Assessment of Health Beliefs Regarding Weight Control among Overweight and Obese Pregnant Women: Applying Health Belief Model

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ABSTRACT

Objective: The study aimed to assess overweight and obese pregnant women's beliefs related to weight control behaviors.

Material: A descriptive study design was conducted from July 2nd 2022 to November 7th 2022. A random sample of (532) pregnant women was chosen. The study was conducted at randomly selected Primary Health Care Centers on right & left side of Mosul city.

Results: The study finding showed the mean age of the participants was 27.2 ± 2.75 years, (84.02%) of them live in the city, (68.80%) are housewives, results also indicated that the mean score of participants' beliefs related to weight control behaviors was low (25.5) for all subscales of health beliefs.

Conclusions: The study showed that most of the overweight and obese pregnant women's beliefs related to weight control in general were low for all subscales of the Health Belief Model.

Key words: Assessment, Self-Efficacy, Weight control, Pregnancy.

INTRODUCTION

Pregnancy is among a female's most significant and stunning life experiences[1]. It is a unique physiological situation where all of the mother's systems significantly adjust how they operate to meet the demands of the growing embryo[2]. However, it might also be followed by of the typical gestational complications and issues that could endanger the life of mother or her fetus[3], like the mother's obesity and overweight. In up to fifteen percent of cases, complications can be serious and affect about fourteen percent of globally pregnancies[4,5]. Approximately a third of million women are thought to pass away yearly due to causes related to pregnancy globally, with ninety-nine percent of these fatalities taking place in underdeveloped nations and roughly 75 % of them being deemed preventable[6]. Both nationally and globally, rates of overweight and obesity are rising[7]. Obesity and overweight are both characterized as accumulation of abnormal or excessive fat that could be harmful to one's health. Adults are often classified as obese or overweight using the Body Mass Index (BMI), a straightforward measure of weight in relation to height[8]. The body mass index is the finest tool at our disposal for diagnosing obesity because the content of body fat is seldom quantified adequately in clinical performance or epidemiology[9]. Women and their offspring health are affected in the short term, medium term, and long term by excessive gestational weight gain (EGWG)[10]. More probably, obese or overweight pregnant women experience unfavorable birth outcomes, including gestational hypertension, preeclampsia[6], large for gestational births, shoulder-girdle dystocia, aspiration of meconium, newborn hypoglycemia, caesarean delivery, diabetes during pregnancy, postnatal weight gain, and death of foetal and infant[10]. When the body mass index of a woman surpasses 30 kg/m[11] it may also worsen the results of assisted reproductive technologies and pregnancy, as well as raise the chance of abortion[11]. Numerous factors related to lifestyle affect a woman's health and wellness throughout her gestation, delivery and postpartum period[12]. Obesity is typically brought on by a mix of high calorie diets, inactivity, and genetic predisposition, while certain cases can also be attributed to genetics, endocrine diseases, drugs, or mental health issues[13,14]. It's important to understand what influences eating behaviors and physical exercise, two crucial components for the maintenance of weight. There is a growing corpus of proofs suggesting a link between preventative practices and health related beliefs. The Health Belief Model (HBM), one of the frameworks for education on health, is used to determine the link between behavior and health beliefs[4]. One of the most well-known and established models of health behavior is the Health Belief Model (HBM)[15]. The Health Belief Model (HBM) is considered a psychological model for changing health behaviors that was created in 1950 in the United States (US) by public health professionals with the intention of changing people's lifestyles to include healthful practices[16]. Perceived susceptibility, perceived severity, perceived benefit, perceived barriers, cues to action, and self-efficacy are six components in the HBM that predict or explain for what reason individuals will take action to prevent, control, or test for a disease[17].

