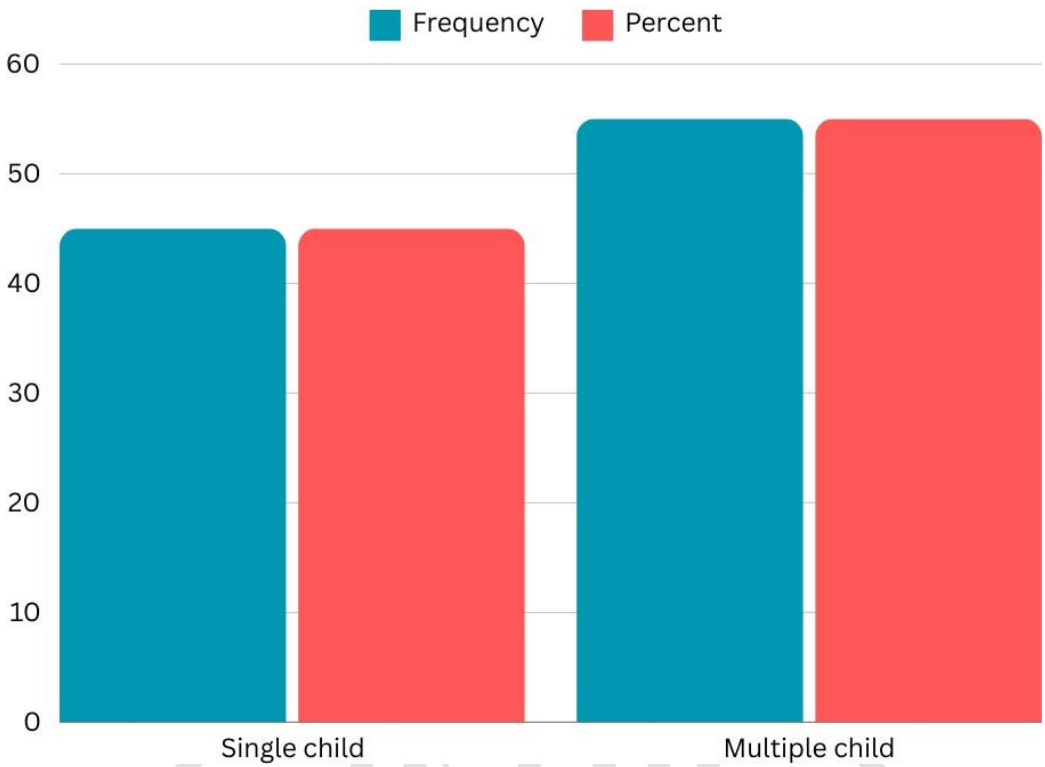

Figure-4. Respondents by Number of Children

The data presented in Table 4 shows that the majority (55%) had multiple children, whereas 45% had a single child. This indicates a higher proportion of respondents with more than one child.

TABLE-5

Respondents by Employment Status

Employment Status	Frequency	Percent
Housewife	65	65.0
Employed	35	35.0
Total	**100**	**100.0**

