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Effect of Educational Program on Promoting Birth Preparedness Awareness, and Pregnancy Outcomes among Primigravida Women

ABSTRACT

Background: A strategy known as "birth preparations" encourages expectant women, their families, and others to make plans for birth and address any potential problems. It is a crucial part of globally acknowledged programs for safe motherhood. **Aim:** the study was conducted to assess educational program's effect on promoting birth preparedness awareness and improving pregnancy outcomes among primigravida women. **Design** A quasi-experimental design (pre/post-intervention). **Setting:** the study was conducted at antenatal clinic and postpartum unit at Beni-Suef university hospital. **Subjects:** A purposive sample composed of 96 women. **Tools:** Three tools were used; 1st tool was structured interviewing questionnaire, 2nd tool was Birth Preparedness awareness sheet, and 3rd tool was including pregnancy outcomes for both mother and newborn. **Results:** over half (57.29%) of the women aged from 20 to <24 years old; with mean±SD (24.68±3.85), less than two-thirds (64.58%) of the women lived in rural areas, and less than half (48.96%) of the women were secondary educated. There was a highly statistically significant improvement in the total scores of knowledge, attitude, and practice pre/post program. **Conclusion:** The current study showed that there was a highly statistically significant improvement in women's knowledge, practice, and attitude toward birth preparedness and pregnancy outcomes as compared to preprogram. **Recommendations:** A brochure containing obstetric and neonatal warning signs and birth preparedness research is being distributed in hospitals and healthcare units for primigravida women.

Key words Birth preparedness, Awareness, Pregnancy Outcomes, Primigravida Women

Introduction

Pregnancy and childbirth is a significant source of happiness and celebration for thousands of women every day. It is believed that pregnancy and delivery are natural physiological processes. Any pregnancy, however, carries a certain risk of unanticipated difficulties, and managing these issues frequently involves a woman's and her family's ignorance as well as a variety of sociocultural notions **(Salroo et al., 2023).**

Maternal morbidity and mortality may be greatly decreased If expectant women and their families are well equipped to childbirth, can identify pregnancy warning signs, and seek medical help as soon as feasible, Therefore, increasing women's knowledge of pregnancy warning signs will improve early problem identification and reduce the amount of time it takes for them to determine whether to seek obstetric care **(Nath et al., 2024).**

A labor or emergency is not the time to make decisions; rather, it is the moment to seek medical attention from qualified professionals. In order to reduce obstetric complications, BPCR refers to the method of preparing for a typical birth and expecting what should be done in the event of an emergency **(Feyisa Balcha et al., 2024).**

Birth preparedness includes prenatal, birthing, postpartum, and neonatal care. According to the Johns Hopkins Program for International Education in Gynecology and Obstetrics (JHIEGO), BPCR components include finding a birth place, finding a SBA, found a support person during pregnancy, labor, and the postpartum period, prepared the delivery equipment, found a potential blood donor in case of an emergency, and saved money for emergency and birth-related expenses **(Alamrew et al., 2024).**

As the first qualified staff member to interact with expectant mothers, prenatal nurses are essential in empowering them throughout the prenatal period by giving them the right information, preparing them physically and emotionally, emphasizing their rights to improve the quality of their birth, and offering opportunities for social support with medical professionals to carry out the birth plan **(Hassan et al., 2024).**

Significance of the study

Over 295,000 women die each year from complications related to pregnancy and delivery, making maternal mortality a serious public health concern in 2020 **(Syahfitri al., 2024)**. The WHO reports that 95% of these maternal mortality occur in low-income countries. Unexpected and hazardous problems during pregnancy can occur suddenly, increasing the chance of mortality and lifelong morbidity for the expectant woman and fetus **(Hassan et al., 2020).**

One of the WHO-recommended strategies to encourage the increased use of trained birth attendants and medical facilities during delivery is Birth Preparedness and Complications Readiness (BPCR) **(Mjemmas et al., 2023).**

In Egypt there were 43.5 maternal deaths for every 100,000 live births. The 2015 Millennium Development Goals state that six Egyptian governorates have high MMR (Assiut, Gharbia, Beni Suef, Qena, and Sohag). For example, with 60–65 deaths /100,000 live births; while other governorates have low MMR rates (New Valley, Ismailia, Suez, and Port Said) with 24–37 deaths /100,000 live births. Upper Egypt has an elevated rate of MMR (74%–61%) than Lower Egypt, according to the Egyptian Ministry of Health **(Nasr et al., 2022).**

So the researcher noted that these findings highlight the need for enhanced educational program to improve birth preparedness among primigravida women in Egypt.

