

Perception of Pregnant Women Regarding Self Care Measures during Postpartum Period

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Abstract:

Postnatal care is one of the most important maternal health care for prevention of maternal impairment and disabilities. So, there is an urgent need to increase women's knowledge regarding self-care measures during postpartum period. **Aim:** The present study aimed to assess the perception of pregnant women regarding self-care measures during postpartum period. **Subjects and method: - Design:** A descriptive study design was used. **Setting:** The study was conducted at the antepartum unit in obstetric and gynecological department at Tanta University Hospital. **Subjects:** A purposive sample of 250 pregnant women was included in the study. **Tools:** three tools were used for collection of data. **Tool (I): Structured interview schedule:** It included: **Part (a):** Socio-demographic characteristics and **part (b):** Obstetric history. **Tool (II):** Women's knowledge regarding self-care measures during postpartum period. **Tool (III):** Women's attitude regarding self-care measures during postpartum period. **Results:** Slightly more than one half of women (51.6%) had poor level of knowledge, slightly less than one third of women (32.4%) had fair level of knowledge, and (16%) had good level of knowledge regarding self-care measures during postpartum period. Additionally, the majority of women (93.2%) had positive attitudes regarding self-care measures during postpartum period. **Conclusion:** There was poor knowledge, while there was positive attitudes regarding self-care measures during postpartum period among pregnant women. **Recommendations:** Planning and developing antenatal classes for all pregnant women especially during the last trimester to improve their perception, and increase their awareness and enhance their practice regarding routine self-care during postnatal period.

Keywords: Postpartum period, Self-care, Knowledge, Perception, Attitude.

Introduction

Postpartum period is defined as the period beginning immediately after delivery during which the woman's body in general and the genital organs in particular return to the pre-pregnant state. This period is usually considered to be 6 weeks in duration. Much attention is given to women's healthcare during pregnancy and childbirth, while this

is not extended after childbirth. Therefore, the postpartum period is considered a critical transitional time for the woman, her newborn, and her family on physiologic and psychological levels.⁽¹⁻⁵⁾

Postpartum period is subdivided into three categories: the immediate postpartum period, which covers the first 24 hours; the early postpartum period or first week; and

late postpartum period, which refers to period from the second week until 6 weeks after delivery.^(6,7) Maternal and neonatal mortality rate is still high, because many mothers did not seek proper care in the health care facilities when they were exposed to any complication during pregnancy, childbirth and postpartum period.⁽⁸⁾

Maternal deaths that occur during the intrapartum and partum period are due to directly preventable or treatable causes such as haemorrhage, eclampsia, and sepsis. Provision of emergency obstetric care is considered the key for reducing maternal mortality worldwide.^(8,9,10) Goal 5 of the Millennium Development Goals (MDGs) aimed to reduce maternal mortality through improving maternal health.⁽¹¹⁾ What the midwifery nurse provide to the mother and her newborn immediately following delivery to the end of puerperium is very important to maintain and promote the health of the postpartum woman and the newborn, as well as to foster an environment that offers help and support for a variety of social and physical needs.⁽¹²⁻¹⁵⁾ Utilization of the majority of healthcare services is significantly ignored during postpartum period due to lack of perception of postpartum women regarding the services as well as regarding self-care measures during postpartum period. Furthermore, health care providers should give the postpartum women the correct information in the appropriate way so, they can recognize why they need to utilize the services.^(16,17) If pregnant women are knowledgeable about all aspects of postnatal care in general and self-care in particular, they can effectively manage their challenging postpartum period.^(18,19)

Maternal self-care is broadly defined as the

mother's willingness and ability to look after her physical and emotional needs. The practical examples of self-care in motherhood include proper nourishment, taking care of oneself when needed, being able to care for the infant, willingness to delegate, and being able to set boundaries.⁽²⁰⁻²³⁾ Furthermore, one of the most essential measures to reduce maternal mortality and disability is increasing women's awareness of the importance of self-care during this period.^(24,25) Self-care elements during postpartum period include personal hygiene, perineal care, breast care, wound care, episiotomy care, checking the fundus, lochia assessment, nutrition, exercise, sleep, sexuality, early ambulation, technique of breastfeeding, immunization of newborn, baby cord dressing, as well as regarding danger signs during postpartum period.^(26,27)

The role of the postpartum nurse in the early postpartum period is to assist the new postpartum woman in returning to her pre-pregnant state without suffering from any complications, and to give her a solid knowledge base of postpartum care.^(26,28) The desired goal is that the mother feels secure in her ability to care for herself and her newborn and to be ready to return to her normal role in the community. To achieve this, the nurse should assist the woman in learning coping mechanisms and guide her about the expected physiological, emotional, and social changes that occur after delivery. The nurse also plays an important role in facilitating social support and maternal-fetal attachment in the postpartum period to improve postpartum maternal adaptation.⁽²⁹⁾

One of the most important aspects in reducing adverse maternal and neonatal outcomes is the early provision of

postpartum care services. These services have an impact on the mother's physical and social well-being, which in turn has a positive impact on the infant's health. (30,31) Therefore, it is very important to assess the perception of pregnant women regarding self-care measures during postpartum period.