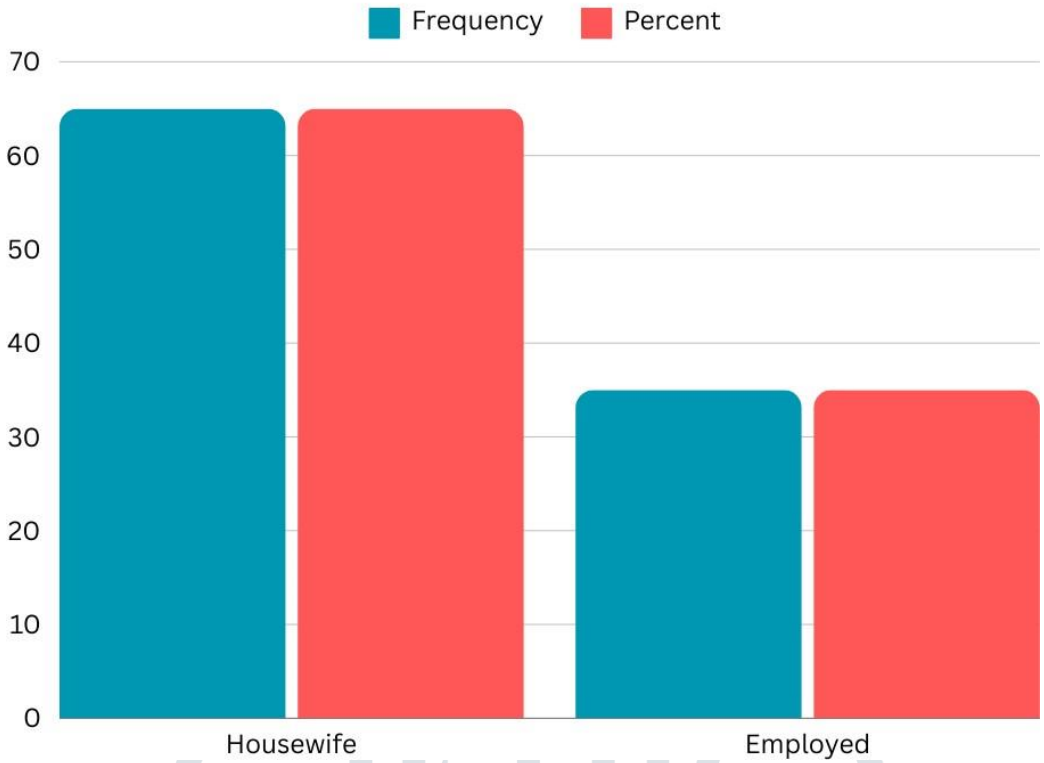

Figure-5. Respondents by Employment Status

The data presented in Table 5 shows that the majority (65%) were housewives, whereas 35% were employed. This indicates a higher proportion of respondents who are housewives.

TABLE-6

Respondents by Type of Family

Family Type	Frequency	Percent
Joint Family	63	63.0
Nuclear Family	37	37.0
Total	**100**	**100.0**

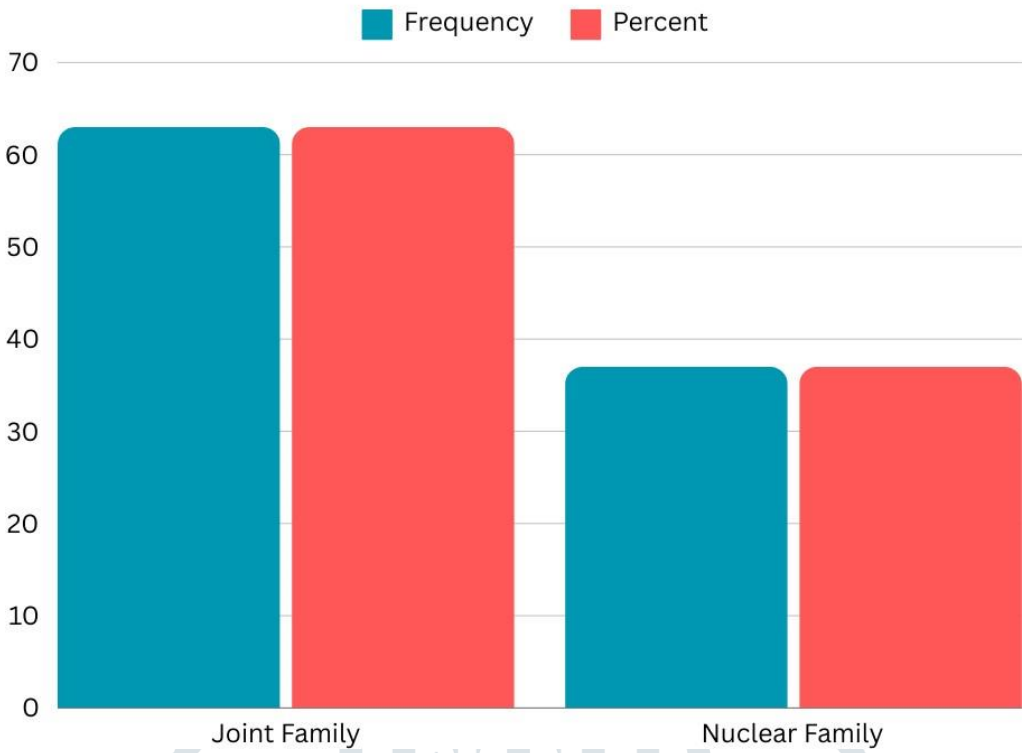

Figure-6. Respondents by Type of Family

The data presented in table 6 shows that majority (63%) women were living in joint family whereas 33% staffs were living in nuclear family.

