Common First-Trimester Minor Discomfort: Impact of an Educational Program on Women's Self-Care Practices

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Abstract

Minor discomforts, although not life-threatening, can affect the mother's comfort and well-being, and their neglect may result in more serious problems. These discomforts can often be relieved through self-care measures or healthy practices. The present study aimed to evaluate the effect of an educational program on women's self-care practices regarding common minor discomforts during the first trimester of pregnancy. A quasi-experimental design was used, with a convenience sample consisting of 358 pregnant women who were evaluated in outpatient clinics at Beba Hospital, affiliated with the Ministry of Health in the Beni-Suef Governorate, Egypt. Four data collection instruments were used: (I) a structured interviewing questionnaire; (II) a self-reported practices questionnaire related to morning sickness (nausea and vomiting); (III) a self-reported practices questionnaire related to frequency of micturition; and (IV) a self-reported practices questionnaire related to fatigue. Regarding participants' characteristics, 41.6% had technical secondary education and 24% had postgraduate education. In the pretest, 16.5% of the pregnant women always avoided spicy food, which increased to 81.6% in the posttest. Additionally, 25.1% of the participants always or frequently emptied their bladder during the day and took medication as prescribed by doctors, which improved to 55% in the posttest. Regarding activity reduction, 16.8% of the pregnant women reported always reducing activities in the pretest, increasing to 64.5% in the posttest. Based on the results, there was a statistically significant improvement in the pregnant women's practices in the posttest regarding nausea and vomiting, frequent urination, and fatigue compared to the pretest. The study highlights the importance of collaboration with public health organizations to implement national awareness programs aimed at educating pregnant women about minor discomforts during the first trimester and providing resources that promote safer self-care during pregnancy.

Keywords: first trimester, minor discomfort, educational program, self-care practices.

Desconfortos menores comuns no primeiro trimestre: Impacto de um programa educacional nas práticas de autocuidado das mulheres

Resumo

Desconfortos menores, embora não representem risco de vida, podem afetar o conforto e o bem-estar da mãe, e sua negligência pode resultar em problemas mais sérios. Frequentemente, esses desconfortos podem ser aliviados por meio de medidas de autocuidado ou práticas saudáveis. O presente estudo teve como objetivo avaliar o efeito de um programa educacional nas práticas de autocuidado de mulheres em relação aos desconfortos menores comuns no primeiro trimestre gestacional. Foi utilizado um delineamento quase experimental, com uma amostra de conveniência composta por 358 gestantes, avaliadas em clínicas ambulatoriais do Hospital Beba, afiliado ao Ministério da Saúde, na Governadoria de Beni-Suef, Egito. Quatro instrumentos de coleta de dados foram utilizados: (I) questionário estruturado de entrevista; (II) questionário de práticas autorreferidas relacionadas ao enjoo matinal (náuseas e vômitos); (III) questionário de práticas autorreferidas relacionadas à frequência de

micção; e (IV) questionário de práticas autorreferidas relacionadas à fadiga. Quanto às características das participantes, 41,6% possuíam ensino técnico secundário e 24% tinham pós-graduação. No pré-teste, 16,5% das gestantes sempre evitavam alimentos picantes, percentual que aumentou para 81,6% no pós-teste. Além disso, 25,1% das participantes sempre ou frequentemente esvaziavam a bexiga durante o dia e faziam uso de medicamentos conforme orientação médica, valor que aumentou para 55% no pós-teste. Em relação à redução de atividades, 16,8% das gestantes relataram sempre adotar essa prática no pré-teste, aumentando para 64,5% no pós-teste. Com base nos resultados, observou-se uma melhora estatisticamente significativa nas práticas das gestantes no pós-teste em relação a náuseas e vômitos, micção frequente e fadiga, quando comparado ao pré-teste. O estudo reforça a importância da colaboração com organizações de saúde pública para a implementação de programas nacionais de conscientização, visando educar gestantes sobre os desconfortos menores no primeiro trimestre e fornecer recursos que promovam um autocuidado mais seguro durante a gravidez.