The aim of this study was to

Assess perception of pregnant women regarding self-care measures during postpartum period.

Research question

What is the perception of pregnant women regarding self-care measures during postpartum period?

Subjects and method

Study Design

A descriptive study design was used.

Setting

The study was carried out at the antepartum unit of obstetrics and gynecological department at Tanta University Hospital.

Subjects

A purposive sample of 250 pregnant women was selected from previously mentioned study settings according to the following inclusion criteria:

- Age range between 20-35 years.
- Pregnant women at the last trimester of pregnancy.
- Normal current pregnancy course that free from any medical or obstetric complications.
- Willing to participate in the study.

Tools of data collection

To achieve the aim of this study, the following three tools were used for data collection

Tool (I) Structured interview schedule

This tool was developed by the researcher after review of relevant literatures to collect

basic data about the study subjects. It included two parts as follows:

Part (1) Socio-demographic characteristics of the subjects

This part has assessed the socio-demographic data of the women such as; name, age, educational level, occupation, residence and family income.

Part (2) Obstetric history

This part assessed the obstetric history of the pregnant women such as; gravidity, parity, abortion, presence of previous obstetrical complications during deliveries and postpartum period and attendance of antenatal care classes regarding self-care measures during postpartum period.

Tool (II) Women's knowledge regarding self-care measures during postpartum period.

This tool was developed by the researcher after reviewing recent related literatures (14,22) and consisted of two parts as follows:

part (1): It was used to assess level of pregnant women's knowledge regarding postpartum period such as; definition, duration, physiological and psychological changes, importance of proper nutrition after birth, breastfeeding technique, immunization of newborn, warning signs, minor discomforts during postpartum period, post-partum visits schedule and also family planning methods.

Part (2): It was used to assess the women's knowledge about self-care practices such as; importance of postpartum self-care, personal hygiene and care (breast care, perineal care, wound care and episiotomy care), self lochia assessment, early ambulation, exercise, rest and adequate sleep, sexual life after birth, infection prevention and psychological support.

The scoring system of knowledge regarding self-care measures during postpartum period was as follow:

- Correct and complete answer was given score (2)
- Correct and incomplete answer was given score (1)
- Incorrect answer or didn't know was given score (0)

The total score level was calculated as follows:

- High level of knowledge $\geq 75\%$ of the total score.
- Moderate level of knowledge 50 - $< 75\%$ of the total score.
- Low level of knowledge $< 50\%$ of the total score.

Tool (III) Women's attitudes regarding self-care measures during postpartum period.

A likert scale was adapted from Chembe (2017) ⁽¹⁴⁾ to assess mothers' attitude regarding self-care measures during postpartum period. It consisted of 15 statements. The total score of women's attitudes ranged from (0-30).

The scoring system of attitude regarding self-care during post-partum period was as follows:

Each statement was rated by using 3-point likert scale, where:

- Agree answer was given score (2).
- Uncertain answer was given score (1).
- Disagree or didn't know answer was given score zero (0).

There was only one statement (No: 5) which had a different rate as follows:

- Agree answer was given score (0).
- Uncertain answer was given score (1).
- Disagree or didn't know answer was given score zero (2).

The total score of women's attitudes was calculated as follows:

- Positive attitude $\geq 60\%$ (18-30 degree) of the total score.
- Negative attitude $< 60\%$ (0- < 18) of the total score.

Method

The study was implemented according to the following steps-

1. Administrative design:

Written approvals: official letter clarifying the purpose of the study was obtained from the Faculty of Nursing and was submitted to the responsible authorities of the selected setting to obtain their approval and cooperation for carrying out the study.

2. Operational Design

The study was implemented according to the following steps:

A. Ethical considerations:

Informed consent was obtained from women who accepted to participate in the study after explaining the purpose of the study, confidentiality of information was maintained, benefits and right of women to withdraw from the study at any time if desired. The nature of the study did not cause any harm and/or pain for the subjects.

