Effect of Nutritional Counseling on Nutritional Practices and Dietary Health Habits of Pregnant Women

Sahar A. Abd-El mohsen1,*, Azhar A. Mohamed2

1Department of Nursing sciences, Faculty of Applied medical sciences, Prince Sattam Bin Abdulaziz University, KSA
2Community Health Nursing, Faculty of Nursing/ Zagazig University, Egypt
*Corresponding author: sara.saleh17@yahoo.com

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Abstract Background: Diet is an important and modifiable lifestyle behavior that can affect risk factor development for optimal health and well-being [1,2].

Aim: The aim of this study was to examine the effect of nutritional counseling on nutritional practices and dietary health habits of pregnant women.

Research design: Quasi-experimental study design (pre/posttest).

Setting: The study was conducted at Al-Ibrahemia health units in Sharkia, Governorate, Egypt.

Sample: 75 pregnant women from their fourth month of pregnancy till their seventh month were included in this study.

Tool: Structured interviewing questionnaire which included two parts; Part one: personal variables of the studied sample, Part two: Assessment of nutritional practices and dietary health habits.

Results: a highly statistically significant difference in nutritional practices and dietary health habits was found in the studied sample post application of the nutritional counseling.

Keywords: dietary health habits, nutritional counseling, nutritional practices, pregnant women


1. Introduction

Diet is an important and modifiable lifestyle behavior that can affect risk factor development for optimal health and well-being [1,2].

Pregnancy is a dynamic, anabolic state, characterized by a series of adjustments whose purpose is to allow growth and development of the fetus. These adjustments relate to changes in the maternal behavior affecting the metabolism of all nutrients. They depend primarily on the nutritional status of the mother before conception and explain its ability to adapt to various nutritional situations [3].

The main purpose of nutrition relies on the adequate consumption of required nutrients according to an individual’s age, sex, and physiologic environment [4].

Unbalanced and insufficient nutritional problems occur especially in developing countries at every stage of life and can cause serious health problems if precautions are not taken [5].

During pregnancy, nutritional needs increase and nutrition should be considered. Women need to and have a regular healthy diet before getting pregnant for the following reasons; to facilitate pregnancy, to carry their child until full term, to have her child at normal weight and time, and to breastfeed [6,7].

Insufficient and unbalanced nutrition during pregnancy for babies may result in premature birth, stillbirth, death in the first months after birth, miscarriage, physical abnormalities, and mental retardation; for mothers, death, anemia, osteomalacia, tooth decay, thinness or fatness, iodine deficiency, gestational diabetes (GD), eclampsia, and pre-eclampsia [8].

Some of the Healthy People 2020 objectives for maternal, infant, and child health are directly related to the promotion of early pregnancy nutrition education. Some examples of the initiatives include increasing the proportion of pregnant women who receive early and adequate prenatal care, reducing low birth weight, reducing preterm births, and reducing the occurrence of neural tube defects [9].

2. Aim of the Study

This study aimed to examine the effect of implementing a nutritional counseling on nutritional practices and dietary health habits of pregnant women.

3. Research Hypothesis

Nutritional practices and dietary health habits of pregnant women will be better post application of the nutritional counseling.
4. Participants and Methods

4.1. Research Design

Quasi-experimental study design (pre/posttest) was implemented to conduct this study.

4.2. Setting

The study was conducted at Al-Ibrahemia health units in Sharkia, Governorate, Egypt.

4.3. Sample

A convenient sample was utilized in this study. 75 pregnant women voluntarily participated in the study. Inclusion criteria included the following: pregnant women in their fourth month of pregnancy, their age above 18 years, not having any chronic illnesses as diabetes mellitus, hypertension or cardiac disease, free from non-communicable diseases, not receiving any nutritional supplements other than iron, folic acid, vitamin C and calcium supplements given at the health unit.