Aim of the Study

This study aimed to evaluate the effect of educational program on promoting birth preparedness awareness and thus improving pregnancy outcomes among primigravida women through:

1) Assess the birth preparedness level among primigravida women.
2) Designing an educational program to promote awareness of birth preparedness and improve pregnancy outcomes among primigravida women.
3) Evaluating educational program effect on promoting awareness of birth preparedness and improving pregnancy outcomes among primigravida women.

Research hypotheses

After implementation an educational program:

- The primigravida women's knowledge, attitude, and practice of birth preparedness will be improved after the attendance of the educational program.
- The pregnancy outcomes will be improved after the attendance of the educational program.

Subjects and Methods

Study design

A quasi-experimental design with one group (pre and post-intervention) used in this study.

Setting

This study was accompanied at antenatal care clinic and postpartum unit of Beni-Suef University Hospital/ Egypt.

Subjects:

A purposive sample of 96 women.

Total sample size was calculated according to using the following formula:

n=N/ {1+N (e) ²}, Where n sample size, N = population size =126, e=level of error =0, 05 **(chandrasekharan et al., 2019)**

The total number of primigravida women at the antenatal clinic at Beni-Suef Hospital university on the time of conducting the study is 126 women, so the target population of this study is 96 primigravida women.

Tools of data collection:

Tool I: Structured interviewing questionnaire designed by the researcher

and written in a simple Arabic language and contains the following two parts:

Part 1: Socio-demographic characteristics of the women; it involved 6 closed ended questions from Q1: Q6 (age, educational level, place of residence, occupation, husband occupation and income from the woman's point of view)

Part 2: Obstetric data of women; It included 14 close ended questions from Q7 to Q20 (gestational age, number of ANC visits, medical checkups during pregnancy, problems with current pregnancy, decision about place of delivery, etc…).

Tool II: Birth Preparedness awareness, including three parts.

Part I: Women's knowledge of birth preparedness "pre/post-intervention" adapted from Nkwocha, et al., (2017) and modified by the researcher after studying literature in this field and including 2 domains.

1st Domain: knowledge about danger signs

Assessed women knowledge about pregnancy danger signs included 8 questions, danger, labor danger signs included 6 questions, and postpartum danger signs for woman included 5 questions and for new born included 4 questions these questions were answered by using (yes, no or don't know).

Scoring system:

There was "sufficient knowledge" among women who spontaneously reported at least 3 danger signs for each stage of pregnancy, labor, and the postpartum period, and "insufficient knowledge" among those who reported 2 or fewer danger signs.

2nd Domain consisting of three parts:

Part I: knowledge of pregnant woman about birth preparedness:

Birth-preparedness (BP): the dependent variable for this study was measured using series of questions, adapted from **(Kakaire et al.2011).**

included 4 questions (known birth place, known SBA, saved money for labor or any emergency, and organized transport in case of delivery and obstetric emergency) that were answered using (yes/ no / don't know).

Scoring system: For the women's knowledge, yes answers were scored 2 and no answers were scored 1, and don't know answers were scored 0. Women who reported spontaneously two or more item were considered "well prepared" and those who reported one or no item were considered "not prepared".

Part II: Reported primigravida women's attitude to birth preparedness "pre/post-intervention"

Adapted from **Samuel & Ronnah (2019)** and modified by the researcher after studying literature in this field to evaluate reported attitude of pregnant woman toward birth preparedness included 12 questions (a pregnant woman organizing for birth should know her expected date of delivery (EDD), a pregnant woman organizing for birth should know her blood group…. etc.) that were answered by using (strongly agree/ agree/ neutral/ disagree/ strongly disagree).

Scoring system: A five-point Likert-like scale including 12 items was used to assess the attitude towards birth preparedness, Women's reported attitude was scored (5) for the "strongly agree" attitude, (4) for "agree" attitude, (3) for "neutral" attitude, (2) for "disagree" attitude, and (1) for "strongly disagree" attitude. Women who scored high points considered to have "positive attitude" toward childbirth, while the other women who scored low points were considered to have "negative attitude" toward childbirth.