B. Tool development

- a. Tools (I and II) were developed by the researcher after reviewing recent literature. ^(14,22)
- b. Tool (III) was adapted from Chembe (2017). ^[14]
- c. The study tools were translated into Arabic language and then tested for construct and content validity by five experts in the field of Obstetrics and Gynecology nursing before conducting the study. The tools were also tested for reliability by using statistical analysis.

C. pilot study

After development of the tools, a pilot study was carried out on 10% of the sample (25) pregnant women from the previously mentioned setting. This pilot study was conducted before the actual data collection. Data obtained from the pilot study were excluded from the current study sample.

The purposes of the pilot study were to:

- Ascertain the feasibility and applicability of the developed tools.
- Detect any problems peculiar to clarity of the statements that might interfere with the process of data collection.

The results of the pilot study:

- The pilot study revealed that the statements of the tools were clear and relevant.

D. Actual study (field work)

- Data was collected during the morning shifts at antepartum unit of obstetrics and gynecological department from 9:00 a.m. to 12.00 p.m. The researcher interviewed with 4 subjects per day three times per week until the predetermined sample size was collected.
- Data collection was conducted in a period of six months ranged from the beginning of October 2021 to the end of March 2022.
- The structured interview schedule was applied individually for each woman at the antepartum unit.
- All subjects who had the inclusion criteria at the time of data collection were included in the study. Data were collected within 45 minutes.
- Data were collected by the researcher using the previously mentioned study tools, **Tool I:** used to collect data about socio-demographic characteristic and obstetric history of the women, **Tool II:** used to assess women's knowledge regarding self-care measures during postpartum period,

Tool III: used to assess women's attitude regarding self-care measures during postpartum period.

3. Statistical analysis:

The collected data were organized, tabulated and statistically analyzed using SPSS software (Statistical Package for Social Sciences, version 19, SPSS (Armonk, Ny, IBM corp). For quantitative data, the range, mean and standard deviation were calculated. For qualitative data, which describe a categorical set of data frequency, percentage or proportion of each category was used, comparison between two groups and more was done using Chi-square test (χ^2).

Correlation between variables was evaluated using Pearson's correlation coefficient (r).

Significance was adopted at $p < 0.05$ for interpretation of results of tests of significance.

Results

Table (1): Shows distribution of the studied pregnant women according to their socio-demographic characteristics. It is noticed that slightly more than one half of women (52.4%) were more than 25 to 35 years old with a mean age mean \pm SD (26.06 \pm 3.95). Slightly less than one third of women (32.0%) had a university educational level. Concerning occupation, more than two thirds of women (68.8%) were housewives. Slightly more than three quarters of women (76.8%) were from urban areas. Also it is founded that slightly more than three fifth (60.8%) had insufficient family income.

Table (2): Shows distribution of the studied pregnant women according to their Obstetric history. It is noticed that slightly more than one third (33.6%) were gravida two, slightly more than one quarter of women (25.6%) were nullipara and slightly

less than one third of women (33.2%) experienced one previous delivery and slightly more than two fifths of them had cesarean section. Additionally more than four fifths of women (83.2%) hadn't any disease before pregnancy and (16.8%) of them suffered from diseases before pregnancy and less than three quarters (73.8%) of those women who had diseases had anemia before pregnancy. Concerning antenatal care visits; the table presents that (84.8%, 88.4% respectively) of women had regular antenatal care visits during the previous and the current pregnancy. It is noticed that the vast majority (92.1%) of women who didn't attend to antenatal visit during previous pregnancies were due to insufficient income.

It is also noticed that only (7.2%) of women followed up their current pregnancy in MCH center. As regard to the time of initial antenatal visit, it noticed that (0.9%) of the studied pregnant women seek the initial antenatal visit at the third trimester. The table also illustrate that slightly less than four fifths of women (79.6%) attended today for the reason of recurrent follow up the pregnancy. Regarding the presence of complications during the previous postpartum period, it is noticed that (0.8%) of the studied pregnant women suffered from bleeding.

Figure (1): Shows distribution of the studied pregnant women according to their total score level of knowledge regarding post-partum period and self-care measures during postpartum period. Regarding the total knowledge level about postpartum period, the figure illustrates that less than one third of the studied pregnant women (30%) had a low level of knowledge, slightly more than two fifths (41.6%) had a moderate level of knowledge, and less than

one third (28.4%) had a high level of knowledge. Regarding the total knowledge level about self-care measures during postpartum period, it is observed that slightly more than one half of the studied pregnant women (51.6%) had a low level of knowledge, slightly less than one third (32.4%) had a moderate level of knowledge, and less than one fifth of women (16%) had a high level of knowledge.