Palavras-chave: primeiro trimestre, desconfortos menores, programa educacional, práticas de autocuidado.

1. Introduction

There are three trimesters in pregnancy; the first trimester is from the 1st week to week 12. The events that lead to pregnancy begin with conception, in which a sperm penetrates an egg. The fertilized egg then travels through the woman's fallopian tube to the uterus, where it implants itself in the uterine wall. The zygote is made up of a cluster of cells that later form the fetus and the placenta (Dukare et al., 2024).

Pregnancy is a delicate period during which women often face various health challenges and symptoms. These can include fatigue, nausea, headaches, and body aches, all of which may cause discomfort and affect their overall well-being (Agten et al., 2024). As a result, pregnant women sometimes seek quick solutions to manage these symptoms (Beni et al., 2022; Hassan et al, 2017; Ibrahim et al., 2020; Hassan et al., 2020; Hassan; Nasr, 2017).

Morning sickness can occur at any time of the day. The cause is unknown, although it has been linked to changes in the levels of various hormones during pregnancy. It usually starts at about the sixth week of pregnancy and settles by about the fourteenth week. Some women will not be affected by morning sickness, but in others, it can be so bad that they have to be hospitalized. Generally, the baby is unaffected by morning sickness unless symptoms are severe and prolonged (Ibrahim et al., 2020).

During pregnancy, the physiological changes in the gastrointestinal tract include gastric motility being most affected and high levels of hormones. When it occurs, the hormone arrives at high levels, causing morning sickness, which occurs at any time of the day in more than 70% of pregnant women. However, if these conditions increase after week 20 or lead to ketosis with a massive weight loss, hyperemesis gravidarum can be reached, and intravenous fluids may be needed (Hassan et al., 2019; Hassan et al., 2020; Yahaya et al., 2022).

Although having some anxiety, nausea, and vomiting is normal during pregnancy, particularly in the first trimester, some women experience more severe symptoms that last into the third trimester (Li et al., 2024). The cause of the more severe form of this problem, known as hyperemesis gravidarum, is not known. Women with hyperemesis gravidarum experience nausea that does not go away, weight loss, reduced appetite, dehydration, and feeling faint. Affected women may need to be hospitalized so that they can receive fluids and nutrients (Helmizar et al., 2024). Some women feel better after their 20th week of pregnancy, while others experience the symptoms throughout their pregnancy (de Tejada et al., 2025).

Some women have food cravings during pregnancy. The reason for this is not really understood. The cravings are often for foods that the women seem to need, such as milk (the women need more calcium during pregnancy), or tomatoes and oranges (vitamin C requirements double during pregnancy) (McEvoy et al., 2023). Some women may also crave things that aren’t actually food, such as chalk or clay. Again, it’s not clear why this happens. Women sometimes find that foods taste different, or women 'go off' certain foods such as tea, coffee, or meat. This usually settles down as the pregnancy progresses. Pregnancy hormones can slow down the muscles in the bowel, and in some women, this can cause constipation (Kruthi et al., 2024).

Additionally, changes in the urinary system include ureteral and renal pelvis dilatation (hydroureteronephrosis), which occurs during pregnancy. These changes can be seen by ultrasonography in the second trimester and continue up to 6-12 weeks after birth. As a result of dilation, the dilated parts are capable of accumulating 200-300 mL of urine. Increased progesterone leads to relaxation of the bladder wall and increased capacity. But pregnancy expands the uterus also, causing the bladder to move up and down and reducing its capacity (Hassan

et al., 2017; Hassan et al., 2020).

The current study was conducted to evaluate the effect of an educational program on women's self-care practices for common first-trimester minor discomfort.

2. Materials and Methods

2.1 Research design

A quasi-experimental research design (pre/post-test) was utilized to achieve the aim of the current study.

2.2 Subjects and Settings

The outpatient clinics at Beba Hospital, Egypt, which are connected to the Ministry of Health of the Beni-Suef Governorate, used a convenience sample of 358 pregnant women.

