IJBMC
International Journal of Body, Mind and Culture

Volume 12, Issue 6, pp 104-110
DOI: 10.61838/ijbmc.v12i6.962

Article type:
Original Research

Perceived Benefits and Barriers Influencing Pregnant Women's Behavioral Intention in Adherence to Healthy Diet: A Cross Sectional Study

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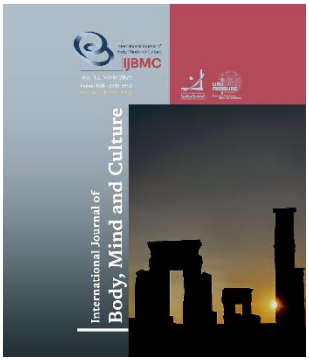

Article history:

Received 24 Feb 2025
Revised 18 May 2025
Accepted 28 June 2025
Published online 01 Sep 2025

How to cite this article:
Khalil, M. L., & Mohammed, W. J. (2025). Perceived Benefits and Barriers Influencing Pregnant Women's Behavioral Intention in Adherence to Healthy Diet: A Cross Sectional Study. International Journal of Body, Mind and Culture, 12(6), 104-110.

ABSTRACT

Objective: This study aims to examine the influence of perceive benefits and barriers on pregnant women behavioral intention in adherence to healthy diet and to find out the significant differences in behavioral intention in adherence to healthy diet between groups of age, level of education, family monthly income and socioeconomic class.

Methods and Materials: A descriptive cross sectional study design has been carried out. Non-probability (purposive) sample of (390) pregnant women from 8 primary health care centers in Baqubah City were selected to participate in the study. Data were collected through a self-report instrument that includes pregnant women sociodemographic data, perceived benefit scale, perceived barriers scale and behavioral intention in adhere to healthy diet scale. The data were analyzed using the Statistical Package for Social Sciences (SPSS) version 26.

Findings: The study results reveals that perceived benefits statistically positively predict pregnant women's behavioral intention to adhere to pregnancy-healthy diet (p = 0.000). Perceived barriers statistically significantly inversely predict pregnant women's behavioral intention to adhere to pregnancy-healthy diet (p = 0.000). There are statistically significant differences in behavioral intention in adherence to healthy diet among age, level of education, and family socioeconomic class groups at (p-value=.002,.000,.025) respectively. On the other hand, there were no statistical significant difference in behavioral intention in adherence to healthy diet among family monthly income groups at (p-value=.095).

Conclusion: It can be concluded that perceived benefits and barriers influence pregnant women behavioral intention in adherence to healthy diet. The socio-demographic characteristics play a crucial role in shaping dietary behaviors of pregnant women.

Keywords: Perceived Benefits, Perceived Barriers, Pregnant Women, Behavioral Intention, Healthy Diet Introduction

Introduction

Throughout the period of pregnancy, women's eating behaviors tend to be less nutritionally adequate or appropriate compared to any other stage in life (Gibore et al., 2021) While a significant number of women from less developed countries tend to restrict their food intake during pregnancy for a myriad reasons including having smaller baby, birth complications, cultural factors or the birth of large babies that make the delivery more complex (Belay et al., 2022). It is, therefore, crucial to engagement the media in raising awareness amongst women in the community about these issues is very important so that the dietary guidelines are followed (Mahalhal & Ghafel, 2021). Pregnant women who award of the importance of nutrition are usually compliant to the dietary recommendations (Younes & Mohammed, 2024). The benefits consist of better health of the mothers, lower incidence of pregnancy complication, and better growth of the fetus (Haider & Bhutta, 2017).

Women who understand these benefits often tend to modify their behaviors (Abdalhabfiz & Taha, 2023). There exist numerous barriers that imped pregnant women from keeping their nutrition. These barriers can be classified as personal, social, and physical (Abed & Abd Ali, 2021). Moreover, educational inequality and poverty are also of great importance because women from poor households have less access to nutritious foods due to various economic constraints (Laraia et al., 2010). Environmental barriers contribute to pregnant women's challenges (Dubowitz et al., 2015). Moreover, psychosocial problems in pregnancy may alter mother's health promoting lifestyle and health behaviors (Obaid & Ibrahim, 2022). While present studies have identified numerous factors effecting dietary adherence through pregnancy, utmost studies have addressing high-income countries, with inadequate data from low and middle-income countries wherever the burden of malnutrition is highest (Black et al., 2013). In Iraq, nutrition research institute performed a series of studies which showed the prevalence of iron deficiency in pregnant women to be 38% and in non-pregnant women to be 25% and the causes as poor dietary practice (Al Abedi et al., 2020). For younger pregnancies, the nutrition habits of pregnant adolescents were inadequate (Sabty & Muttaleb, 2022). Another study on a group of pregnant women reported that the participants did not have sufficient information about healthy diet (Khleel, 2021; Salman, 2016) Moreover, there is inadequate research that concurrently examines how these perceived benefits are weighed alongside perceived barriers, such as socioeconomic constraints, traditional beliefs, and lack of awareness (Rifas-Shiman et al., 2009). In addition, there is scant literature that looks at these concepts, together with perceived barriers to exercise such as economic status, social cultural factors, and ignorance (Abbas & Naji, 2021). The study aims to examine the influence of perceive benefits and barriers on pregnant women behavioral intention in adherence to healthy diet and to find out the significant differences in behavioral intention in adherence to healthy diet between groups of age, level of education, family monthly income and socioeconomic class.