Figure (2): Shows the distribution of the studied pregnant women according to their total attitude regarding self-care measures during postpartum period. It is noticed that only (6.8%) of the studied pregnant women had a negative attitude regarding self-care measures during postpartum period, while the vast majority of them (93.2%) had a positive attitude regarding self-care measures during postpartum period.

Table (3): Shows the relationship between total knowledge level of the studied pregnant women and their socio-demographic characteristics. It revealed that there was a highly significant association between total knowledge level of the studied pregnant women and their educational level ($p=0.0001^*$) and between their occupation ($p=0.011^*$). The table also illustrates that there was no significant association between total knowledge level of the studied pregnant women and their age in years, work sector, residence and family income ($p>0.05$).

Table (4): Shows correlation between total attitude, total knowledge, and age in years of the studied pregnant women. It is noticed that there was a significant positive correlation between knowledge scores about self-care measures during postpartum period and total attitude ($p=0.016^*$), and between knowledge scores about

postpartum period and knowledge scores about self-care measures during postpartum period ($P=0.0001^*$). It is noticed that there was no significant correlation between total attitudes, age years, and knowledge about postpartum period, and total knowledge ($p>0.05$). The table also illustrates that there was no significant correlation between age in years, knowledge about postpartum period, knowledge about self-care measures during postpartum period, and total knowledge ($p>0.05$).

Table (1): Distribution of the studied pregnant women according to their socio-demographic characteristics (n= 250).

Socio-demographic data	The studied pregnant women (n=250)	
	N	%
•Age years:		
16-25	119	47.6
>25-35	131	52.4
Range	16-35	
Mean±SD	26.06±3.95	
•Women education level:		
Illiterate	44	17.6
Read and write	32	12.8
Primary/preparatory	46	18.4
Secondary	48	19.2
University	80	32.0
•Women occupation:		
House wife	172	68.8
Working	78	31.2
-If working, sector of work		
Governmental	65	83.3
Private	13	16.7
•Residence:		
Rural	58	23.2
Urban	192	76.8
•Family income:		
Enough	98	39.2
Not enough	152	60.8

Table (2): Distribution of the studied pregnant women according to their Obstetric history (n= 250).

Obstetric history	The studied pregnant women (n=250)	
	N	%
●Gravidity:		
One	64	25.6
Two	84	33.6
Three	66	26.4
More than three	36	14.4
●Parity:		
Nullipara	64	25.6
One	83	33.2
Two	72	28.8
Three	23	9.2
More than three	8	3.2
●Type of delivery		
Nullipara	64	25.6
Normal vaginal delivery with episiotomy	24	9.6
Normal vaginal delivery without episiotomy	54	21.6
Cesarean section	108	43.2
●Suffered from any disease before pregnancy		
No	208	83.2
Yes	42	16.8
-If yes, type of disease:	(n=42)	
Hypertension	4	9.5
Diabetes	6	14.3
Anemia	31	73.8
Heart diseases	1	2.4
● Follow up visits during the previous pregnancy		
No	38	15.2
Yes	212	84.8
-If no, mention the cause:		
Insufficient income	35	92.1
Refusal of mother-in-law	3	7.9
● Follow up visits regularly during the current pregnancy		
No	29	11.6
Yes	221	88.4
-If yes, the place of pregnancy follow up:		
Governmental hospital	102	46.2
Private hospital/clinic	103	46.6
MCH	16	7.2
-If no, the reasons:		
Presence of social problems	4	13.8
Insufficient income	25	86.2
●When began the current pregnancy follow up visits	(n=221)	
During the first trimester	170	76.9
During the second trimester	49	22.2
During the third trimester	2	0.9

Table (2) Continue: Distribution of the studied pregnant women according to their Obstetric history (n= 250).

Obstetric history	The studied pregnant women(n=250)	
	N	%
The number of current pregnancy follow up visits:	(n=221)	
Once	0	0
Twice	66	29.9
Three	40	18.1
Four	37	16.7
More than four	78	35.3
Reason of attending today:		
Recurrent follow up the pregnancy.	199	79.6
First registration of data.	25	10.0
Discomforts during the current pregnancy.	26	10.4
Complication during the previous pregnancy for woman:		
No	237	94.8
Yes	13	5.2
- For woman:		
Anemia	7	53.8
Hypertension	5	38.5
Hyperglycemia	1	7.7
Complication during the previous pregnancy for the fetus:		
No	250	100
Yes	0	0
Complication during the previous delivery for woman or the fetus:		
No	250	100
Complication during the previous postpartum period for the woman:		
No	248	99.2
Yes	2	0.8
- For woman:		
Bleeding	2	0.8
Complication during the previous postpartum period for the baby:		
No	250	100
Yes	0	0