2.3 Tools of data collection

2.3.1 Tool 1: A structured interview questionnaire

An Arabic-structured interview questionnaire was developed by the researcher based on an extensive literature review pertinent to the study's objectives. It includes open- and closed-ended questions focused on the sociodemographic characteristics of women.

2.3.2 Tool 2: Self-reported practices regarding morning sickness (nausea and vomiting) questionnaire sheet

The document describes a self-reported practices questionnaire designed to evaluate behaviors for alleviating morning sickness, focusing on symptoms like nausea and vomiting. It uses three response options-always, sometimes, and never-scoring them on a three-point Likert scale: Always (3), Sometimes (2), and Never (1). Respondents are categorized based on their total scores: good practices (scores $\geq$ 14), average practices (9-13), and poor practices (< 9), with a scoring system that assigns points based on the frequency of reported behaviors.

2.3.4 Tool 3: Self-reported practices regarding frequency of micturition questionnaire sheet

The document describes a self-reported practices questionnaire developed to assess behaviors related to alleviating micturition frequency. It uses a three-point Likert scale for responses: Always (3), Sometimes (2), and Never (1), categorizing respondents into good, average, and poor practices based on their total scores, which range from 1 to 12. The scoring categories are: Good for scores $\geq$ 75% $\geq$ 9 points), Average for scores 50%-74% (6-8 points), and Poor for scores < 50% (< 6 points).

2.3.5 Tool 4: Self-reported practices regarding fatigue questionnaire sheet

It is a self-reported practices questionnaire developed to assess behaviors related to alleviating fatigue, utilizing a three-point Likert scale with responses categorized as Always (3), Sometimes (2), and Never (1). Respondents' scores were classified into three categories: Good (scores $\geq$ 75% or $\geq$ 9 points), Average (scores between 50%-74% or 6-8 points), and Poor (scores < 50% or < 6 points).

2.4 Supportive material

It was designed to enhance women's practices regarding minor discomforts. It was designed by the researcher in the form of a handout (booklet) using simple Arabic language and different illustrative pictures in order to facilitate understanding its content. The educational booklet contained knowledge about the most common 1st minor discomfort (morning sickness, frequency of micturition, fatigue), causes, and self-management.

2.5 Fieldwork

The study evaluated pregnant women's knowledge and self-reported practices regarding common minor discomforts through a structured three-phase approach. In the assessment phase, interviews were conducted, and

informed consent was secured, followed by data collection using a self-administered questionnaire. The planning and implementation phase occurred at Beba Hospital with random sampling of 7-8 participants from June to December 2024. Six theoretical sessions, lasting 30 minutes each in simple Arabic, covered the causes, types, and self-management of discomforts such as morning sickness, constipation, and heartburn. The evaluation phase compared pretest and posttest scores to assess the educational program's impact on participants' knowledge, attitudes, and practices.

2.6 Ethical and administrative considerations

A written approval was obtained from Beni-Suef University's Faculty of Medicine's research ethics committee. Informed consent was secured from pregnant women, explaining the study's purpose and allowing for withdrawal at any time. Official permission for data collection was granted through letters from the dean of the Faculty of Nursing to the manager of Beba Hospital, detailing the study's nature and purpose.

2.7 Statistical design

Data analysis was conducted using descriptive statistics (means and standard deviations) with SPSS version 26. A p-value of < 0.05 indicated statistical significance, while $p < 0.001$ indicated high significance. The *chi-Square* test was used to compare proportions for qualitative parameters.

3. Results

3.1 Pregnant women's

Figure 1 portrays 41.6% of women had technical secondary education, and 24% had postgraduate studies.