TABLE-7

Respondents by Education Level

Education level	Frequency	Percent
No Formal Education	5	5.0
Primary Education	20	20.0
Secondary Education	50	50.0
Higher Education	25	25.0
Total	**100**	**100.0**

TABLE-8

Respondents by Income Level

Income Level	Frequency	Percent
Low Income	30	30.0
Middle Income	50	50.0
High Income	20	20.0
Total	**100**	**100.0**

TABLE- 9

Respondents by Parity

Parity Status	Frequency	Percent
Primiparous	40	40.0
Multiparous	60	60.0
Total	**100**	**100.0**

TABLE-10

Respondents by BMI

BMI	FREQUENCY	PERCENT
Underweight	10	10.0
Normal weight	50	50.0
Overweight	25	25.0
Obese	15	15.0
Total	**100**	**100**

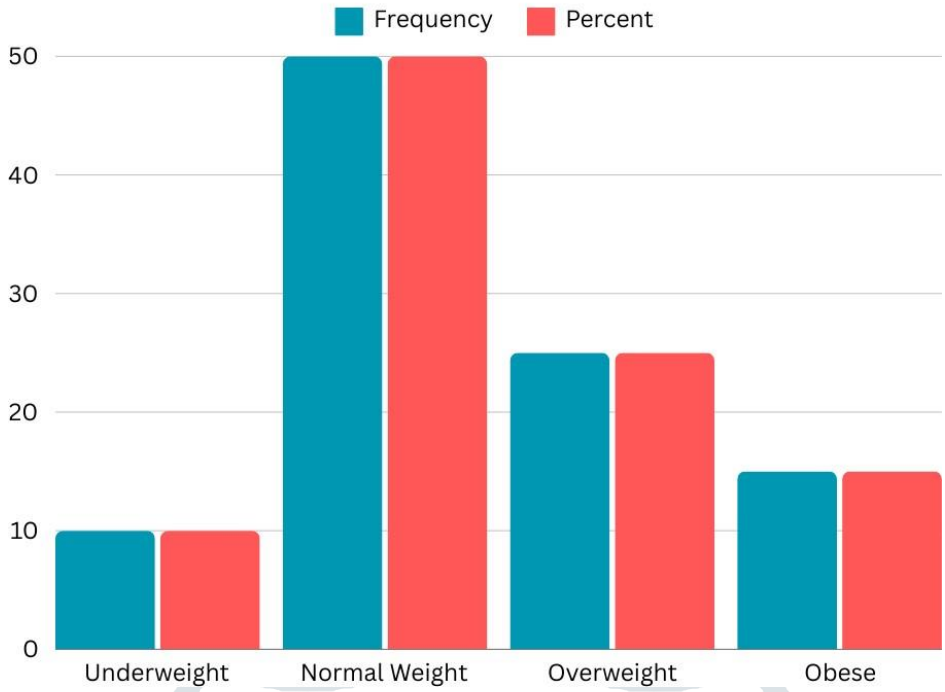

Figure-10. Respondents by BMI

The data presented in Table 10 shows that the majority (50%) of the respondents had a normal BMI, whereas 25% were overweight, 15% were obese, and 10% were underweight. This indicates that a significant proportion of respondents had a normal BMI.

TABLE- 11

Respondents by Nutritional Status

Nutritional Status	Frequency	Percent
Malnourished	20	20.0
Well-nourished	80	80.0
Total	**100**	**100**