Part III: Reported practices of pregnant women toward birth preparedness "pre/post-intervention":

Adapted from **Tobin et al., (2014)** and modified by the researcher after studying literature in this field to evaluate reported practices of pregnant woman toward birth preparedness included 8 questions of practices as (doing antenatal visit at regular time, taking tetanus during pregnancy, taking folic acid regularly… etc.); that were answered by using (done / not done).

Scoring system: Women's reported practice were score 1 for the "done" practice and 0 for "not done" practice. Total

maximum point was 8. A pregnant woman will consider "prepared" for birth if she is stated to follow at least 4 of the 8 basic components of BP (scores between 4-8points) while those who score between 0-3 points will consider as "not prepared" for birth.

Tool III: Reported pregnancy outcomes for both mother and her newborn:

Adapted from **Mohaghegh et al., (202[illegible]nd Shimpuku et al., (2019)** and reformed by the researcher after studying literature in this field to evaluate reported outcomes for woman and her newborn and included 12 items for woman as (did you give birth in a hospital? have you identified a skilled birth provider to assist you at the time of delivery? ...etc.) and 6 items for newborn as (did he have a premature birth? the labor was for a live baby? …etc.) that were answered by using ([illegible] or no).

Tools Validity and reliability

- ***Content Validity:*** Face and content validity of the study tools was ass[illegible]d by 3 experts (1 professor and 2 assistant professors) in maternal and newborn health nursing department of faculty of nursing, Beni-Suef University for accuracy, comprehensiveness and clarity in language.
- ***Reliability:*** The tool reliability was assessed through measuring their internal consistency by Cronbach Alpha Coefficient test and its value was (0.774) for knowledge, (0.611) for practices and (0.792) for attitude.

Ethical considerations:

Ethical approval was obtained prior to the pilot study from the scientific research ethical committee of faculty of medicine Beni-Suef university, an official permission was taken from the authoritative personnel in the Beni-Suef university hospital and every woman who wanted to be included in the s[illegible]y sample gave her informed consent. The purpose of the study and their freedom to decline or withdraw at any moment without providing a reason were explained to them. Additionally, participants were informed that no research uses of the data would be permitted without consent.

Operational design

Preparatory phase:

In order to create tools for data colle[illegible]ng, it involved reviewing previous, current, national, and international related literature as well as theoretical understanding of many study components using books, papers, the internet, periodicals, and magazines.

Pilot study:

Was conducted on ten of primigravida women, it was done for evaluation of the tools' clarity and applicability, the fieldwork's viability, and the identification of any potential obstacles that could face data gathering. Modifications were made in response to the results of the pi[illegible]study. The sample of the pilot study was 10% of total sample and was excluded from the total study sample.

Field Work

- [illegible]ocess of data collection covered about 5 months during the period from the beginning of Februar[illegible]024 until of June 2024, The researcher attended the antenatal [illegible]re clinic of Beni-Suef university hospital from 9:00 am to 1:00 pm, 2 days / week (Saturday and Monday), average from 2-3 primigravida women a day, and interviewed the women at the antenatal care [illegible]ic after presented herself to the woman and a brief clarification of the nature and aim of the study was provided before each interview.
- Every woman was questioned separately following informed consent for study participation in accordance with ethical considerations, and the researcher's job in filling out the questionnaire was to help the mother understand [illegible]ny unclear or challenging questions. The time required to finish one questionnaire was about 20-30 minutes with average number 2 to 3 questionnaires per day. Some women had delivered in out of the university hospital and the investigator contact with [illegible]m through phone number. The current study

was conducted in 4 phases: assessment, planning, implementation, and evaluation.

Assessment phase

After getting informed consent from the women the researcher then started interviewed to determine their socio-demographic characteristics and awareness about birth preparedness. The information acquired during this stage was used as the starting point for developing the instructional program and in later comparisons to evaluate the effect of the educational program. Each interview lasted 20–30 minutes.

Plan phase

included creating the curriculum following a thorough analysis of pertinent literature using the baseline data gathered during the assessment stage (pre-test). The educational program's goal was to raise primigravida women's understanding of birth readiness in accordance with their needs, as indicated by their pretest scores. To meet demands, address knowledge and practice gaps, and ensure participant satisfaction, the researcher created a printed handbook in Arabic.

Implementation phase

The idea was put into practice at antenatal clinic at Beni-Suef university hospital. Two sessions were being performed to cover the topic content sequentially. Each session was last about 45 minutes and includes discussion periods focused on the accomplishments, advancements, and feedback of women.