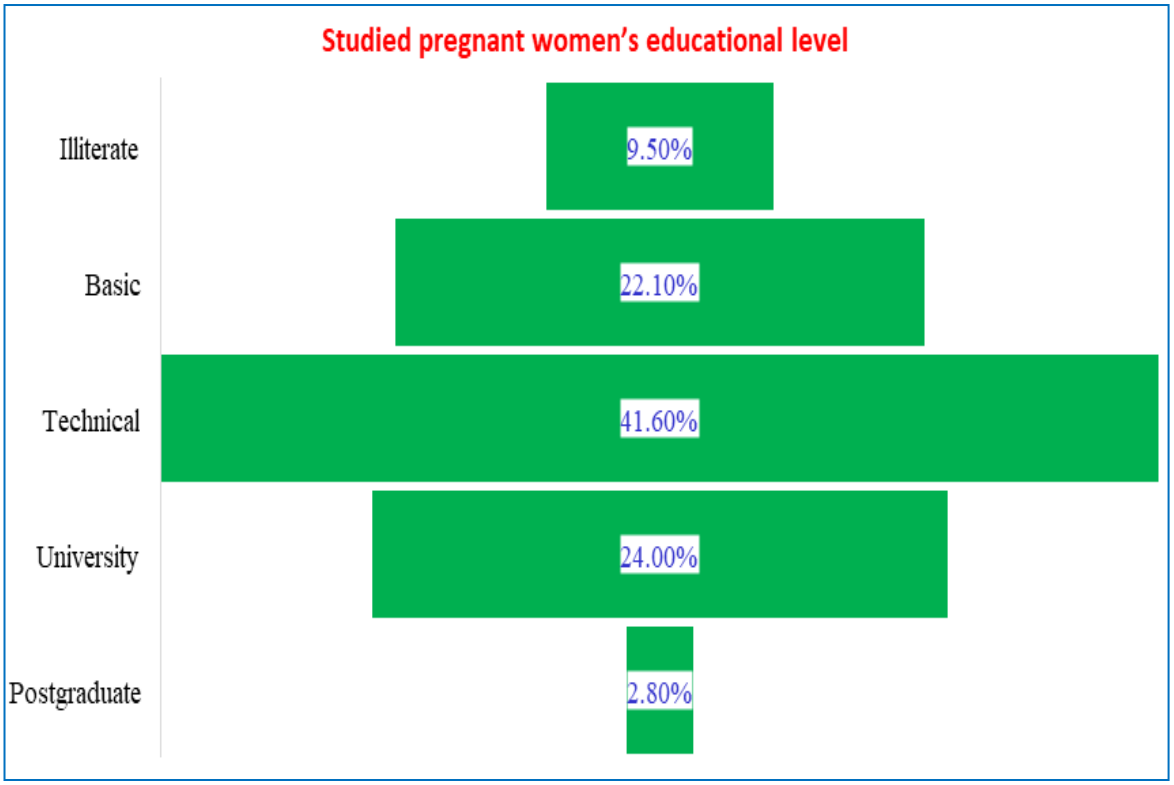

Figure 1. Studied pregnant women's educational level. Source: Authors, 2026.

3.2 Common symptoms in pregnant women

Table 1 and Figure 2 show that there was a statistically significant improvement during the posttest among the

studied pregnant women's practices regarding nausea and vomiting compared with the pretest. It was noticed that 16.5% of the studied pregnant women always avoided spicy food during the pretest, which improved in the posttest to become 81.6%.

Table 1. Studied pregnant women's practices regarding nausea and vomiting (n = 358).

Morning Sickness (Nausea and Vomiting)	Pretest						Posttest						X^2 (*p*-value)
	Always		Sometimes		Never		Always		Sometimes		Never		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Eat a dry carbohydrate meal on awakening	30	8.4	105	29.3	223	62.3	173	48.3	121	33.8	64	17.9	13.032 (0.011*)
Avoid spicy food	59	16.5	77	21.5	222	62.0	292	81.6	26	7.3	40	11.2	20.831 (0.008**)
Decrease tea/coffee intake	65	18.2	62	17.3	231	64.5	129	36.0	128	35.8	101	28.2	25.882 (0.001**)
Intake of small, frequent meals	57	15.9	63	17.6	238	66.5	226	63.1	90	25.1	42	11.8	20.918 (0.007**)
Take herbal remedies to reduce vomiting	54	15.1	57	15.9	247	69.0	133	37.2	121	33.8	104	29.1	21.808 (0.005**)
Taking medication as the doctor's order	32	8.9	97	27.1	229	64.0	124	34.6	146	40.8	88	24.6	22.853 (0.004**)

Note: *Statistically significant at $p \leq 0.05$. ** High statistically significant at $p \leq 0.01$. Source: Authors, 2026.