METHODS AND MATERIALS

A cross-sectional descriptive design was adopted for the period of July 2nd 2022 to November 7th 2022, at AL-Sukar Primary Health Care Center, AL-Qudes PHC, AL-Rashydia PHC, AL-Sharqi PHC, AL-Karama PHC, AL-Zahraa PHC, at the left side of Mosul city. AL-Garbee PHC, AL-Hadbaa PHC, Tamoz PHC, AL-Mansoor PHC, AL-Rafdain PHC, and AL-Tob Alryadi at the right side of Mosul city. The random sample consist of 532 pregnant women who visited the primary health care centers, whose Body Mass Index is equal to or more than (25) selected randomly. The sampling process includes cluster random sampling, first, all districts in Mosul city were categorized into two clusters, namely right, and left. Six health centers were randomly selected from each district. The study comprised a total of 12 health centers. within each health center simple random sampling was

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applied in selection of the samples. The adapted Health Belief Model questionnaire for weight management behavior has been used in order to achieve the aims of the study. The study's instrument included an adapted questionnaire. The overall questionnaire is comprised of two parts; part one demographic data, Part two, Health Belief Model (HBM) questionnaire for weight management behavior includes, perceived severity, perceived susceptibility, perceived benefits, perceived cue to action, self-efficacy, and behavioral intention of weight management. SPSS version (26) was used to analyze the data in order to interpret and explain the study's results.

RESULTS

Table 1: Distribution of the sample according to their socio-demographic characteristics

Variables	Frequency	Percentage
Age	F	%
16-20	99	18.6
21-25	169	31.8
26-30	145	27.3
31-35	74	13.9
36-40	37	7.0
41-45	8	1.5
M (SD)	27.2 ± 2.75	
Residence	F	%
Rural	85	15.98
Urban	447	84.02
Occupation	F	%
Employee	90	16.92
Housewife	366	68.80
Student	61	11.47
Daily wages	8	1.50
Employee (private sector)	7	1.32

F: Frequency, %: Percentage, M: Mean, SD: Standard Deviation

Table (1) reveal samples socio-demographic characteristics; the overall mean of age of samples was (27.2 ± 2.75), (84.02%) live in the city, (68.80%) were housewives, (42.5%) were overweight.

Table 2: Description of pregnant women beliefs related to weight control behaviors

HBM Concepts	Min.	Max.	M	SD	Score		
					Low %	Moderate %	High %
P-Severity	15	61	28.17	13.19	60.5	28.9	10.6
P-Susceptibility	8	34	14.57	7.48	62.8	26.7	10.5
P-Barriers	13	61	35.88	12.80	34.8	42.6	22.6
P-Benefit	17	64	28.72	13.44	58.8	29.1	12.1
P-Cue to action	13	57	23.69	12.23	68.8	22.9	8.3
P-Self-Efficacy in diet	22	89	48.87	20.10	37.4	40.2	22.4
P-Self-Efficacy in exercise	9	34	12.87	7.04	71.8	21.4	6.8
Behavioral intention of weight maintenance	7	23	10.86	5.70	60.2	23.4	16.4
General average			25.5	11.5	56.9	29.4	13.71

Min.: Minimum; Max.: Maximum, M: Mean for total score, SD=Standard Deviation for total score

[Low =13-30.33; Moderate = 30.34-47.66; High =47.67-65]

Table 2 shows that (56.9%) of the pregnant women expressed a low self-efficacy in maintaining their weight during pregnancy (M=25.5; SD=11.5).