In session 1 the researcher welcomed women and clarified the nature and purpose of the study. Also the researcher explains general information about safe motherhood, schedule and the important of antenatal visits, danger signs during pregnancy and how to deal with it.

During session 2 the researcher explained danger signs during labor, postpartum (regarding mother & newborn) and how to deal with it.

During session 3 the researcher explained component of birth preparedness, how to prepare for birth, the three delays affecting birth, factors affecting birth preparedness, the benefits of birth preparedness, and pregnancy outcomes goals.

Evaluation phase:

The post-test was administered to the participant women immediately following an educational program implementation in order to gauge their awareness of birth preparedness. The women took about10:15 minutes to complete the questionnaires. This assessment was carried out right away after an educational program implementation application.

Administrative design:

An official approval was obtained from Dean of Faculty of Nursing-Beni-Suef University to conduct the study. A letter containing the title and aim of the study and be directed to the director of the Beni-Suef university hospital to seek the permission for data collection. Total confidentiality of any obtained information was ensured. Also, the researcher assured that the study maneuvers wouldn't harm the participants.

Statistical design

The collected data were organized, analyzed using appropriate statistical significance tests. The data were collected and coded using the Computer Statistical Package for Social Science (SPSS), version 25, and was also used to do the statistical analysis of data. Data were presented using descriptive statistics in the form of frequencies and percentages. Chi-square and Pearson Correlation Coefficient tests were used to compare frequencies between study variables. Degrees of significance of results were considered as follow:

- p-value > 0.05 Not significant (NS)
- p-value ≤ 0.05 Significant (S)
- p-value ≤ 0.01 Highly Significant (HS)

RESULTS

Table (1): reveals that 57.29% of women ages were ranged from 20-24 years old with mean±SD; 24.68 ± 3.85, (64.58%) of women lived in rural areas, (79.17%) of women was housewife. (66.67%) their husbands were free-lancer. The table also cleared that (60.42%) of women who were studied had sufficient income from their point of view.

Table (2): clarifies that; after the end of the educational program there was an improvement in all knowledge items about birth prepared ss there were (82.3%, 53.1 %, 67.7%) of the studied sample had knowledge about (detect place of delivery, identifying the qualified birth attendant who will deliver the baby, and provide transportation for use at any time during labor) to be component of birth preparedness respectively, while in pre-program ere (44.8%, 29.2%, 33.3%) respectively. There was a highly statistically significant difference between all birth preparedness knowledge items with pre / post program ($p \leq 0.01^{**}$)

Figure (1): Shows that according to total knowledge scores (46.88%, 38.54%, 36.46%, 41.83%, 45.83%) respectively (during pregnancy, labor, post-partum "mother & newborn", knowledge of women about birth preparedness) the women had sufficient total knowledge at pre-program phases compared with post program (81.25%, 90.36%, 80.21%, 78.13%, 100%) had sufficient knowledge.

Figure (2): Reveals that; the total practice of the studied women was improved from (44.79%) in pre- program as compared with (98.96%) in post program. the total attitude of the studied women was improved from (55.21%) in pre- program as compared with (95.83%) in post program.

Table (3) revels that; there is no statistical significant relation between knowledge and socio-demographic characteristics among Studied Sample.

Table (4) revels that; there is a strongly statistically significant relation between the age of women and their practice at $p \leq 0.01$.

Table (5): revels that knowle is strongly positively correlated with of danger signs during pregnancy and their practices of h preparedness preprogram. There is a highly statistically significant positive correlation between knowledge of woman about birth preparedness and their practice d attitude pre and post program. There is statistically significant positive correlation between total knowledge of woman and their attitude posttest.

Table (1): Studied sample socio-demographic characteristics (N=96)

socio-demographic characteristics	Number	Percentage
Age		
20 – 24	**55**	**57.29**
25 – 29	36	37.50
30 or more	5	5.21
Mean ± SD	**24.68±3.85**	
Residence		
Rural	**62**	**64.58**
Urban	34	35.42
Level of education		
Basic	30	31.25
Secondary	47	48.96
University+	19	19.79
Wife's occupation		
Employed	6	6.25
Free-lancer	14	14.58
Housewife	**76**	**79.17**
Husband's occupation		
Employed	27	28.13
Free-lancer	**64**	**66.67**
Not working	5	5.21
Monthly income from the woman's point of view		
Sufficient	**58**	**60.42**
Sufficient & save	29	30.21