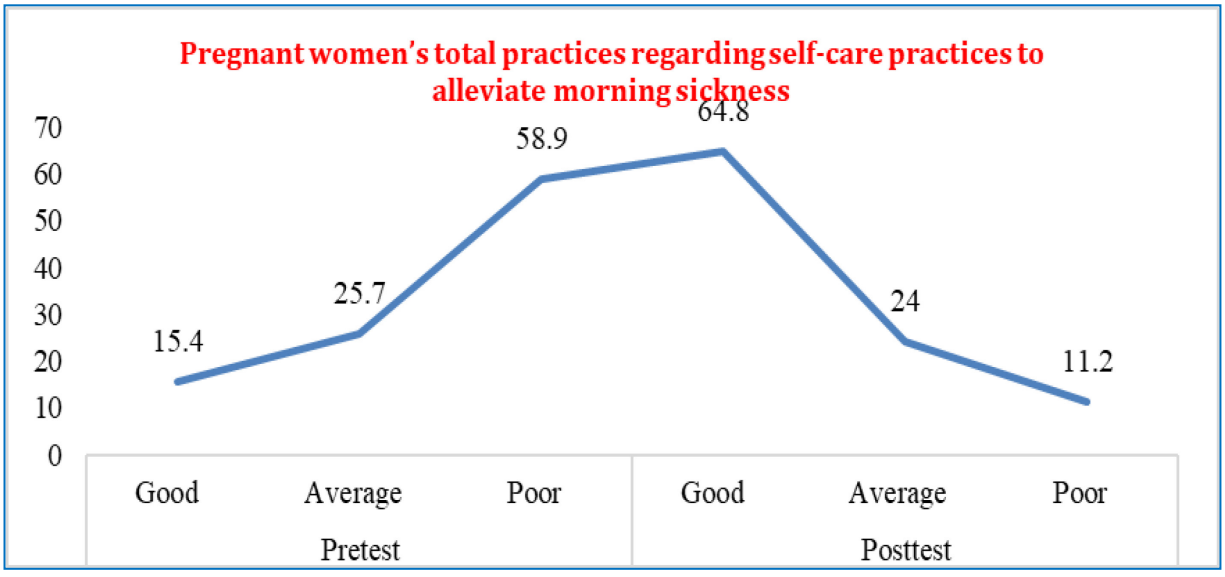

Figure 2. Studied pregnant women's total practices regarding self-care practices to alleviate morning sickness. Source: Authors, 2026.

3.3 Urinary relief in pregnant women

Table 2 and Figure 3 show that there was a statistically significant improvement during the posttest among the studied pregnant women's practices regarding frequent urination compared with the pretest. It was noticed that 25.1% of the studied pregnant women were always frequently evacuating the bladder during the day and taking medication as doctors ordered, which improved the posttest to become 55%.

Table 2. Studied pregnant women's practices regarding frequent urination (n = 358).

Frequent urination	Pretest						Posttest						X^2 (*p*-value)
	Always		Sometimes		Never		Always		Sometimes		Never		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Decrease fluid intake in the evening	70	19.6	55	15.4	233	65.1	203	56.7	85	23.7	70	19.6	9.516 (0.049*)
Frequent bladder evacuation during the day	90	**25.1**	66	18.4	202	56.4	197	**55.0**	83	23.2	78	21.8	10.645 (0.031*)
Using warm water in washing reduces the number of times you urinate	40	11.2	48	13.4	270	75.4	200	55.9	77	21.5	81	22.6	10.184 (0.037*)
Taking medication as the doctor orders	46	12.8	98	27.4	214	59.8	210	58.7	84	23.5	64	17.9	9.828 (0.045*)

Note: *Statistically significant at $p \leq 0.05$. ** High statistically significant at $p \leq 0.01$. Source: Authors, 2026.