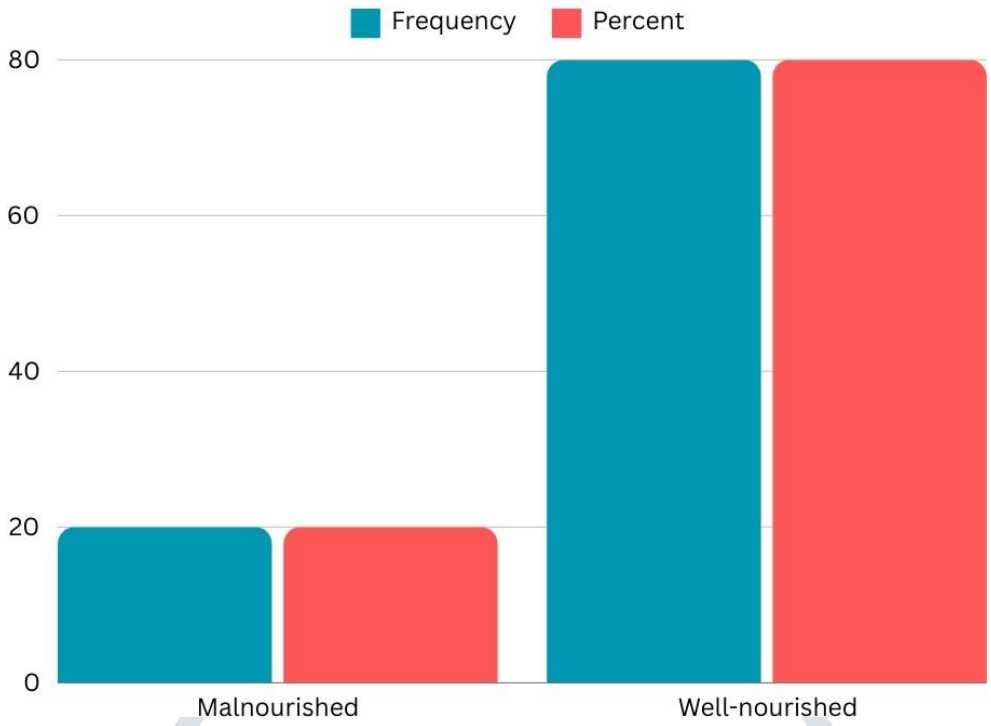

Figure-11. Respondents by Nutritional Status

The data presented in Table 11 shows that the majority (80%) of the respondents were well-nourished, whereas 20% were malnourished. This indicates that most respondents had adequate nutrition.

TABLE- 12

Respondents by Previous Pregnancy Complications

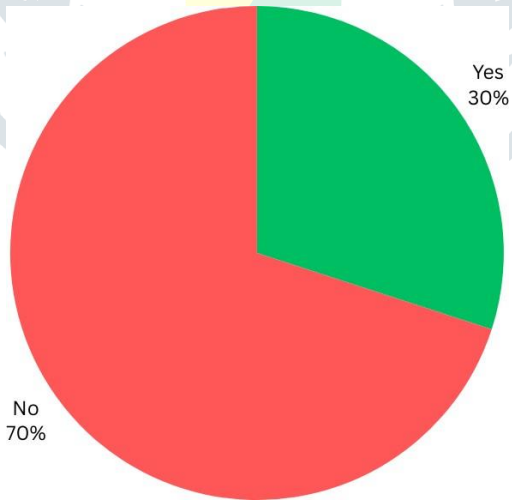

TABLE-13

Respondents by Access to Prenatal Care

Prenatal Care	Frequency	Percent
Regular Access	75	75.0
Irregular Access	25	25.0

Total	**100**	**100**

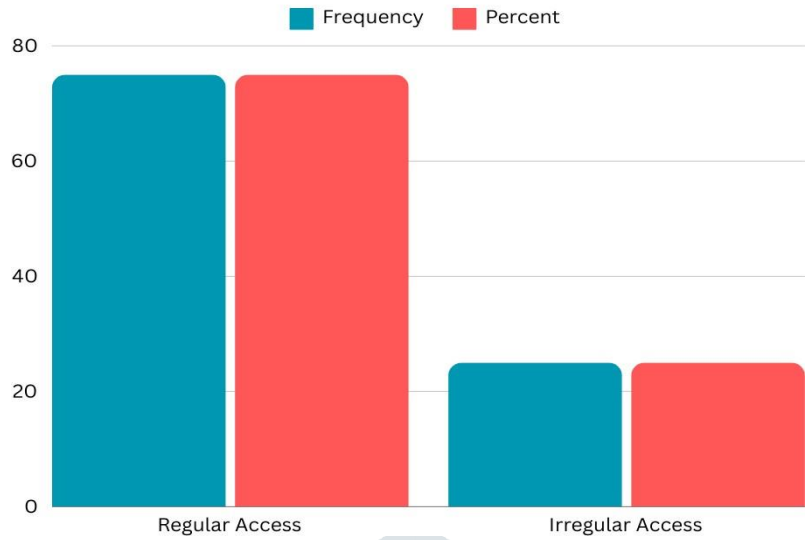

TABLE- 14

Respondents by Family Support

Family Support	Frequency	Percent
Strong Support	**60**	**60.0**
Moderate Support	**30**	**30.0**
No Support	**10**	**10.0**
Total	**100**	**100**