Insufficient	9	9.38

Table (2): Distribution of the studied sample regarding their knowledge about birth preparedness. (N=96) (Pre-test, post-test)

knowledge about birth preparedness	PRE			POST			X^2 (Sig.)
	Yes (%)	No (%)	Don't know (%)	Yes (%)	No (%)	Don't know (%)	
Detect place of delivery	43 (**44.8%**)	44 (45.8%)	9 (9.4%)	79 (**82.3%**)	15 (15.6%)	2 (2.1%)	29.332 (0.000**)
Savings money for labor or emergency	79 (82.3%)	14 (14.6%)	3 (3.1%)	89 (92.7%)	5 (5.2%)	2 (2.1%)	5.079 (0.083) FE
identifying the qualified birth attendant who will deliver the baby	28 (**29.2%**)	64 (66.7%)	4 (4.2%)	51 (**53.1%**)	42 (43.8%)	3 (3.1%)	11.466 (0.003**) FE
A means of transportation must be provided for use at any time during labor	32 (**33.3%**)	56 (58.3%)	8 (8.3%)	65 (**67.7%**)	27 (28.1%)	4 (4.2%)	22.693 (0.000**)

X^2 Chi square test

FE Expected cell count less than 5, Fisher's Exact test was used.

** Highly statistically significant at p≤0.01

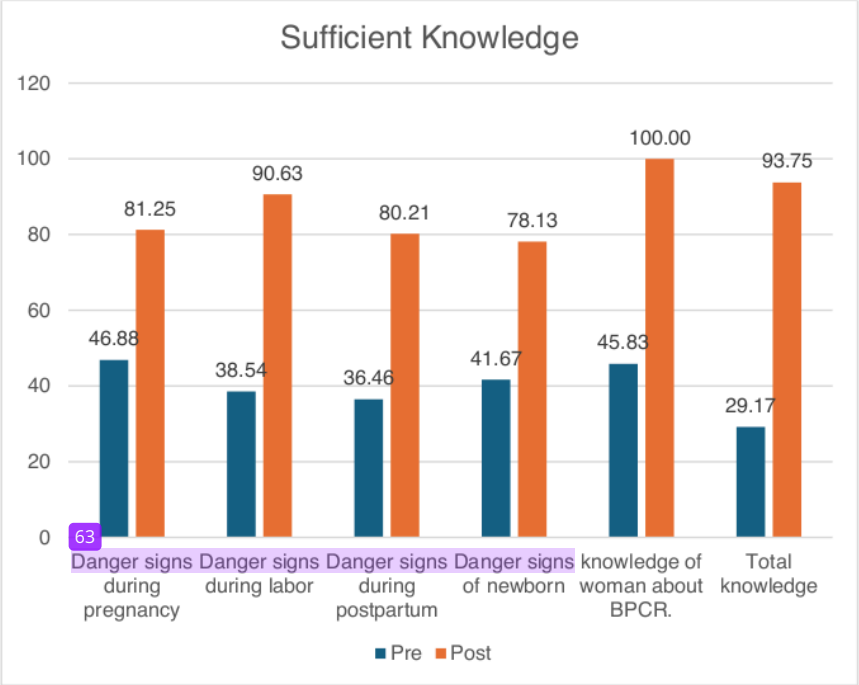

Figure (1): *Distribution of the studied women according to their total knowledge (during pregnancy, labor, post-partum (mother & newborn), and knowledge of women about birth preparedness) with pre and post the health educational program.*

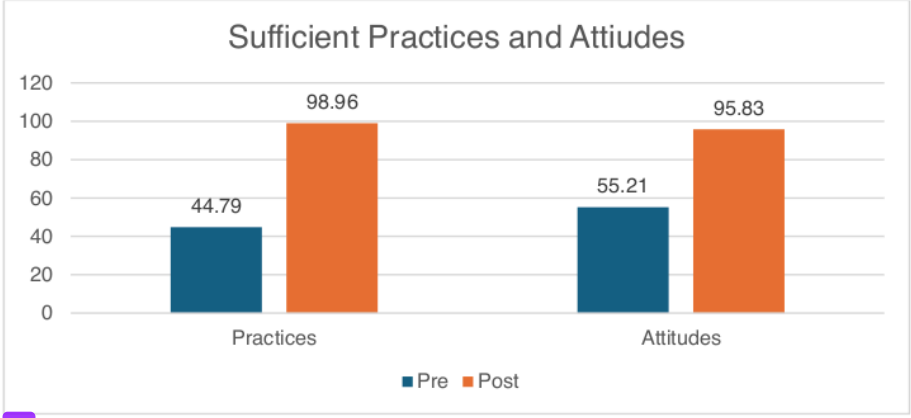

Figure (2): *Distribution of the studied women according to their total practice and attitude with pre and post the health educational program.*