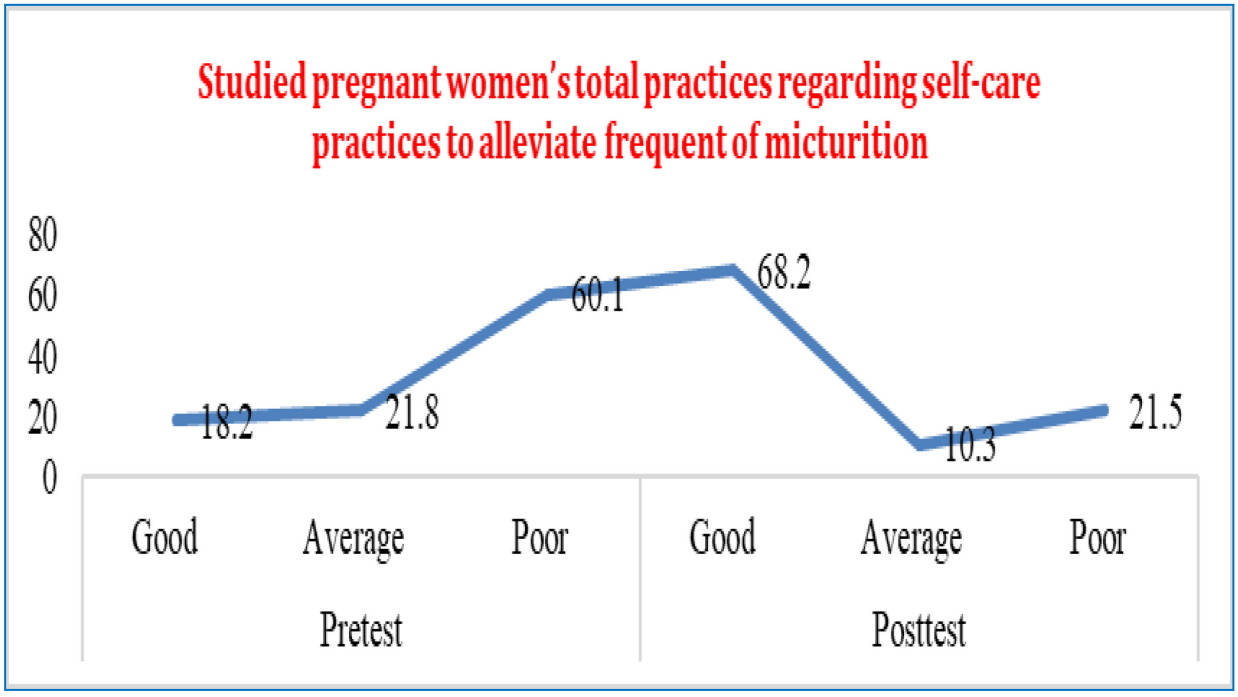

Figure 3. Studied pregnant women's total practices regarding self-care practices to alleviate the frequency of micturition. Source: Authors, 2026.

3.4 Fatigue in pregnant women

Table 3 and Figure 4 show that there was a statistically significant improvement during the posttest among the studied pregnant women's practices regarding fatigue compared with the pretest. It was noticed that 16.8% of the studied pregnant women always reduced activities, which improved the posttest to become 64.5%.

Table 3. Percentage of the studied pregnant women's practices regarding fatigue (n = 358).

Fatigue	Pretest						Posttest						X^2 (*p*-value)
	Always		Sometimes		Never		Always		Sometimes		Never		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Resting reduces fatigue	28	7.8	102	28.5	228	63.7	192	53.6	78	21.8	88	24.6	16.858 (0.007**)
Eat a balanced diet	54	15.1	73	20.4	231	64.5	281	78.5	41	11.5	36	10.1	9.585 (0.048*)
Reduce activities	60	16.8	61	17.0	237	66.2	231	64.5	83	23.2	44	12.3	11.163 (0.025*)
Taking medication as the doctor orders	52	14.5	63	17.6	243	67.9	201	56.1	63	17.6	94	26.3	18.523 (0.005**)

Note: *Statistically significant at $p \leq 0.05$. ** High statistically significant at $p \leq 0.01$. Source: Authors, 2026.