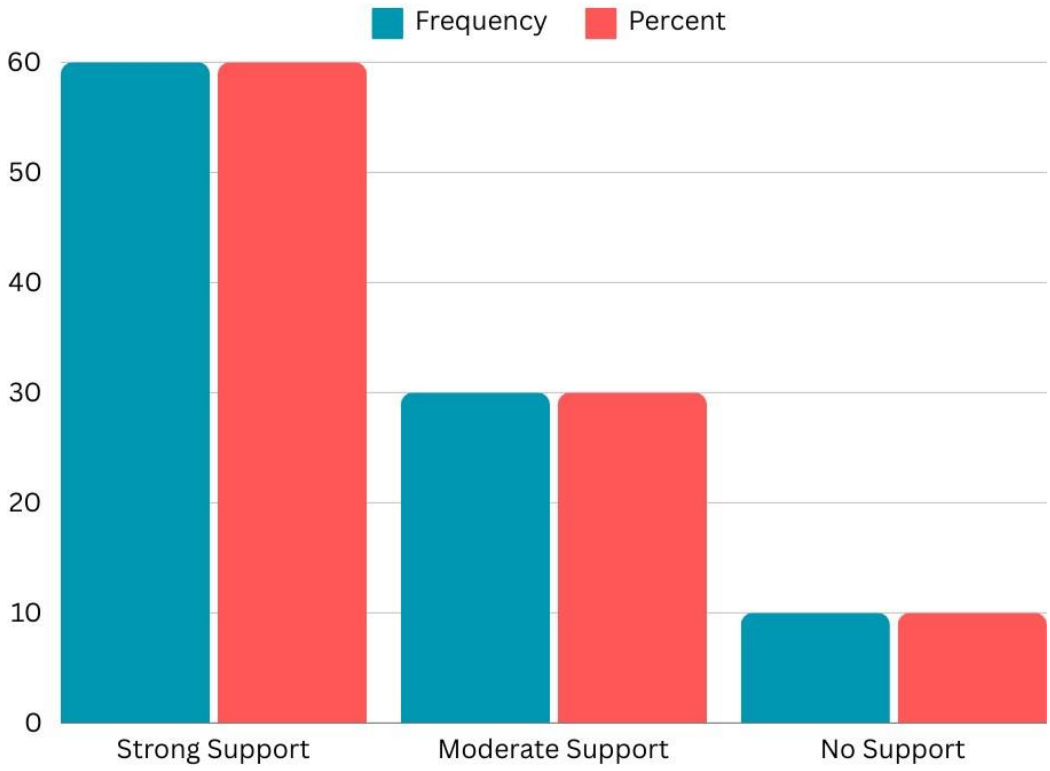

Figure-14. Respondents by Family Support

The data presented in Table 14 shows that the majority (60%) of the respondents had strong family support, whereas 30% had moderate support and 10% had little to no support. This indicates that most respondents had strong family support.

CHAPTER-5

DISCUSSION, IMPLICATIONS, LIMITATIONS, RECOMMENDATIONS, SUMMARY AND CONCLUSION

This chapter is divided into five sections:

- ✓ Summary
- ✓ Conclusion
- ✓ Implications
- ✓ Recommendations
- ✓ Limitations

This section presents a synopsis of the research, its conclusions and implications for nursing and healthcare services, followed by the limitations of the study, and suggestions for future research in this field.

DISCUSSION

This chapter focuses on the results of the research of what pregnant women face during their gestation period at GIMS Hospital, and how successful was education organized. The debate is focused on key areas identified during the review, particularly prenatal nutrition knowledge and issues relevant to this.

PREGNANT WOMEN FACE CHALLENGES:

1. Lack of Awareness Regarding Antenatal Diet:

The lack of knowledge and information on the best prenatal nutrition for pregnant women was found to be one of the main problems. Most subjects knew nothing about the essential nutrients for pregnancy (folic acid, iron, calcium and vitamins). The result of their insensitivity I something detrimental as it would seem an unawareness that can lead to poor nutritional decisions, which could be damaging for both mother and infant.

2. Nutritional Misconceptions:

Participants held common misconceptions about pregnancy nutrition as revealed in the study. Eating for two is often taken to imply that you just double the amount of food, regardless if it's filled with empty energy or nutritionally sound. While some foods went by the wayside because of longstanding cultural fallacies, that might have brought on nutrient-deprivation in many people.

3. Psychological and Emotional Barriers:

Emotional and psychological barriers can significantly impact food choices during pregnancy. Stress, worry, and melancholy, which are prevalent among expecting moms, frequently resulted in reduced appetite or harmful eating habits. Emotional eating, in which food is ingested in reaction to moods rather than hunger, has also been reported, contributing to unhealthy diets.

4. Socio-Economic Factors:

Choices are largely influenced by socio-economic status. Pregnant women from lower socio-economic groups often have limited access to a varied diet of healthy foods and may be forced to rely on cheap, staple diets that lack essential nutrients. Institution of global financial strictures meant purchasing a balanced diet was difficult risking dangers for the health both mother and baby.

