

**The Role of Nutrition Education in Reducing Pregnancy Complications: Executive
Summary**

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The Role of Nutrition Education in Reducing Pregnancy Complications

Main Points

- One hundred percent of participants found the nutrition education useful and informative.
- One hundred percent of participants maintained normal blood pressure during the implementation period.
- Seventeen percent of participants developed gestational diabetes mellitus (GDM), with all but one case managed through dietary changes.
- Eighty-seven percent of participants demonstrated healthy trends in weight gain based on Body Mass Index (BMI) in comparison to national recommendations.
- The project highlights the potential of structured nutrition education in reducing pregnancy complications.
- Results support the importance of integrating targeted nutritional interventions into prenatal care.
- Further research is needed to explore long-term maternal and neonatal health outcomes.

Background and Purpose

Rates of GDM, gestational hypertension (GHTN), pre-eclampsia, excessive gestational weight gain, and large for gestational-age babies continue to rise in the United States (Taylor et al., 2020). These pregnancy complications burden both the mother and child as well as healthcare systems and resources. Evidence-based literature supports the notion that while these conditions are multifactorial, lifestyle factors including diet and exercise, can heavily impact the development of these complications (Miele et al., 2023). Furthermore, women overwhelmingly report that they do not receive enough education on nutrient needs to support a healthy pregnancy (Miele et al., 2023). The project site does not provide patients with thorough

education on nutritional needs during pregnancy they only offer a list of foods to avoid. The purpose of this Doctor of Nursing Practice (DNP) project is to create and implement a resource for women on nutritional needs during pregnancy to increase their knowledge on this subject and reduce pregnancy complications. The intended audience of this project is pregnant women and providers who practice obstetrics. The results will be used to encourage the integration of nutritional education into prenatal care.

Methodology

The Plan-Do-Study-Act (PDSA) Framework was utilized with three total cycles, one occurring every three weeks, for the duration of the 12-week implementation period. A pamphlet and virtual guide were given to voluntary participants in their second and third trimesters at the project site. This period in pregnancy was chosen because often the first trimester invokes persistent nausea. It was assumed that women would not appreciate or absorb the information at that time. The pamphlet consists of information on specific micro and macronutrients, vitamins, and minerals necessary for a healthy pregnancy, including specifically how they impact a growing fetus. It also includes supplementation recommendations and foods to avoid. The virtual guide was delivered to participants via email and goes into more detail about these nutrients, healthy maternal weight gain, discusses the American College of Obstetrics and Gynecology's exercise recommendations for pregnancy, lists stress management practices and includes three full days of a meal plan. The meal plan was adjusted throughout the PDSA cycles based on feedback for more cultural variety in food options. The project site serves a high volume of Indian and Middle Eastern patients, so meal suggestions were adjusted and tailored to these cultural practices, including more vegan and vegetarian options.

Once women received the education, objective data was collected including weight gain and blood pressure trends at every subsequent prenatal visit throughout the implementation period. Pre-pregnancy blood pressure and weight were used as baseline data for each patient. These trends were then compared to national recommendations to determine significance. A follow-up survey via telephone was completed two to three weeks after the education was provided. A Likert scale was used, and the survey inquired about the ease of applying information, how clear and concise the education was presented, how varied the food recommendations were, and how easy it was to incorporate this information into daily life.

Results

The findings of this study included that 100% of participants reported they found the education informative and useful in some capacity. Furthermore, 100% of participants maintained a blood pressure that was within the normal range during the implementation period and no cases of pre-eclampsia were identified. About 17% of participants developed GDM during the implementation period, and all but one were diet-controlled. Notably, this is higher than the national average of up to 9% of pregnancies resulting in a GDM diagnosis. Lastly, 87% of participants demonstrated healthy trends in weight gain based on BMI when compared to national recommendations. Healthy weight gain trends are a positive finding considering 47.5% of pregnancies in the United States result in weight gain above the recommended amount (Miele et al., 2023). In fact, many participants reported not knowing how much weight they should gain in pregnancy before they reviewed the provided virtual guide.

Strengths

One of the key strengths of this DNP project lies in its focus on preventative care through nutritional education, an often underemphasized yet impactful intervention in prenatal health.

The project successfully demonstrated that targeted, accessible education can empower pregnant women to make informed dietary choices, contributing to improved maternal outcomes. There was a high participant engagement and satisfaction with the educational content, which demonstrates its applicability in prenatal care settings and the need to continue this intervention. Furthermore, this project showed effective implementation of dietary interventions, resulting in mostly favorable health outcomes. Healthy trends in gestational weight gain and blood pressure management support nutritional education, positively impacting pregnancy complications.

Limitations

Limitations and barriers were identified throughout the implementation of this DNP project. First, it is unknown to what extent participants implemented nutritional and lifestyle changes, as they were not followed in their daily lives. Furthermore, response bias could have contributed to overreporting the use of this information in the follow-up phone surveys. Secondly, the 12-week implementation window did not allow for data collection throughout the entire pregnancy. Only about one-third of the participants were able to be followed through delivery. So, complications could have been missed due to time constraints. Lastly, there could be an increased financial burden with the cost of fresh foods, which could be addressed by providing participants with a list of local grocers and farmers for more affordable produce.

Implications

The intervention used in this project addressed gaps in patient knowledge of nutritional needs and demonstrated the need for this education in all prenatal practices. This project aligned with the HealthyPeople 2030 initiatives by improving patient outcomes and enhancing overall satisfaction with prenatal care. Improving nutritional education during pregnancy also aligned with the Institute for Health Improvement's Triple Aim framework by addressing three core

healthcare priorities. First, the project contributed to improving the health of populations by equipping pregnant women with the knowledge to make healthier dietary choices, which in turn can lead to better maternal and fetal outcomes. Second, by promoting proper nutrition and reducing the incidence of complications such as uncontrolled GDM or excessive weight gain, this approach has the potential to lower per capita healthcare costs by decreasing the need for medical interventions related to pregnancy complications. Finally, the intervention enhanced the individual care experience by ensuring that participants felt informed and supported throughout their pregnancy, reinforcing the importance of patient-centered education.

Conclusion

This DNP project demonstrates that providing targeted nutritional education to pregnant women can positively impact pregnancy health metrics, including blood pressure control, weight management, and GDM outcomes. Further research with a larger sample size and extended follow-up is recommended to explore the long-term benefits and sustainability of nutritional interventions during pregnancy.

References

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