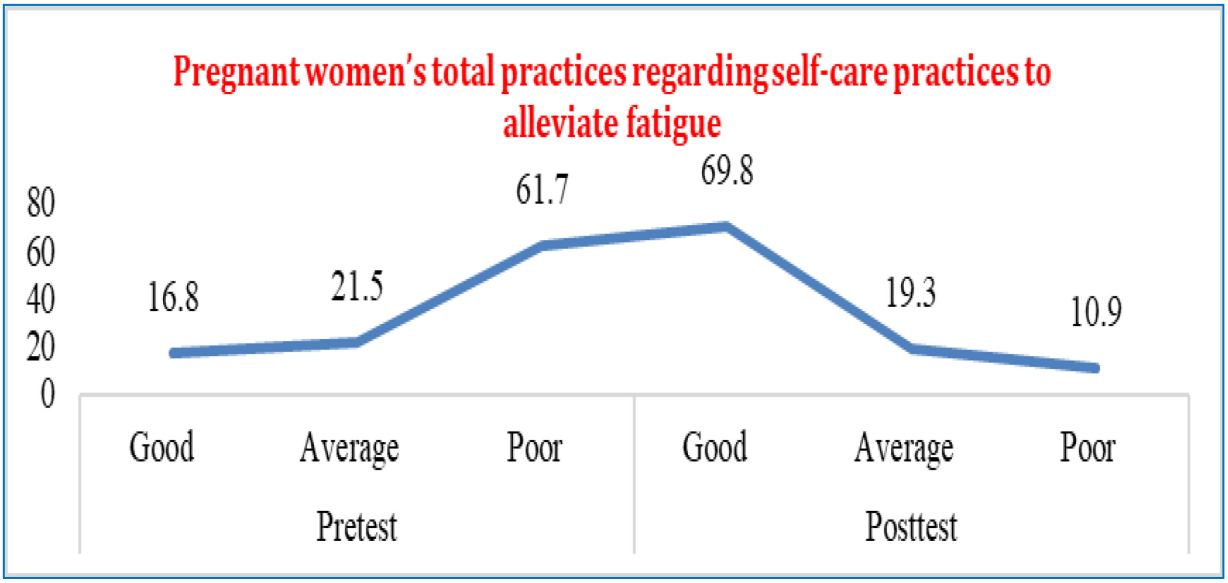

Figure 4. Studied pregnant women's total practices regarding self-care practices to alleviate fatigue. Source: Authors, 2026.

4. Discussion

The common minor pregnancy discomforts may be physiological, such as backache, constipation, dyspnea, and hemorrhoids. Experiences of these changes are varied among pregnant women. These discomforts aren't serious in themselves, but their presence affects and decreases a woman's feeling of well-being and comfort (Hassan et al., 2017; Hassan et al., 2020; Hassan et al., 2025). The present study aimed to evaluate the impact of an educational program on women's self-care practices in managing common minor discomforts during the first

trimester of pregnancy.

Concerning educational level and residence, the present study revealed that less than half of the studied pregnant women had technical secondary education. And more than half of them were rural residents. This finding agrees with Marote (2016), who implemented a study titled "Assessment of risk perception of teratogenicity of commonly used drugs among pregnant women" and proved that more than half of the sample participating in the study had a secondary educational level (Marote, 2026). The educational level and place of residence appear to play a significant role in shaping health awareness and access to information among pregnant women.

This finding was different from El-Ghitany et al. (2023), who assessed "Factors associated with modern contraceptive use among women of reproductive age in Egypt," and reported that more than half of women aged 15–49 years had no formal education, and two-thirds resided in rural areas (El-Ghitany et al., 2023). This may reflect regional variations or differences in sampling methods. Such discrepancies highlight the need for contextualizing local study results within broader national data to ensure accurate interpretation and policy planning.

