

Pregnant Women's knowledge and Attitude Regarding Obstetric Fistula

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Abstract

Background: obstetric fistula is a major public health concern among thousands of women with in developing country and has the most devastating effects on physical, social and economic levels. Also, obstetric fistula is a preventable condition that health care workers play a key role in its prevention. **The aim** of this study was to assess knowledge and attitude of pregnant women regarding obstetric fistula. **Design:** A descriptive study design was utilized. **Setting:** The study was conducted at an outpatient clinic of obstetrics and gynecological affiliated to the Benha University Hospital. **Sampling:** A convenient sample of 288 pregnant women. **Tools:** Three tools were utilized for collecting data: Tool I: A structured interviewing questionnaire. Tool II: Pregnant women's Knowledge Assessment Sheet regarding obstetric fistula. Tool III: Pregnant women's Attitude assessment sheet regarding obstetric fistula. **Results:** showed that, three quarters of the studied pregnant women had in adequate level of total knowledge regarding obstetric fistula. Also, less than two thirds of them had negative attitude regarding obstetric fistula. Moreover, there was a statistical significant relation between pregnant women's total knowledge score as well as total attitude score and their general characteristic. **Conclusion:** the study concluded that, there was highly statistically significant positive correlation between total knowledge of the studied pregnant women and their total attitude regarding obstetric fistula. **Recommendations:** There is a need to provide educational program during the pregnancy for improving knowledge and attitude of pregnant women regarding obstetric fistula.

Keywords: Attitude, Knowledge, pregnant women, Obstetric fistula.

Introduction

Obstetric fistula, which develops after a prolonged or obstructed labour, is preventable and treatable. However, many women are still afflicted with the condition and remain untreated in low-income and middle-income countries. Concerns have also been raised that an increasing trend of caesarean sections is increasing the risk and share of iatrogenic obstetric fistula in these countries [27]

The etiology of vaginal fistula, an abnormal hole between the bladder (vesico-vaginal fistula) and/or rectum (recto-vaginal fistula) and the reproductive tract of a woman, vaginal fistula are divided into two main categories: obstetric and traumatic. Of obstetric origin are caused by an intertwined set of biological, socio-economic, and cultural factors that favor obstructed labor and triggered by insufficient or delayed access to quality emergency obstetric care. Vaginal fistula of traumatic origin mostly results from sexual violence [29]

Obstetric fistula is a severe condition which has devastating consequences for a woman's life. Fistulae have devastating consequences, particularly in low income countries where women have less geographical and financial access to appropriate surgical care for repair. In high income countries they are also devastating, but they are very rare and surgery to repair them occurs more rapidly [6]

Depending on the fistula's size and location, may have minor symptoms or significant problems with continence and hygiene. Signs and symptoms of a rectovaginal fistula may include Passage of gas, stool or pus from vagina, Foul-smelling vaginal discharge, Recurrent vaginal or urinary tract infections, Irritation or pain in the vulva, vagina and the area between

vagina and anus (perineum) and Pain during sexual intercourse [17]

A vaginal fistula doesn't usually hurt, but it can cause some problems that need medical care. Urine will constantly leak from bladder into vagina. This can make unable to control urination, genital area may get infected or sore, and can have pain during intercourse and other symptoms of vaginal fistula include: Fever, Belly pain, Diarrhea, Weight loss, Nausea and Vomiting [26]

Some fistulas may heal on their own. A small bladder fistula, doctor might want to try putting a small tube called a catheter into bladder to drain the pee and give the fistula time to heal by itself. Doctor might also use special glue or plug made of natural proteins to seal or fill the fistula. They can also give women an antibiotic to treat an infection caused by the fistula. Many people who have fistulas need surgery. Kind of surgery depends on the type of fistula. Surgery could be laparoscopic, in which doctor makes small cuts (incisions) and inserts cameras and tools. Or could be abdominal surgery, where get a regular incision with a tool called a scalpel [9]

The role of nurse in caring for females with obstetric fistula or at risk for obstetric fistula, regardless of setting, includes enhancing women's knowledge about obstetric fistula and promoting behavior change. Specific nursing actions include: providing patient education across the lifespan about treatment and prevention of obstetric fistula [2]

Significance of the study

Obstetric fistula is a significant global public health issue, Health education have been shown to be effective in improving knowledge and awareness among women. Nurses are on the front line of health

care in East, Central, and Southern Africa, especially in the care of women and infants. Nurses play an essential role in reducing both maternal and infant mortality and morbidity. Throughout the world, but mainly in parts of sub-Saharan Africa and Asia, it is conservatively estimated that more than 2 million young women live with untreated obstetric fistula. It has also been estimated that between 50 000 and 100 000 new women are affected each year⁵

Knowledge and attitude towards the danger signs of obstetric complications is the essential first step in the appropriate and timely referral to obstetric care. Sadly, most fistula patients do not present at the standard hospital facilities with adequate antenatal care services, because the condition usually affects the most marginalized group, that is, the poor, young women who are often illiterates and who live in rural areas¹. So, this study aimed to assess knowledge and attitude of pregnant women regarding obstetric fistula.