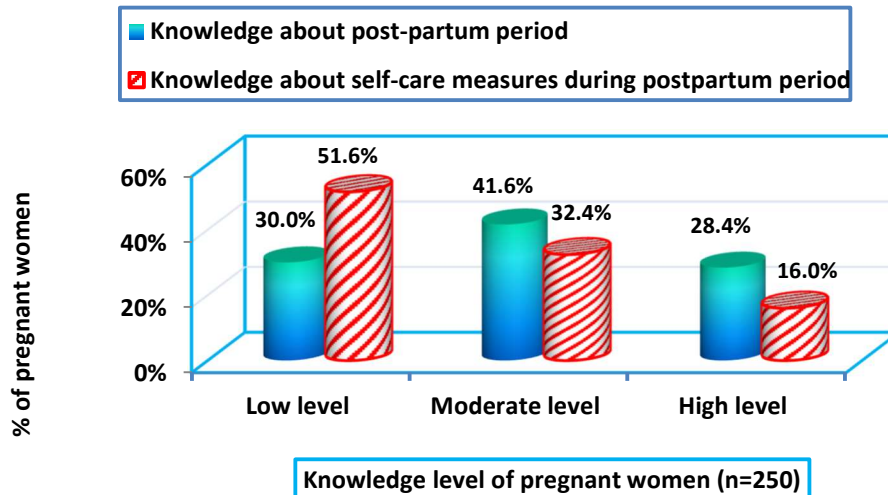


Figure (1): Distribution of the studied pregnant women according to their total score level of knowledge regarding post-partum period and self-care measures during postpartum period (n= 250).

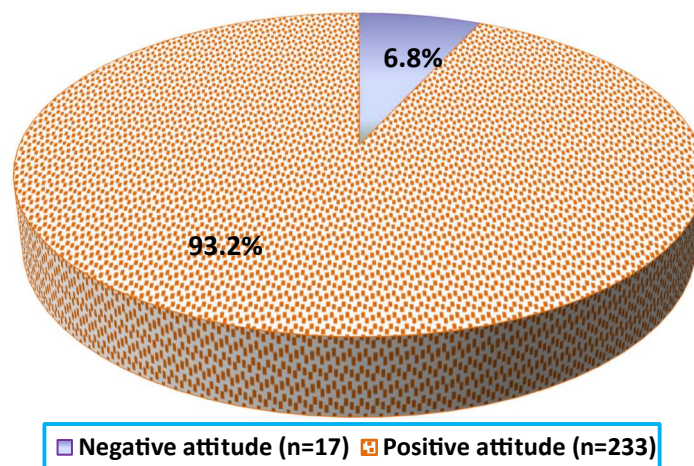


Figure (2): Distribution of the studied pregnant women according to their total attitude regarding self-care measures during postpartum period (n= 250).

Table (3): Relationship between total knowledge level of the studied pregnant women regarding self-care measures during postpartum period and their socio-demographic characteristics (n= 250).

Socio-demographic characteristics	Total knowledge level of the studied pregnant women (n=250)								χ^2 P
	Low level (n=97)		Moderate level (n=109)		High level (n=44)		Total (n=250)		
	N	%	N	%	N	%	N	%	
•Age years:									
16-25	51	42.9	50	42.0	18	15.1	119	47.6	1.884
>25-35	46	35.1	59	45.0	26	19.8	131	52.4	0.390
•Women education level:									
Illiterate	22	50.0	15	34.1	7	15.9	44	17.6	29.276
Can read and write	15	46.9	16	50.0	1	3.1	32	12.8	0.0001*
Primary/preparatory	23	50.0	20	43.5	3	6.5	46	18.4	
Secondary	17	35.4	25	52.1	6	12.5	48	19.2	
University	20	25.0	33	41.2	27	33.8	80	32.0	
•Women occupation:									
House wife	72	41.9	78	45.3	22	12.8	172	68.8	8.962
Working	25	32.1	31	39.7	22	28.2	78	31.2	0.011*
-If working, sector of work									
Governmental	24	36.9	22	33.8	19	29.2	65	83.3	0.947
Private	1	7.7	9	69.2	3	23.1	13	16.7	0.330
•Residence:									
Rural	18	31.0	25	43.1	15	25.9	58	23.2	4.107
Urban	79	41.1	84	43.8	29	15.1	192	76.8	0.128
•Family income:									
Enough	45	45.9	39	39.8	14	14.3	98	39.2	3.646
Not enough	52	34.2	70	46.1	30	19.7	152	60.8	0.162

Table (4): Correlation between total attitude, total knowledge, and age in years of the studied pregnant women (n= 250).