5. Tool: Structured Interviewing Questionnaire

Developed by the researchers after extensive literature review and it included two parts:

Part one: Personal data (age, educational level, and working condition).

Part two: Assessment of nutritional practices and dietary health habits:

This part was composed of closed ended questions for assessing the nutritional practices and dietary health habits of pregnant women.

Scoring system: answers were coded as 1 for yes and 0 for no, participants were classified as having healthy practices if they scored > 50% and unhealthy practices if ≤ 50%.

6. The Nutritional Counseling Guide for Pregnant Women

The nursing guidelines was prepared and implemented by the researchers after assessing the needs of the sample, the content evolved around best nutritional practices during pregnancy with reference to the March of Dimes Pregnancy & Newborn Health Education Center, these contents were revised by a dietitian expert before it is printed. Teaching materials were selected to suit the educational level and level of understanding for all participants.

6.1. Implementation of the Nutritional Counseling Guide

The content of the nutritional counseling guide was delivered to the study sample through direct individual interviewing. In the first session they were assessed for their nutritional practices (number of meals, meals timing, if there was any food dislikes and the cause for this and the consumption of calcium containing products), also assessment for dietary health habits was done including (habit of washing fruits and vegetables and putting them in water with lemon, cooking habits and eating and drinking habits). The study sample were met for two times before application of the nutritional counseling guide “in the beginning of the second trimester” for assessment of their nutritional practices and dietary habits, after assessment they were given the content of the nutritional counseling guide and a copy of the printed nutritional counseling guide and the second time for evaluating their nutritional practices and dietary habits “at the end of the seventh month {three months post application of the nutritional counseling}.

6.2. Teaching Methods Used

Lecture.

6.3. Media

Posters
Handout.

7. Methods

7.1. Administrative Approval

Official administration permission was obtained from the director of the previously mentioned health units after explaining the aim and nature of the study.

7.2. Tools Development

The used tool was developed after reviewing of related literature.

7.3. Validity and Reliability

The tools were tested for validity by five experts (2 from the internal medicine and 3 nursing staff) for content validity. The reliability of the used tool was also tested through measuring its alpha Cronbach coefficient. This was 0.972, indicating high level of reliability.

8. Ethical Considerations

This study was approved by faculty of nursing ethics committee, an informed consent was obtained from subjects to participate in the study after explaining the nature and purpose of the study to them. They were assured that the collected data will be absolutely confidential and that their participation is voluntary and they can withdraw at any time of the study.

9. Pilot Study

A pilot study was conducted on 7 pregnant women during September 2018 in order to test the clarity,
practicability and applicability of the developed tool. Those subjects who were involved in the pilot study were included in the main study as there were no modifications required.

10. Data Collection

- The data collected over a period of 6 months starting from September 2018 till the end of March 2019.

11. Analysis of the Results

Data was analyzed using the computer program SPSS version 19" Chicago, USA. Data were presented as number, percentage, mean, standard deviation. Chi-square test was used to compare between qualitative variables.

11.1. Results

Figure 1 demonstrates the working conditions of the studied sample; it was noticed that half of the studied sample (50%) was in the age group from 30 to less than 40 years of age and 40 % of them were from 20 to less than 30 years of age.

Figure 2 reveals the educational level of the participants; the highest percentage of the studied sample (60%) was secondarily educated, and 23% of them were having basic education.

Figure 3 illustrates the working condition of the studied sample; the majority of them (73%) were housewives while 27% of them were working.

Table 1 demonstrates that there was no statistically significant difference between pre/posttest of the studied sample regarding their nutritional practices “number of meals / day, meals timing, or food dislikes). While there was a statistically significant difference between both follow up periods regarding consuming eggs, milk and dairy products post application of the nutritional counseling guide P= 0.026.

Table 2 illustrates a highly statistically significant difference between both periods of follow up regarding putting the fruits and vegetables in water with lemon after washing them (P=0.001), use of water vapor for cooking green vegetables (P=0.002), eating sugar cane molasses (P=0.002), and eating fresh vegetables salad daily (P=0.001).