Table (3) Relation between Knowledge and Socio-demographic Characteristics among Studied Sample (N=96)

Socio-demographic Characteristics	Knowledge				X^2
	Insufficient		Sufficient		
	No.	%	No.	%	Sig.
Age					
20 – 24	38	55.88	17	60.71	0.875 FE
25 – 29	27	39.71	9	32.14	0.649
30 or more	3	4.41	2	7.14	
Residence					
Rural	48	70.59	14	50.00	3.675
Urban	20	29.41	14	50.00	0.064
Education					
Basic	18	26.47	12	42.86	2.534
Secondary	36	52.94	11	39.29	0.280
University+	14	20.59	5	17.86	
Wife's occupation					
Employed	5	7.35	1	3.57	0.818 FE
Self-employed	11	16.18	3	10.71	0.632
Housewife	52	76.47	24	85.71	
Husband's occupation					
Employed	17	25.00	10	35.71	1.899 FE
Self-employed	48	70.59	16	57.14	0.458
Not working	3	4.41	2	7.14	
Monthly income					
Sufficient	45	66.18	13	46.43	4.691 FE

Sufficient & save	16	23.53	13	46.43	0.094
Insufficient	7	10.29	2	7.14	

X^2 Chi square test

FE Expected cell count less than 5, Fisher's Exact test was used.

Table (4): Relation between Practices and Socio-demographic Characteristics among Studied Sample (N=96)

Socio-demographic Characteristics	Practices				X^2
	Insufficient		Sufficient		
	No.	%	No.	%	Sig.
Age					
20 – 24	24	45.28	31	72.09	8.717 FE
25 – 29	24	45.28	12	27.91	0.008**
30 or more	5	9.43	0	0.00	
Residence					
Rural	34	64.15	28	65.12	0.010
Urban	19	35.85	15	34.88	1.000
Education					
Basic	17	32.08	13	30.23	0.159
Secondary	25	47.17	22	51.16	0.924
University+	11	20.75	8	18.60	
Wife's occupation					
Employed	2	3.77	4	9.30	2.511 FE
Self-employed	6	11.32	8	18.60	0.319
Housewife	45	84.91	31	72.09	
Husband's occupation					
Employed	13	24.53	14	32.56	4.471 FE
Self-employed	35	66.04	29	67.44	0.100
Not working	5	9.43	0	0.00	
Monthly income					
Sufficient	35	66.04	23	53.49	5.776 FE
Sufficient & save	11	20.75	18	41.86	0.053
Insufficient	7	13.21	2	4.65	

X^2 Chi square test FE Expected cell count less than 5, Fisher's Exact test was used.

** Highly statistically significant at p≤0.01

Table (5): Correlation between Knowledge, Practices and Attitudes among Studied Sample Pre and post-program (N=96)

Knowledge	Pre- program				Post program			
	Practices		Attitudes		Practices		Attitudes	
	r	Sig.	r	Sig.	r	Sig.	r	Sig.
Danger signs during pregnancy	0.259	0.011*	0.150	0.144	0.141	0.169	0.262	0.010*
Danger signs during labor	0.068	0.510	-0.121	0.241	0.081	0.432	0.082	0.427
Danger signs during postpartum	-0.124	0.227	-0.176	0.087	-0.033	0.752	-0.097	0.350
Danger signs of newborn	-0.156	0.129	-0.038	0.710	0.032	0.757	0.002	0.983
Knowledge of woman about BP.	0.487	0.000**	0.336	0.001**	0.266	0.009**	0.260	0.011*
Total knowledge	0.191	0.062	0.061	0.558	0.182	0.076	0.232	0.023*

r Pearson Correlation Coefficient test * Statistically significant at p≤0.05 ** Highly statistically significant at p≤0.01

Discussion

According to the women's socio-demographic information, the results of the current investigation demonstrated that over half of the women aged from 20<24 years old and more one third their age ranged from 25< 29 with mean±SD (24.68±3.85).