Variables	The studied pregnant women (n=250)					
	Total attitude		Knowledge scores about postpartum period		Age in years	
	r	P	r	P	R	P
Age years	0.016	0.798	-	-	-	-
Knowledge scores about postpartum period	0.098	0.124	-	-	0.068	0.287
Knowledge scores about self-care measures during postpartum period	0.153	0.016*	0.705	0.0001*	0.101	0.111
Total knowledge scores	0.149	0.149	-	-	0.091	0.153

*Significant (P<0.05)

r=Correlation Coefficient

Discussion

Postpartum period is a critical physiological adaptation phase and therefore has a meaningful impact on the future of maternal and neonatal health. The women during this period exposed to much risk which may increase the morbidity and mortality rate. So, the woman needs more social, educational, and medical support to protect herself and her infant from many health problems.⁽³¹⁾

Systematic examination of the women and their infants as well as providing appropriate health advices to them during postpartum period will prevent impairments and disabilities resulting from childbirth.⁽²¹⁾ Maternal self-care is broadly defined as the woman's ability and willingness to take care of herself both physically and emotionally. Improper

perception and lack of appropriate care during postpartum period may result in death or disability, as well as missed opportunity to promote healthy behavior for both the women and their newborns. The essential dimension of initiating postpartum care is enhancing the perception, knowledge and attitude, in order to enable them to handle themselves and their infants during difficult situations.⁽³²⁾

As regards to the socio-demographic characteristics of the studied pregnant women, the current study revealed that slightly more than half of women were above 25 to 35 years old with mean \pm SD (26.06 \pm 3.95). This finding is in line with **Asgharnia M et al., (2015)**⁽³³⁾ who assessed woman's knowledge regarding postpartum complications and cares. They

illustrated that the mean age of the studied women was 26.5 years \pm 0.3 years. In addition, **Omran A et al., (2020)** ⁽³⁴⁾ implied that the age of women in their study ranged from 20 \leq 30 years with mean \pm SD (24.8 \pm 5.61) years. On the other hand, this finding is dissimilar to **Mohamed D et al., (2018)** ⁽³⁵⁾ who studied "Mother's personal care during postpartum period in Ain Shams University in Egypt". They reported that more than one half of the studied mothers aged between 20 – 24 years old.

According to the women educational level, the findings of the present study revealed that slightly less than one third of the studied pregnant women had a university education. This finding is in line with **Adam L (2015)** ⁽³⁶⁾ who implied that slightly more than one third of women had a university education in her study to assess mother's knowledge regarding postpartum self-care in National Ribat University Hospital. On the other hand, this finding is inconsistent with **Altuntuğ K et al., (2018)** ⁽³⁷⁾ who studied "Traditional practices of mothers in the postpartum period: Evidence from Turkey". They reported that more than three fifths of women read and write. The discrepancy between these results and the results of the present study may be attributed to difference in the setting and cultural profile.

As regards to the women occupation, the findings of the present study revealed that more than two thirds were housewives. This result is in agreement with **Hamed A et al. (2018)** ⁽³⁸⁾ who conducted the study in Egypt about Egyptian status of continuum of care for maternal, newborn, and child health: Sohag Governorate as an example who stated that more than two

thirds of women were housewife. In addition, **Behal M et al., (2018)** ⁽³⁹⁾ assessed mother's knowledge towards pregnancy, childbirth, postpartum and essential new born care in District Solan and revealed that more than two thirds of women were housewife.

Regarding women residence, the present study declared that slightly more than three quarters were from urban areas. This result is in agreement with **Beraki G et al., (2020)** ⁽¹⁸⁾ who assessed knowledge on postnatal care among postpartum mothers during discharge in maternity hospitals. They mentioned that nearly three quarters of studied women were from urban areas. On the other hand, this finding is dissimilar to **Ganiga P et al., (2020)** ⁽⁴⁰⁾ who found that more than three fifths of women were from rural areas in their study on "awareness of postnatal mothers regarding self and newborn care in a tertiary care center in Mangalore, Karnataka". The discrepancy between these results and the results of the present study may be attributed to difference in the setting of these studies.

Concerning the family income; the present study revealed that slightly more than three fifths of the studied pregnant women had insufficient family income. This finding is in line with **Gaafar H et al., (2021)** ⁽⁴¹⁾ who assess the effect of young rural women's general characteristics on their knowledge and compliance with healthy practices during postpartum period. They mention that more than three fifths had insufficient family income.