DISCUSSION

The findings of our study revealed that the mean age and age group of pregnant women was 27.2 (21-25) years old, with the percentage of (31.8%); this is due to this age group being the most suitable time for marriage, this result is in contrast with the Blair, B. et al, findings, which indicated that the mean age and age range distribution was 29, (25-29) years old of the population of pregnant women[18]. The present study depicts that (84.02%) live in the city, this finding can be interpreted in a way that the most of participants are from the city. The study shows that about (68.80%) of participants are housewives, this is due to the sociocultural influences that obstacles them to complete their education, this result agrees with the findings conducted in Iraq which shows that (57.8%) of pregnant women were housewives[5]. Concerning the body mass index, almost half of the participants had an increase in weight, at a rate of (42.5%), while the percentage of the study sample who had obesity class I, II, add and III was (25.8%), (5.8%), and (2.4%), respectively. This finding provides empirical evidence that the pregnant women do not practice any form of physical activity, nor did they follow a healthy diet during pregnancy. In contrast a study conducted in Malaysia showed that 34.8% of them were overweight and another 34.8% were obese at booking[19-22]. Regarding pregnant women's beliefs related to weight control behaviors (56.9%) of them expressed a low self-efficacy in maintaining their weight during pregnancy (M=25.5; SD=11.5). The mean score of the total perceived severity of obesity was (28.17±13.19) for all participants, in contrast to study conducted in Iran, showed that overweight and obese women had a relatively higher level of sensitivity/intensity of perceived threat regarding obesity during pregnancy[23,24], and the mean score for perceived susceptibility was (14.57±7.48). While the mean score of perceived barriers was (35.88±12.80) These findings provide empirical evidence that the participants believe of many barriers prevent them from adopting behaviors to maintain weight, including social, economic, and even psychological, in contrast to study conducted in Iran, which showed perceived barriers was relatively low[25-29]. The study results demonstrated that a mean score of perceived benefits was (28.72±13.44), in contrast to study conducted in Iran, showed Level of perceived benefits was relatively high. Whereas the mean score of cues to action was (23.69±12.23), and self-efficacy in diet and exercise was (48.87±20.10) add and (12.87±7.04) respectively. This is due to inability of pregnant women to follow healthy behaviors or change their unhealthy behaviors to healthy such as dietary behaviors and physical activity lack of enough time for exercise, a feeling of limitation and restriction due to pregnancy, and fear of harming the fetus, in contrast with study conducted in south Africa, which found the positive beliefs about physical activity among women[30,32]. The behavioral intention was (10.86±5.70).

CONCLUSIONS

The study concluded that the overweight and obese pregnant women beliefs related to weight control generally were low for all health belief model subscales.