These result was consistent with **Tony-Igwe et al., (2024)** in London who studied "Knowledge, Attitude and Practice of Birth Preparedness and Complication Readiness among women attending Antenatal Clinic", who reported that less than two thirds age were between 21 and 30 years old.

In terms of where they lived, the results of the current investigation demonstrated that less than two-thirds of the women under examination were from rural areas.

According to the researcher, these results can be the result of low socioeconomic position because less than two thirds of studied women had sufficient only monthly income and there is no chance for any savings, and in rural areas there are decreased resources, there are low educational levels and a shortage of health services.

These findings concurred with **Komugisha et al., (2024)** in Uganda who studied "Birth preparedness and complication readiness among pregnant women in a population-based cohort in Eastern Uganda." and reported that over two-thirds of their study sample lived in rural areas. These agreements in the results of different studies may be due to that most of the women in the government were comes from rural areas.

These outcomes were consistent with those of **Demsash et al., (2024) in Ethiopia** who studied "Birth preparedness and pregnancy complication readiness and associated factors among pregnant women", and reported that more than three quarters of their study sample lived in rural areas.

Regarding educational level, the current study presented that fewer than half of the women had completed secondary school.

According to the researcher, these findings might be the effect of that in rural areas there is low educational levels among females and early marriage interrupt or end a girl's education.

These finding are in consist with the findings of **Maqbool, et al., (2024) in Pakistan** who studied "Birth Preparedness and Complication Readiness among Women of Child Bearing Age in Peri Urban Areas of Lahore", and reported that more than one-third of their study sample had attained secondary education.

These results also agreed with **Adetona et al., (2024) in Nigeria** who studied "Comparative assessment of birth preparedness and complication readiness among couples in rural and urban communities of Ekiti State, Southwestern Nigeria", and reported more than half of their study sample were secondary educated in rural area but in urban area less than two thirds were highly educated.

According to the occupation of the woman and her husband, more over three-quarters of the women in the current study were housewives, while nearly two-thirds of their husbands worked as freelancers.

One possible explanation for these results is that most Egyptian women want to remain housewives and that people in rural areas encourage early marriage and forbid women from working, as well as the limited opportunities for government jobs.

These outcomes are consistent with those of **Wanyonyi et al., (2024) in Kenya** who studied "Influence of Integrating Childbirth Preparation Program on Birth Outcomes among Pregnant Women in Western Kenya", and reported that more than half of their studied women were not employed and their husbands were freelancer.

Regarding monthly income from the woman's point of view, according to the present survey, less than two-thirds of the women in the study made enough money each month; which is in consisting with the findings of the study conducted by **El-Sharkawy & Araby (2020)** in Egypt who assessed "Effectiveness of self-instructional module on knowledge and remedial practices regarding selected minor ailments among

primigravida." and mentioned that over half earned a respectable living.

Enhancing knowledge about birth preparedness helps expectant women and their families feel more confident, make informed decisions, and reduce the risks associated with labor and delivery.

Regarding women's knowledge about component of birth preparedness the current study showed that with pre- program most of the studied women hadn't prepare the place of delivery, identify skilled birth attendant that carry out delivery, and provide transportation which improved after the end of the program. However, the majority of them had saved money for labor or emergency.

From the investigator's point of view, these results may be due to the difference cultures, and also the women who lived in rural areas saw the identified skilled person and identified place for birth as an additional fun thing.

In the light of these findings, **Tara & Singh (2024) in India,** who studied "Effectiveness of Awareness Training on Birth Preparedness and Complication Readiness among Community Health Workers of New Delhi, India" disagreed with these result as they found that more than two thirds of participants reported saving money, and arranged transportation, and less than two thirds reported preparing a skilled birth attendant.

Also these result is in consistent with **Radicha & Kusumawardani (2024) in Indonesia,** who studied "The impact of birth preparedness and complication readiness (BPCR) on maternal outcomes among postpartum mothers", and found that the majority of women decided place of delivery followed by less than three quarters had identified the skilled birth attendance followed by almost one half arranged their transport.

Regarding total scores of knowledge, the current study illustrated that, after the end of the program, there was an improvement in studied women's total knowledge about danger signs during (pregnancy, labor, postpartum for woman and newborn, and knowledge of birth preparedness). For example, the majority of the women had sufficient knowledge about danger signs as compared to pre-program. There was a highly statistically significant improvement in the mean of total scores of knowledge between post-program and preprogram.