![Age of the studied sample](image)

Figure 1. Distribution of the studied sample regarding their age (n = 75).

![Educational level of the studied sample](image)

Figure 2. Distribution of the studied sample regarding their education (n = 75).
12. Discussion

The most important factor that needs a great attention to live a healthy life is nutrition. Adequate and balanced diet is especially needed by pregnant women for themselves and for their babies, because the effects of nutrition in humans begin in the womb, in this period the need for calories, protein, vitamins, minerals, liquids, and basic and trace elements are increased, such that their babies may be born healthy.

This study included 75 pregnant women; the highest percentage of the studied sample was between the ages 30 – 45 years. As regard the educational level, the highest percentage of them were secondarily educated and regarding their working condition they were housewives.

Haoyue et al., [10] in their study on the dietary intake and food habits of the Chinese women reported that pregnant women who were recruited in their study aged 19–42 years, regarding educational level they disagree with the present study result as they reported that (95.5%) of the sample had completed at least primary education, while regarding working condition about one fifth were homemakers (19.1%), and a similar number were employed in skilled or professional labor (19.7%).

Jamila M. [11] in her thesis about Nutrition and Diet Quality during Pregnancy reported that the mean age of her study participants was 28.65 but regarding educational level of the participants it was mentioned that 24% of them (the highest percentage) were having some college education.

A.M.N.T. Adikari et al., [12] in their study entitled Assessment of Nutritional Status of Pregnant Women in a Rural Area in Sri Lanka found that Age (in years) of the study sample was 20 – 29 (74.44%), regarding educational level the majority of them (83.46%) were not employed which comes in accordance with our study results and regarding educational level (52.63 %) of them were in the advance level and above.

The present study showed that there was no statistically significant difference between pre/posttest of the studied sample regarding their nutritional practices “number of meals / day, meals timing, or food dislikes). While there was a statistically significant difference between both groups regarding Consuming eggs, milk and dairy products post application of the nutritional counseling guide.
A highly statistically significant difference was found between pre/posttest of the studied sample post application of the nutritional counseling guide regarding practicing of health dietary habits as putting the fruits and vegetables in water with lemon after washing them, use of water vapor for cooking green vegetables, eating sugar cane molasses, and eating fresh vegetables salad daily.

These current study results on the improvement of nutritional practices and dietary health habits in the studied sample was related to the educational nutritional counselling guidelines provided to them by the researchers was in line with Blondin and LoJiudice [13] who supported the use of an educational handout intervention in improving women's knowledge and awareness of nutrition during pregnancy.

According to the World Health Organization [14], nutritional advice was found to hold strong evidence as a mainstay intervention to improve protein intake in pregnancy.

A recent meta-analysis by Girard & Olude, [15] declared that nutritional counseling during pregnancy is one of the most effective interventions for improving pregnant women's knowledge and understanding regarding nutritional status and prevents maternal and infant complications.

One of the key recommendations for institute of medicine (IOM) guideline revision was to offer nutritional counseling, specifically on dietary intake and physical activity, to pregnant women [16]. Also as a support for this goal the March of Dimes [17] has published multiple nutrition handouts and online resources to address this goal.

13. Conclusion

The current research findings proved that the implementation of an educational intervention has a high yield in improving maternal nutrition knowledge. The cost for the handout used and the minimal time spent with each woman to review the information, is a step toward decreasing the financial burden and poor health outcomes associated with inadequate nutrition. Continuing to improve maternal knowledge of nutrition will lead to healthier food behavior choices, which can increase maternal and fetal health.

14. Recommendations

Public health initiatives are needed to increase the proportion of pregnant women who receive early and adequate prenatal care.

Availability of the nutritional counselling handout in all health units to be disseminated for all pregnant women during their antenatal care visits is essential.

References