5. Influence of Family and Cultural Practices:

Dietary habits during pregnancy are highly dependent on family and cultural norms. Remaining on previous generations dietary practices, which were often slandered [unfilled title: the vast majority contained little to no nutrition!] Cultural food taboos for instance can lead to missing some very key nutrients needed in pregnancy.

EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME:

1. Improvement in Knowledge:

Overall, the tailored education programme significantly improved knowledge on prenatal nutrition among participants. Both in- and out-of-school pre/post-test evaluations showed significant knowledge increase regarding the essential nutrients, need for balanced diet and health benefits of adequate nutrition to mother as well as growing foetus.

2. Behavioral Changes:

Post the coaching session few came back with great improvement in their dietary habits. They started incorporating more fruits, vegetables and protein-rich meals in their diets. In addition, the consumption of processed and junk foods greatly reduced suggesting a shift towards healthier dietary behaviours.

3. Increased Confidence and Preparedness:

Participants were able to form their own confidence in themselves for being responsible as a pregnant woman toward food, and general health during pregnancy. They knew how to make informed food choices and recognise the complexities of nutrients in each stage of pregnancy. These characteristics comprised recognition of the symptoms of nutritional deficiencies and treatment at appropriate medical facilities.

4. Enhanced Support Systems:

The educational content also discussed the importance of food and patient's support system in adhering pregnancy menus. The students noted encouragement to involve their families in planning nutrition, which creates a supportive environment for healthier food choices. The programme also underlined the fact that healthcare practitioners are required to provide continuous counselling and support throughout the pregnancy.

5. Reduction in Nutritional Deficiencies:

There was reduction of most common nutritional deficiencies after the interventions (post-intervention assessments). Girls were eating iron, calcium and folic acid in the full quantity CODIS: there was a higher level of haemoglobin (110%) which depicted above all health avoided. Thus, the enhanced age-graded education programme resolved several of these nutritional constraints observed before intervention

IMPLICATIONS FOR NURSING AND HEALTHCARE SERVICES:

1. Integration of Nutritional Education:

The results underline the call for integrating dietary advice into routine prenatal care. Pregnant women should be screened for dietary habits and provided tailored dietary counselling by healthcare providers on a regular basis. Nutritional education needs to be an ongoing process from the first prenatal visit throughout pregnancy.

2. Community-Based Programs:

These therapeutics may be largely more effective if combined with community-based nutritional education programmes. Other interventions that may be effective include programmes aimed at pregnant women across all socio-economic contexts and local food production for obese people. Community health workers have an important role in delivering the education programs and monitoring their impact.

3. Collaboration with Dietitians and Nutritionists:

Dietitians, nutritionists and the healthcare practitioners need to integrate with each other to provide a complete nutritional regimen for pregnant women. These programs must be customized to the specific needs of every patient, taking into account his particular eating habits and restrictions with respect to diet. Dietitians are able to messure progress, and the face-to-face accountability with regular client check-ins can make a huge difference.

4. Use of Technology:

The use of technology can enhance the effectiveness of nutrition education. To spread out the message of a prenatal diet we can use mobile applications, online seminars and social media platforms. These tools can educate and provide resources, support from healthcare experts in an engaging manner for pregnant women.

5. Policy Implications:

Policy implication of the study conclusions Recommendations include a call for the establishment of norms and standards related to nutrition education during pregnancy by policy makers. Resources should be provided to implement these programs, particularly in disadvantaged areas.

RECOMMENDATIONS FOR FUTURE RESEARCH

1. Larger Sample Size:

In order ensure that the results generalize, future studies should use a larger sample size. More participants would provide a more comprehensive understanding of the challenges and successes with educational initiatives.

2. Diverse Settings:

Urban Clinics, Rural Health Centres or Private Hospitals etc. Greater diversity would allow researchers to evaluate the performance of organized training programs across more settings and demographic characteristics.

3. Longitudinal Studies:

Employ longitudinal research design to track long-term effects of prenatal nutrition education on maternal and infant health. This approach would indicate some more lasting effects and potential sites for further educational investment.

4. Comparative Studies:

Performity comparative study among all different education initiatives like online courses, mobile applications and in-person counselling. These comparisons could help identify the best ways to provide prenatal nutritional education.

5. Focus on High-Risk Pregnancies:

Much-needed insights and therapies for women who may have multiple pregnancies, pre-existing conditions or other risk factors that complicate nutritional demands can come courtesy of research dedicated to high-risk pregnancies.

6. Psychological Impact:

Look at the psychological outcomes of food education in pregnant women - specifically how improved dietary habits and knowledge may reduce stress, anxiety, and affect mental health).