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REFERENCES

1. Fadhil S. Effect of Non-Pharmacological Pain Management Methods on Reduction the Duration of Labor Stages in Primigravida Women at AL-Elwyia Maternity Teaching Hospital. Iraqi Nat J Nurs Special 2019;32(1):31-8.
2. Al Janabi MA, Ameen AJ, Al-Eqabi DA. The effect of pregnancy on peak expiratory flow rate in comparison with non-pregnant Iraqi women Sample in MARJAN Teaching Hospital. J Fac Med Baghdad 2016;58(4):384-6.
3. Al-Rikabi ST, Khairi SH. Relationship between Third Trimester Vaginal Bleeding Medical Causes and pregnancy Outcomes of Pregnant Women Attending Bint Al-Huda Hospital in Al-Nasiriya City. Iraqi Nat J Nurs Special 2016;29(1).
4. Abbas AS, Younis NM. Efficacy of Pender's Health Promotion-based Model on Intervention for Enhancing University of Mosul Hypertensive Employees' Eating Behaviors: A randomized Controlled Trial. Revis Bionatura 2022;7(3):35.
5. Abdolaliyan N, Shahnazi H, Kzemi A, et al. Determinants of the self-efficacy of physical activity for maintaining weight during pregnancy: The application of the health belief model. J Educ Health Promot 2017;6.
6. Muwfaq Younis N. Efficacy of Health Beliefs Model-Based Intervention in Changing Substance Use Beliefs among Mosul University Students: A Randomized Controlled Trial. Revis Bionatura 2022;7(2):35.
7. Zeidan MA. Factors associated with complications during pregnancy. Iraqi Nat J Nurs Special 2015;28(1).
8. Khleel H. Evaluation of Pregnancy-related Health Behaviors' Change during Pregnancy for Pregnant Women Attending Abo Ghareeb Primary Health Care Sector. Iraqi Nat J Nurs Special 2021;34(1):59-68.
9. Ahmed MM, Naji AB. Assessment of Weight Control Behaviors Among Employees In University Of Mosul. Nveo-Natural Volatiles Essential Oils J 2021;8996-9002.
10. Khazaal FA, Leibi AH, Jasim I. Weight loss program outcome of obese attending AL-Kindy obesity research and therapy unit. Al-Kindy College Med J 2015;11(1):21-4.
11. Kareem HH, Dehham SH, Al-Wahid MA. The impact of teaching the creative writing by FOCUS strategy to develop. Indian J Public Health 2019;10(6).
12. Younis NM. Evaluation the health lifestyle of kindergarten students at Mosul city/Iraq. Int J Med Toxicol Legal Med 2023;26(1-2):148-52.
13. Ghafel HH, Rabe'a MA. Establish Growth Curve in Light of Body Mass Index for Infertile Women in Baghdad City. Iraqi Nat J Nurs Special 2013;26(2).
14. Khleel HA, Mohammed WK. Evaluation of Pregnancy-Related Health Behaviors for Pregnant Women's Attending Abo Ghareeb Primary Health Care Sector, Iraq. Ann Romanian Soc Cell Biol 2021;25(6):7970-7.
15. Saleh B, Ma E. Impact of Fast Foods and Snacks upon Adolescents' BMI at Secondary Schools in Baghdad City. Iraqi Nat J Nurs Special 2015;2(28):1-7.
16. Saadon M, Neaama M. Parents' Efficacy for Child Healthy Weight Behavior in Elementary Schools in Hilla City. Iraqi Nat J Nurs Special 2020;33(1):53-62.
17. Bura'a LN, Younis NM. An Interventional Program on Nurses Knowledge and Practice towards Phototherapy in Neonatal Care Units. Int J Memb Sci Technol 2023;10(2):1428-32.
18. Younis NM. Epidemiology of Hepatitis B-virus in Nineveh province: Retrospective Study. Int J Memb Sci Technol 2023;10(2):1440-4.
19. Karim N, Naji A. Health Belief Model and its Relation to Age and Body Mass Index Considering Colorectal Examinations among Graduate Students. Iraqi Nat J Nurs Special 2018;31(2):129-38.
20. Malverdy Z, Kazemi A. Health beliefs and stages of changes to improve behaviors among obese and overweight women undergoing preconception care. Iran J Nurs Midwifery Res 2016;21(6):595.
21. Mallick A, Alruwaili RM, AlBayyali WS, et al. A Cross-Sectional Study to Assess the Knowledge and Practice of Life Style Medicine Among Physicians. Bahrain Med Bull 2023;45(1).
22. Naghipour B, Gargari RM. Effect of Pretreatment with Diphenhydramine on Recovery Complications in Minor Ear, Nose and Throat Surgeries: A Randomized Clinical Trial. Bahrain Med Bull 2023;45(1).
23. Hassan A, Jasim Shlash AM, Moussa A, et al. A Study of Patients with Cerebral Vascular Accident (CVA) Regarding to Risk Factors in Iraq. Bahrain Med Bull 2022;44(3).
24. Ali HA, Abbas FF, Younis NM. Mothers' knowledge and attitudes towards breastfeeding in Thi-Qar City, Iraq. Rawal Med J 2023;48(2):514.
25. Bura'a LN, Younis NM. Nurses knowledge regarding to phototherapy at neonatal care units in Mosul City, Iraq. Rawal Med J 2023;48(2):379.
26. Ahmed MM, Naji AB. Assessment of Health Beliefs Regarding Weight Control among Overweight and Obese Employees in University of Mosul: Applying Health Belief Model. Kufa J Nurs Sci 2021;11(2):38-43.
27. Daddario DK. A review of the use of the health belief model for weight management. Med Surg Nurs 2007;16(6):363.
28. Ahmed MM, Naji AB, Younis NM. Efficacy of an educational program based on health belief model to enhancing weight control behaviors among employees in the University of Mosul: a randomized controlled trial. Revis Bionatura 2023;8(3):28.
29. Ayed AY, Younis NM, Ahmed MM. Comparison of infection severity of vaccinated and unvaccinated health workers with Corona Virus: A cohort study. J Educ Health Promot 2023;1(1):336.
30. Younis NM. Prevalence of Electronic Hookah and Risk Factors among University Students in Mosul City/Iraq. Int J Memb Sci Technol 2023;10(2):1422-7.
31. Younis NM, Taher AK. Efficacy of Trans Theoretical Model Intervention for Improving Behaviors related to Electronic Hookah Smoking among Healthcare Workers in Mosul Hospital: A Randomized Control Trail. Int J Memb Sci Technol 2023;10(2):1433-9.
32. Wharton CM, Adams T, Hampl JS. Weight loss practices and body weight perceptions among US college students. J Am College Health 2008;56(5):579-84.