Methods and Materials

A cross-sectional descriptive study was used for this study for period 9 October, 2024 to 2 March, 2025. The study was applied on 8 primary healthcare centers (Al-Takiya Health Center, Al-Saray Health Center, First Tahrir Health Center, Bahraz first Health Center, Yarmouk Health Center, Al-Mustafa Health Center, New Baqubah Health Center, Al-Katoun Health Center which are selected using simple random sample from 18 primary healthcare centers of primary healthcare sectors of Baqubah City. Non-probability (purposive) sampling that included (390) pregnant women in Baqubah City. The inclusion criteria for the current study were pregnant women attending primary healthcare centers of Baqubah City who aged 18-40 years old, primigravida or multigravida, women who are in the first, second, and third trimesters, while the exclusion criteria were pregnant women who refuse to participate. Before data collection, the official permission was obtained from Board of the College of Nursing \ Planning Ministry – Statistical Center, Diyala Health Directorate\ Primary Health Care Sectors of Baqubah City\ selected Primary Healthcare Centers, the subject's agreement is also obtained from the pregnant women. The data was collected by the researcher from 11 December, 2024 to 13 January, 2025 on four hours'/ day basis, distributed over four days/ week. Data were collected through a self-report instrument that includes the socio-demographic data (age, level of education, family monthly income, socioeconomic class), Likert scale of perceived benefits, Likert scale of perceived barriers, and Likert scale of behavioral intention in adhere to healthy diet. The validity of the questionnaire was verified by presenting it to (12) experts. Descriptive and inferential statistics were used to analyze the results of the study using the Statistical Package of Social Sciences (SPSS) version 26.

Findings and Results

The study results reveal that the mean age is 27.38 ± 7.51; more than quarter age 20-25-years (n = 103; 26.4%), followed by those who age 26-31-years (n = 100; 25.6%), those who age 32-37-years (n = 82; 21.0%), those who age 14-19-years (n = 68; 17.4%), and those who age 38-45-years (n = 37; 9.5%). Regarding level of education, less than third hold bachelor's degree (n = 114; 29.2%), followed by those who hold diploma (n =

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E-ISSN: 2345-5802

79; 20.3%), those who are middle school graduates (n = 73; 18.7%), those who are high school graduates (n = 56; 14.4%), those who are elementary school graduates (n = 38; 9.7%), those who hold master's degree (n = 11; 2.8%), those who hold postgraduate diploma (n = 9; 2.3%), those who read and write (n = 6; 1.5%), and those who hold doctoral degree (n = 4; 1.0%). Concerning family's monthly income (Iraqi Dinar), more than third have a monthly income that ranges between 601.000-900.000 (n=148; 37.9%), followed by those whose income range between 901.000-1.200.000(n=99; 25.4%), those whose income ranges between 300.000-600.000 (n = 88; 22.6%), those whose income is 1.501.000 or more (n = 23; 5.9%), those whose income ranges between 1.201.000-1.500.000 (n = 21; 5.4%), and those whose income is less than 300.000 (n = 11; 2.8%). Regarding family's socioeconomic class, more than two-fifth are classified as of middle class (n = 167; 42.8%), followed by those who are classified upper middle class (n = 124; 31.8%), and those who are of lower middle class (n = 99; 25.4%).

Table 1

Participants' sociodemographic characteristics (N = 390)

Variable	Frequency	Percent
Age (Years): Mean (SD): 27.38 ± 7.51		
14-19	68	17.4 26.4 25.6
20-25	103	21.0
26-31	100	9.5
32-37	82	
38-45	37	
Wife's level of education		
Read and write	6	1.5
Elementary school	38	9.7
Middle school	73	18.7 14.4 20.3
High school	56	29.2
Diploma	79	2.3 2.8
Bachelor's degree	114	1.0
Postgraduate diploma	9	
Master's degree	11	
Doctoral degree	4	
Family'		
< 300.000	11	2.8
300.000-600.000	88	22.6 37.9 25.4
601.000-900.000	148	5.4
901.000-1.200.000	99	5.9
1.201.000-1.500.000	21	
≥ 1.501.000	23	
s monthly income (Iraqi Dinar)		
Socioeconomic Class		
Lower Middle Class	99	25.4 42.8
Middle Class	167	31.8
Upper Middle Class	124	

SD: Standard Deviation

The stepwise regression model demonstrates that perceived benefits statistically positively predict pregnant women's behavioral intention to adhere to pregnancy-healthy diet (p = 0.000). On the other hand, perceived barriers statistically significantly inversely predict pregnant women's behavioral intention to adhere to pregnancy-healthy diet (p = 0.000).