7. Family and Cultural Influences:

Study the influence of family and culture on nutrition during pregnancy, including how educational programmes can address these dimensions while fostering a healthier diet.

8. Socio-Economic Interventions:

Investigate the impact of socioeconomic interventions on modifying food choices practiced by pregnant women in lower income settings, i.e. coupons for free-food distribution or nutrition assistance programs etc..

9. Technology Integration:

Assess the impact of technology-based prenatal nutrition education and support (i.e. mobile health applications, internet) on efficiency.

LIMITATIONS

1. Sample Size:

The results of this study may not be too applicable to large pregnant population in view very small sample size.

2. Single Location:

Since the research was performed in a typical single facility like GIMS Hospital it may not be indicative of the challenges and hurdles expectant mothers face at other locations or healthcare facilities.

3. Short-Term Evaluation:

The short-term results were ascertained after the structured teaching program. We have a knowledge gap regarding the lack of assessment measures for long-term impacts on maternal and newborn health.

4. Self-Reported Data:

The reliability of the scores could be plausible due to social desirability bias and recall bias, which might have influenced how participants self-reported information used for data acquisition.

5. Cultural Homogeneity:

The sample was relatively homogenous for culture, and did not adequately address the various prenatal food customs and beliefs of different ethnic groups or aggregates.

6. Limited Focus on Psychological Factors:

While psychological and emotional barriers to nutrition practices were identified, there was little elaboration of these and their influences on dietary habits or overall health status.

7. Control Group Absence:

As the study does NOT provide a comparison with people who did not receive the structured education programme, this complicates attributing any gains purely to intervention.

8. Resource Constraints:

But as any good study, they'd want to consider restrictions in resources (like limited access to specific foods or supplements) that might influence how able the participants were at changing their diet for health.

CONCLUSION

It was concluded that a great portion from pregnant women who visited GIMS Hospital were not well-educated about healthy prenatal dietary habits. But the organised training programme was an enabling a tool that helped raise awareness, to change food habits throughout pregnancy – something vital for both maternal and foetal health.

SUMMARY

Key outcome, recommendations, a summary of the study, and a conclusion were all included in this section.

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APPENDIX

Here is a questionnaire that aligns with the sociodemographic and clinical aspects of your study. This questionnaire is divided into relevant sections to assess various factors such as sociodemographic characteristics, awareness, and challenges faced by pregnant women.

Section 1: Sociodemographic Information

(Based on Tool 1: Sociodemographic Data Tool)

1. **What is your age?**
   - 18-25 years
   - 26-30 years
   - 31-35 years
   - 36-40 years
   - 41 years and above
2. **What is your highest level of education?**
   - No formal education
   - Primary education
   - Secondary education
   - Higher education
3. **What is your current employment status?**
   - Employed
   - Housewife
4. **What is your marital status?**
   - Single
   - Married
   - Divorced
   - Widowed

5. **Where do you reside?**
   - Urban area
   - Rural area
6. **How do you usually travel to the hospital?**
   - Walking
   - Public transport
   - Private vehicle
   - Other (please specify)
7. **What is your household income level?**
   - Low income
   - Middle income
   - High income
8. **What type of family do you belong to?**
   - Nuclear family
   - Joint family
9. **What is your religious affiliation?**
   - Christianity
   - Islam
   - Hinduism
   - Other (please specify)

Section 2: Awareness and Knowledge of Antenatal Nutrition

(Based on Tool 2: Investigational Pilot Questionnaire)

10. How important do you think a balanced diet is during pregnancy?

- Very important
- Important
- Moderately important
- Not important

11. Which of the following foods are most important during pregnancy? (Choose all that apply)

- Fruits and vegetables
- Whole grains
- Dairy products
- Sugary foods and drinks
- Protein-rich foods (e.g., meat, beans, eggs)

12. How much water should a pregnant woman ideally drink per day?

- Less than 5 glasses
- 5-8 glasses
- More than 8 glasses

13. What are the risks of inadequate nutrition during pregnancy? (Choose all that apply)

- Low birth weight
- Developmental issues in the baby
- Increased risk of complications during delivery
- No significant risks

14. Do you take any dietary supplements during pregnancy?

- Yes
- No

15. How often do you consume iron-rich foods?

- Daily
- Several times a week
- Once a week
- Rarely

16. Do you think it is necessary to follow a special diet during pregnancy?

- Yes
- No

17. What is the recommended daily intake of folic acid during pregnancy?

- 100-200 mcg
- 400-600 mcg
- 800-1000 mcg

Section 3: Challenges and Readiness During Pregnancy

(Based on Tool 3: Checklist for Assessing Challenges and Readiness)