Pertaining to the behavior of the studied pregnant women regarding self-reported practices to alleviate common minor discomfort, there was a statistically significant improvement during the posttest among the studied pregnant women's behaviors regarding nausea and vomiting compared to the pretest, with a highly statistically significant improvement. This finding is similar to Ewais et al. (2024), who studied the "Effect of Tele-Nursing Services on Pregnant Women" Regarding Minor Discomforts in Zagazig, which found that there was no statistically significant difference between the study and control groups at pre-intervention (Ewais et al., 2024). Whereas there was a highly statistically significant improvement in the study group compared to the control group at post-intervention.

Conversely, this finding is different from Lee et al. (2021), who found that although educational interventions increased knowledge, they did not always translate into behavioral change, particularly among women with limited health literacy or poor access to health services (Lee et al., 2021). This discrepancy may be attributed to socioeconomic, cultural, or psychological factors that affect the implementation of learned practices in real-life settings.

Additionally, the findings of the current study demonstrated a statistically significant improvement in the behaviors of pregnant women concerning frequent urination and fatigue during the posttest phase compared to the pretest. This suggests that the educational intervention had a positive impact on enhancing the women's self-care practices during pregnancy. Notably, only one quarter of the participants reported always evacuating the bladder during the day and adhering to medication instructions in the pretest, which improved to more than half in the posttest.

These findings are consistent with the results of Ahmed & Ali (2021) and Dong et al. (2025), who reported that educational programs significantly improved pregnant women's knowledge and practices regarding the management of minor discomforts such as urinary frequency and fatigue. In brief, related to the behavior of the studied pregnant women regarding self-reported practices to alleviate minor discomfort, the current study demonstrated that there was statistically significant improvement in the behaviors of the studied pregnant women during the posttest phase concerning self-reported practices to alleviate minor discomforts such as morning sickness, frequency of micturition, and fatigue. Notably, more than one quarter of the participants reported regular water intake and adherence to prescribed medications during the pretest, which improved to more than half in the posttest. This enhancement suggests the positive impact of health education on promoting healthy practices among pregnant women.

Moreover, this improvement could be attributed to attending the program sessions and the lecture, positive reinforcement, or the long-term retention of knowledge, as well as a wide variety of educational methods used (Hassan et al., 2025; Nady et al., 2017; Gamel et al., 2020; Hassan, 2019; Zaki et al., 2025; Hassan; Farag, 2019; Abd-Elfattah et al., 2025; Abd-Elfattah et al., 2026). Additionally, the distributed Arabic booklets also played a crucial role in attaining and retaining knowledge.

Booklets are best used when they are brief, written in plain language, and full of good pictures, and when they are used to back up other forms of education. This is in accordance with Edgar Dale's or the NTL's Pyramid of Learning, as cited by Masters, as the pyramid illustrates that individuals can retain 10% of what they read and 20.0% of what they see and hear. The same author added that one can retain 50% of what he learned by a discussion (Masters, 2013; Mohamed; Hassan, 2020; Mohamed et al., 2025; Masoud et al., 2026; Hassan et al., 2025; Said et al., 2026; Eid et al., 2023; Hassan et al., 2025; Nashed et al., 2025; Abd-Elfattah et al., 2025).

5. Conclusions

Based on the findings of the present study, it can be concluded that there was a statistically significant improvement during the posttest among the studied pregnant women's practices regarding nausea and vomiting, frequent urination, and fatigue compared with the pretest after program implementation.

6. Authors' Contributions

Heba Ahmed Mohamed: conceptualization, data collection and curation, formal analysis, and writing. *Hagar Kamal Masoud*: conceptualization, data curation, formal analysis, methodology, and data analysis. *Hanan Elzeblawy Hassan*: conceptualization, methodology, supervision, validation, visualization, writing, original draft, writing, review, editing, and publication.

7. Conflicts of Interest

No conflicts of interest.

8. Ethics Approval

A written approval to conduct the study was obtained from the research ethics committee of the faculty of medicine, Beni-Suef University (approval no.: FMBSUREC/11022024/Amin).

9. Recommendation

Collaborate with public health organizations to implement national awareness programs focusing on educating pregnant women about 1st trimester minor discomfort and offering resources for safer pregnancy self-care practices.

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