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Table 2

Stepwise regression model for study variables (N=390)

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig. B	Unstandardized Coefficients Std. Error	Standardized Coefficients	
	B	Std. Error	Beta				Lower Bound	
Perceived Barriers	-.071		.012	-.241	-5.857	.000	-.095	-.047
Perceived Benefits	.043		.010	.229	4.303	.000	.023	.062

a. Dependent Variable: Behavioral Intention

B: Beta, t: T-statistics, Sig: Significance

There are statistically significant differences in behavioral intention in adherence to healthy diet among age, level of education, family monthly income, and family socioeconomic class groups at (p-value=.002, .000, .025) respectively. On the other hand, there are no statistical significant difference in behavioral intention in adherence to healthy diet among family monthly income groups at (p-value=.095).

Table 3

Differences in behavioral intention in adherence to healthy diet among age, level of education, family monthly income, and family socioeconomic class groups.

		Sum of Squares	df	Mean Square	F	Sig.
Wife age	Between Groups	82.517	4	20.629	4.245	.002
	Within Groups	1871.114	385	4.860		
	Total	1953.631	389			
Wife level of education	Between Groups	240.997	8	30.125	6.702	.000
	Within Groups	1712.634	381	4.495		
	Total	1953.631	389			
Family monthly income	Between Groups	46.948	5	9.390	1.891	.095
	Within Groups	1906.682	384	4.965		
	Total	1953.631	389			
Family socioeconomic class	Between Groups	36.808	2	18.404	3.716	.025
	Within Groups	1916.823	387	4.953		
	Total	1953.631	389			

df: Degree of freedom, F: F-statistics, Sig: Significance

Discussion and Conclusion

Concerning the age, the study results revealed that the highest percentage of the study subjects within the age group 20-25 years, this finding supported by that of (Khleel, 2021; Omar, 2019) reported that the highest percentage of the study subject with in age (20-24) years old. Regarding level of education, the highest percentage of the study participants hold bachelor's degree (29.2%), this fading supported by that of (Dawood, 2019), reported that, highest percentage of the study participant hold bachelor degree. Concerning family's monthly income (Iraqi Dinar), the highest percentage (37.9%) of the study participants their monthly income ranges between 601.000-900.000, this finding consistent with that of (Khshain & Abdulwahid, 2023), reported that the highest percentage of the study participant their monthly income between 601.000-900.000. Regarding family's socioeconomic class, the highest percentage of the study participant classified as of middle class (42.8%), this finding consistent with that of (Nastiti et al., 2024), reported that highest percentage of the study participant there socioeconomic are middle class (54.2%). The study results revealed that, perceived benefits statistically positively predict pregnant women's behavioral intention to adhere to pregnancy-healthy diet (p= 0.000), On the other hand, perceived barriers statistically significantly inversely predict pregnant women's behavioral intention to adhere to

pregnancy-healthy diet (p = 0.000). This finding consistent with that of (Beasant et al., 2024), reported that perceived benefits (p=0.021) positively influence to pregnancy dietary behaviors, while perceived barriers (p = 0.034) inversely affect it. The study results reveal that there are statistically significant differences in behavioral intention to adhere to pregnancy healthy diet among age groups (p-value =.002), this finding supported by that of (Shapiro, 2020) stated that higher maternal age was associated with healthier adherence to dietary guidelines. For example, older pregnant were more expected to restrict harmful diets like cured meats and soft cheeses. The study results reveal that there are statistically significant differences in behavioral intention in adherence to pregnancy healthy diet among level of education groups (p-value =.000). This finding supported by that of (Gila-Díaz et al., 2021) revealed pregnant with increased levels of education possessing more intention to have a healthy diet when pregnant. Pregnant women who possess college-level education will have greater compliance to food guidelines compared to those without, as revealed by the measure of compliance with the Healthy Food Pyramid (Parker et al., 2020). The study results reveal that there are statistically significant differences in behavioral intention in adhere to healthy diet among family socioeconomic class (p-value =.025), this finding consistent with that of (Beulen et al., 2020), stated that there are significant differences dietary adherence socioeconomic level of pregnant women. The finding also supported by that of (Fadhil et al., 2021), stated that, low-income pregnant women typically have poor dietary compliance with dietary recommendations, with negative impacts on baby and maternal health, good prenatal diet quality was observed among high-income pregnant compared to low-income. There is no statistical significant difference in behavioral intention in adherence to healthy diet among family monthly income groups at (p-value=.095), this finding supported by (Kloeblen & Batish, 1999), reported that no statistical significant differences in dietary adherence among family monthly income groups, emotional beliefs act a critical role in these nutritional intentions.

In conclusion:

1. Percived benefits positively influence of pregnant women adherence to pregnancy healthy diet conversely, perceived barriers negatively affect pregnant women adherence to pregnancy healthy diet.

2. The significant differences in behavioral intention based on demographic characteristics such as the age, education level, and socioeconomic class, showing that these characteristics may play an important role in determining dietary behaviors among pregnant women.

Recommendation:

1- Developing targeted educational program emphasizing the benefits of adhering to healthy diet during pregnancy, the program should be tailored to address the specific needs and concerns of different demographic groups.

2- Further studies should be conducted on large sample and diverse socioeconomic classes.

Acknowledgments

The authors express their gratitude and appreciation to all participants.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors equally contribute to this study.

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