18. Do you feel mentally prepared for labor and delivery?

- Yes
- No

19. Are you aware of the different stages of labor?

- Yes
- No

20. Do you have a plan for managing pain during labor?

- Yes
- No

21. Do you have a support system in place for after the baby is born?

- Yes, I have strong support
- Yes, I have moderate support
- No, I do not have any support

22. Have you attended any prenatal classes or received any prenatal education?

- Yes
- No

23. Do you face any challenges in accessing prenatal care?

- Yes
- No

24. Do you feel confident about breastfeeding your baby?

- Yes
- No

25. Have you made arrangements for postpartum care at home?

- Yes
- No

26. Are you aware of the signs of postpartum depression?

- Yes
- No

Section 4: Clinical Information

(Additional Questions Based on Provided Data)

27. What is your current Body Mass Index (BMI)?

- Underweight
- Normal weight
- Overweight
- Obese

28. Have you experienced any pregnancy complications in the past?

- Yes
- No

29. How often do you access prenatal care services?

- Regularly
- Irregularly

30. What is your nutritional status?

- Well-nourished
- Malnourished

ANNEXURE I

Permission letter from Principal Galgotias University School of Nursing to conduct the study.

Letter seeking permission from the Principal

From

B.sc nursing 4th year students

Galgotias University Greater Noida

TO,

The Principal, School of Nursing

Galgotias University

Subject: Requesting Permission for Conducting a Research Study.

Respected Mam,

We intend to begin a research study in a partial fulfillment of B.sc Nursing program titled as **"A STUDY TO ASSESS THE ROLE OF DIETARY MODIFICATIONS IN PREGNANT WOMEN FOR A HEALTHY CHILD IN GIMS (Government Institute of medical sciences) hospital of Uttar Pradesh".**

Under the supervisions of Ms. Sonia Rani (Research Guide) .

I request your kind permission to carry out the above said study in selected setting.

Thanking You.

Yours Sincerely,

B.sc Nursing

ASMITA SINGH

BRAJESH KUMAR

ANNEXURE II

Letter seeking expert's opinion for validation of the tool.

From,

B.sc Nursing

4th year students

Galgotias University,

Greater Noida, Uttar Pradesh

To,

Respected Sir/Madam,

Subject: Letter seeking expert's opinion for establishing validity of the research tool.

We would like to request you to kindly go through the tool enclosed for the purpose of research as a part of our B.sc program under school of nursing, Galgotias University and give us your expert opinion and suggestion with regard to the same in terms of relevance, appropriateness, accuracy and organization of the consent in relation to the problem and objectives formulated.

Your valuable suggestions will be of great help in betterment of quality of the study. Expecting a positive response, in anticipation

Thanking you.

Yours sincerely,

B.sc Nursing

Enclosure:

1. Research Statement, objectives and operational definitions.

2. Criterion checklist for validation

3. Blueprint of tool

ANNEXURE III

Letter seeking consent for the participant

Dear participants

We are doing a research study on,

We are B.sc Nursing 4th year's student of Galgotias University, Greater Noida Uttar Pradesh.

" A STUDY TO ASSESS THE ROLE OF DIETARY MODIFICATIONS IN PREGNANT WOMEN FOR A HEALTHY CHILD in GIMS (Government institute of medical sciences) hospital of Uttar Pradesh.

As a part of curriculum requirement.

We request you to kindly give your consent, so that we can include you in my study as a participant. All information given by you will be kept confidential and will be utilized only for research purpose. You are free in withdrawing anytime from the study group if you wish to do so.

You and your co-operation and participation will be highly appreciated.

Yours sincerely,

B.Sc Nursing,

Asmita Singh

Brajesh Kumar

ANNEXURE IV

Informed Consent

A STUDY TO ASSESS THE ROLE OF DIETARY MODIFICATIONS IN PREGNANT WOMEN FOR A HEALTHY CHILD in GIMS (Government institute of medical sciences) hospital of Uttar Pradesh

Investigator- students

I, Mr. /Mrs. ……., Father/ mother of Master / Ms……..aged ……..years, give my consent for including in the research to be conducted by student investigators.

Myself, ……..., and I am a voluntarily willing to participate in this study.

I have been informed by the investigator that the information provided will be kept confidential and used only for above mentioned study.

Having understood the above points, I give my consent for me to be included in the study as a subject of investigation.