Concerning women's reproductive history, the results of the present study clarified that around one quarter of the studied pregnant were nullipara and nearly one experienced one previous delivery. This

result doesn't match with **Nazari S et al., (2021)**⁽⁴²⁾ who found that three quarter of the studied women were nullipara and the rest of them were multipara in their study of postpartum care promotion based on maternal education needs. Additionally, **Moumita M et al., (2018)**⁽⁴³⁾ who assessed knowledge regarding post natal care among antenatal mothers reported that more than one half of women were multipara.

As regard to the type of delivery, the findings of the present study demonstrated that more than two fifths of the studied pregnant women had a cesarean section delivery. This finding is contradicted with **Adam L (2015)**⁽³⁶⁾ and **Mokhtar K et al., (2020)**⁽⁴⁴⁾ who found that about four fifths of the studied women had a normal vaginal delivery, and only one fifth had a cesarean section delivery. In addition, **Ahmadinezhad M et al., (2022)**⁽⁴⁵⁾ and **Milani H et al., (2017)**⁽⁴⁶⁾ found that more than three fifths of the studied women had a normal vaginal delivery in their study to assess postpartum home care and its effects on mothers' health.

In relation to attendance of antenatal care, the findings of the present study showed a good pattern of early antenatal care; as more than four fifths of the studied women attended for antenatal care regularly especially at first trimester and had more than four antenatal visits through the pregnancy course. The finding of the present study is in harmony with **Hassan S et al., (2019)**⁽⁴⁷⁾ and **Milani H et al., (2017)**⁽⁴⁶⁾ who stated that more than four fifths of the studied women received antenatal care during the first trimester and had more than four visits through the pregnancy course.

In addition, **Murthy N et al., (2016)**⁽⁴⁸⁾ assessed the utilization of antenatal care services by mothers attending immunization sessions at a primary health center in Mysore district, Karnataka, India, and reported that the majority of mothers received full antenatal care services and had more than four antenatal visits. From the researcher's point of view, these similarities may be due to the pregnancy is a critical period which need regular antenatal follow up to save maternal and neonatal health. On the other hand, this finding is inconsistent with **Hassan H et al., (2020)**⁽⁴⁹⁾ who mentioned that nearly two thirds of women didn't receive antenatal care. From the researcher's point of view, this dissimilarity may be due to the different socio demographic of the study subjects.

Regarding the place of antenatal care, it noticed that nearly one half of the studied pregnant women had antenatal care at private hospitals and the minority of them had antenatal care at MCH centers. This finding is contradicted with **Ahmadinezhad M et al., (2022)**⁽⁴⁵⁾ who mentioned that slightly less than three quarters of women had antenatal care at MCH center. From the researcher's point of view this may be due to lack of perception of the studied women regarding self-care measures during postpartum period, as well as lack of awareness about the health services provided by MCH centers and their attitudes and believes that the services provided in private clinics and hospitals are better than the services provided in MCH centers.

Concerning the total knowledge level about self-care measures during postpartum period, the results of the present study revealed that less than one

fifth of the studied pregnant women had a high level of knowledge. This finding is supported by **Joshi N et al., (2017)**⁽⁵⁰⁾ who found that the minority of the studied women had a high level of knowledge in their study to assess "the effectiveness of structured teaching program on knowledge about postnatal care among mothers".

Additionally, the findings of the present study are not in accordance with **Memchoubi K et al., (2017)**⁽⁵¹⁾ who illustrated that more than two thirds of women (70%) had a high level of knowledge. The findings of the present study are also contradicted with **Moumita M et al., (2018)**⁽⁴³⁾ and **Omran A et al., (2020)**⁽³⁵⁾ who found that the majority of women had high level of knowledge. From the researcher's point of view, the findings of the present study may be due to that more than one quarter of women were nullipara and may had insufficient health education, and/or counseling during the antenatal period. Consequently, they are in need for awareness programs to improve knowledge, attitude, and perception of the studied women on different aspects of postpartum self-care measures.

Concerning the studied pregnant woman's total attitudes regarding self-care measures during postpartum period, the results of the present study revealed that the vast majority of them had a positive attitude regarding self-care measures during postpartum period although they had insufficient knowledge in this regard. The findings of the present study is supported with **Doaa M et al., (2018)**⁽²⁵⁾ who found that the majority of women had positive attitudes towards post-partum self-care. **Abd El-Razek A (2013)**⁽⁵²⁾ evaluated the teaching guidelines enhancement of mothers about self-care practice during the

post-partum period at postnatal unit and outpatient clinics of obstetric department of El-Basher Hospital and reported that the majority of the studied mothers had positive attitudes towards post-partum self-care.