These results are similar to **Elsayed Ahmed et al., (2023) in Egypt.** who studied " Effect of Antenatal Educational Package on Primiparous Women's Knowledge and Practices for Prevention of Selected Aspects Postpartum Complications", and supported our results and found that the women's total knowledge increased and improved after intervention as, minority of women had good knowledge before the intervention but after the program, more than three quarters of them had good knowledge, and there was a statistically significant improvement in the mean scores of knowledge between pre-program and post program.

Also, **Lee et al., (2024)** in Uganda who studied "Effectiveness of a Community Health Worker-Led Education Intervention on Knowledge, Attitude, and Antenatal Care Attendance of Pregnant Women in Eastern Uganda: A Quasi- Experimental Study", and found that after the educational program, there was a highly significant improvement in all knowledge items.

The results of the current investigation showed that the total practice and attitude of the studied women was improved, as in the preprogram less than half and over half of the women had a sufficient practice and attitude respectively as compared to most of women in the post program. There was a highly statistically significant between pre/post-intervention.

From the investigator's point of view, variations in women's' practices and attitudes toward birth preparedness may be attributed to differences in their knowledge and information about birth preparedness. In addition to the belief that preparedness is unnecessary, there are other factors such as the level of education and low income. But after the educational program their attitude improved to positive as they were educated about importance of birth preparedness.

A study conducted by **Radicha & Kusumawardani (2024)** in Indonesia who studied "The impact of birth preparedness and complication readiness (BPCR) on maternal outcomes among postpartum mothers" supported the current results and demonstrated that there was an improvement of practice and women's attitude toward birth preparedness over the course of the study after educational intervention.

Furthermore, **Pattipeilohy et al., (2023),** who studied the "Exploration of The Birth Planning and Complications Prevention Program Implementation", found that the good practice and positive attitude toward birth preparedness increased and there was a significant improvement in the post-test practice and attitude score, which is statistically highly significant.

The current study revealed that there was no statistical significant relation between knowledge and socio-demographic characteristics among studied sample. These results were supported by **Priya et al., (2024) in India,** whose study were about "An experimental study to assess the effectiveness of video-assisted childbirth education programme on knowledge regarding childbirth among primigravida mothers attending antenatal outpatient department of a selected hospital in Bhopal" They discovered that there was a significant correlation between knowledge level and educational attainment at the 0.05 level of significance ($F = 7.330$, $df = 1$, $P = .008$).

Additionally, these results were comparable to those of the study that was carried out by **Lawai et al., (2024),** who studied "effectiveness of educational package on knowledge regarding the activities to be performed during labor process among antenatal mothers", they found that there was no significant association between knowledge and other demographic variables.

Regarding the correlation between knowledge, practice, and attitudes, among the studied sample, the current study demonstrated that there was a positive correlation between knowledge of pregnancy danger signs and their practices of birth preparedness preprogram. There was a highly statistically significant positive correlation between knowledge of woman about birth preparedness and their practice and attitude pre and post program.

These result was in agreement with **Yuvashree et al., (2022)** in India, who investigated "Effectiveness of a Nurse-led Birth Preparedness Package on Knowledge, Childbirth Attitude and Self-Efficacy among Primigravida Women", and found that there was a statistically significant correlation between total knowledge, attitude, and practice at $p<0.001$ level.

Conclusion

It is possible to draw the following conclusions from the results of the current study:

The current study results concluded that, after the end of the program, there was a highly statistically significant improvement in medication adherence, medication knowledge and attitude of elderly patients with chronic diseases toward their medication as compared to preprogram.

Additionally, there was a highly statistically significant positive correlation between total knowledge and (total attitude and total medication adherence) of studied elderly pre/post program, and there was a highly statistically significant positive strong correlation between total medication adherence and total scores of attitude toward medication of the studied elderly pre and post program.

Also there was a highly statistically significant relation ($p\leq0.01$) between total medication adherence and gender, age, social status, educational level and income of studied elderly, while not significant with other items.

Recommendation

Based on the current study's findings the following recommendations were proposed:

- It is advised that mother and child health care interventions include educating women, emphasizing birth preparedness plans when women visit the health facility, and distributing

health services fairly and equally throughout the regions.

- Providing a brochure in hospitals and health care units, especially for primigravida women, that contains obstetric and neonatal warning signs and how to deal with each sign, and information about the three delays and how to deal with and/or avoid them. Furthermore, birth preparedness research would be necessary.

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