On the other hand, the finding of the present study is contradicted with **Darling B et al., (2014)**⁽⁵³⁾ who assessed knowledge and attitude of post natal mothers regarding self-care after childbirth in selected maternity centers in Madurai and mentioned that the majority of postpartum mothers had negative attitudes towards self-care after childbirth. From the researcher point of view, the result of the present study may be due to that about one third of women had a university educational level which affect their abilities to change their believes and attitude.

Concerning the relationship between socio-demographic characteristics and total knowledge level of the studied women, the current study revealed significant association between total knowledge level of the studied pregnant women and their educational level. This finding is in the same line with **Bakr A et al., (2019)**⁽⁵⁴⁾ who revealed that there was a highly statistically significant association between women's educational level and their knowledge regarding postpartum warning signs in their study to assess "women's knowledge regarding postpartum warning signs". In addition to **Timilsina S et al., (2015)**⁽⁵⁵⁾ explored the knowledge regarding postnatal care among postnatal mothers. They reported that there was a significant association between level of women's knowledge regarding postpartum self-care and their educational level. From the researcher point of view this result of

the present study may be due to that the women with educational background had correct knowledge than women with limited educational background.

The current study also revealed that there was a significant association between total knowledge level of the studied pregnant women and their occupation. This finding is supported by **Bakr A et al., (2019)**⁽⁵⁴⁾ and **Ibrahim A et al., (2017)**⁽⁵⁶⁾ who revealed that there was a highly statistically significant association between women's job and knowledge regarding postpartum warning signs. From the researcher's point of view, the result of the present study may be due to that more than three fifths of the studied women were housewives and haven't better opportunity to share experience with others than working women.

Concerning the relationship between total knowledge level of the studied pregnant women and women's residence, the current study revealed that there was no association between total knowledge level and women's residence. This finding is supported by **Ibrahim A et al., (2017)**⁽⁵⁶⁾ who revealed that there was no association between total knowledge level and women's residence. On the other hand, the current study findings disagree with **Bakr A et al., (2019)**⁽⁵⁴⁾ and **Hailu D et al., (2014)**⁽⁵⁷⁾ who reported that urban residence had a significant association with at least two danger signs during postpartum period.

Again, the findings of the current study showed that there was no correlation between women's age and knowledge regarding postpartum self-care. This result is in harmony with **Darling B et al., (2014)**⁽⁵³⁾ who found that there was no association between women's knowledge

regarding postpartum self-care and their age. In addition to **El-Nagar A et al., (2017)**⁽⁵⁶⁾ who assessed knowledge and practice of pregnant women regarding danger signs of obstetrics complications in postnatal medical centers in Tanta city found that there was no statistically significant association between women's knowledge regarding postpartum danger signs and age. Meanwhile, the present study finding is contrasted with **Doaa M et al., (2018)**⁽²⁵⁾ and **Lalitha H (2016)**⁽⁵⁸⁾ who found a significant association between mothers' knowledge regarding postpartum self-care and age.

As regards to correlation between total attitude score and knowledge score of the studied pregnant women regarding self-care measures during postpartum period, the current study reported that there is a statistically significant positive correlation between knowledge score and total attitude score of the studied women regarding self-care measures during postpartum period. This result is similar to the finding of the study done by **Bakr A et al., (2019)**⁽⁵⁴⁾ and **Darling B et al., (2014)**⁽⁵³⁾ who reported that there was a positive correlation between knowledge and attitudes of postnatal mothers regarding self-care after childbirth. On the other hand, the result of the current study is not matched with **Doaa M et al., (2018)**⁽²⁵⁾ who assessed women's self-care practice during postpartum period, and reported that there was no correlation between women's knowledge and attitude regarding self-practice during postpartum period.

Conclusion

Based on the findings of the present study, perception of the studied pregnant women included their knowledge and attitudes regarding self-care measures

during postpartum period. So, it can be concluded that slightly more than one half of the studied pregnant women revealed low level of knowledge regarding self-care measures during postpartum period. On the other hand, the majority of the studied pregnant women had positive attitudes toward postpartum self-care measures.

Again, significant positive correlation was found between total knowledge and total attitudes score level among the studied pregnant women and self-care measures during postpartum period, as well as between total attitudes score level and between women's socio demographic characteristics and reproductive history. Thus, the research questions of this study have been answered regarding the perception of pregnant women about self-care measures during postpartum period.

Recommendations

Based on the results of the present study, the following recommendations are suggested:

- Planning and developing antenatal classes for all pregnant women especially during the last trimester to increase their awareness, enhance their practice regarding routine self-care during postnatal period and regarding seeking medical care at proper time.

- Constant supervision by the Ministry of Health and population through Council Health Management Teams to improve quality of counseling provided by nurses during antenatal care about postpartum care.

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