Aim of the study

The aim of this study was to assess knowledge and attitude of pregnant women regarding obstetric fistula.

Research questions:

- What is the level of pregnant women's knowledge regarding obstetric fistula?
- What is pregnant women's attitude regarding obstetric fistula?
- Is there correlation between pregnant women's knowledge and their attitude regarding obstetric fistula?

Subjects and Method:

Research design:

A descriptive study design was utilized to fulfill the aim of the current study. **Setting:**

The study was conducted at the outpatient clinic of obstetrics and gynecological department affiliated to the Benha University Hospital.

Sampling:

- **Sample type:** A convenient sample was selected from the above mentioned study setting.
- **Size:** A total of (288) pregnant women included in the current study (for the period of six months). The researcher visited the previously mentioned setting, two days / week (Monday and Thursday) from 9 am to 12 pm.

Tools for data collection:

Three tools were utilized for collecting data:

- **Tool I -** A structured interviewing questionnaire (Appendix I): It was designed by the researcher after reviewing related literature 23-2. It was written in an Arabic language in the form of close-end questions. It encompassed two parts:
 - Part (1): General characteristics of the studied pregnant women which consisted of (5) items such as (age, educational level, marital status, place of residence and occupation).
 - Part (2): obstetrical history which consisted of (7) items such as (age of marriage, age at first child, the

number of pregnancies, history of abortion, previous birth method, the place where the previous child was born and had obstetric fistula before).

- **Tool II: Pregnant women's Knowledge assessment sheet regarding obstetric fistula (Appendix II):** This tool was constructed by the researcher based on reviewing the related literatures. It was used to assess pregnant women's knowledge regarding obstetric fistula. It was translated by the researcher into Arabic language to suite women's level of understanding and consisted of two sections:-
 - Section (1): pregnant women's knowledge regarding obstetric fistula and its prevention, it consisted of (9) items (definition of obstetric fistula, types of vaginal fistula, factors that cause obstetric fistula, signs and symptoms, complication of obstetric fistula, methods of diagnosis, ways to prevent obstetric fistula, Psychological and social risks resulting from obstetric fistula, The role of the community for the prevention of obstetric fistula).
 - Section (2): pregnant women's knowledge regarding methods of treating obstetric fistula, it consisted of (9) items (methods of treating obstetric fistula, the surgical procedure used to treat obstetric fistula, success rate, reasons of failure, complication, Contraindications for obstetric fistula surgery, general precautions, sexual precautions and tips after the operation).

Scoring system of knowledge:

Each item was assigned a score of (3) given when the answer was complete correct answer, a score (2) was given when the answer was incomplete correct answer and a score (1) was given when the answer was don't known or wrong. The total score of each section was calculated by summation of the scores of its items. The total score of the pregnant women' knowledge calculated by the addition of the total score of all sections. The total knowledge score was classified as the following:

- Adequate knowledge $\geq 60\%$.
- Inadequate knowledge $< 60\%$.

Tool III: Pregnant women's Attitude assessment sheet regarding obstetric fistula (Appendix III): it was adapted from¹³ and was translated into Arabic language by the researcher. It composed of (18) items in the form of close end questions to assess pregnant women' attitude regarding obstetric fistula.

Scoring system:

Each statement was evaluated against three point-likert scale ranged from agree (3 scores), uncertain (2scores), and disagree (1 score). The total score was summed and categorized as the following:

- Negative attitude when the total score $< 60\%$
- Positive attitude when the total scores $\geq 60\%$.

Tool validity and reliability

The tools were reviewed for comprehensiveness, appropriateness, and legibility by an expert panel consisting of three experts from obstetrics and

gynecological nursing. The panel ascertained the face and content validity of the tools. Reliability was done by Cronbach's Alpha coefficient for testing. The internal consistency of knowledge was (0.826) and attitude was (0.811).

Ethical considerations:

Ethical aspects were considered before starting the study as the following:

- Approval from the Faculty of Nursing Ethical Committee, Benha University was obtained to conduct this study.
- Each pregnant woman was informed about the purpose and benefits of the study at the beginning of interview and time throughout the study.
- An informed consent was obtained from each pregnant woman before starting the data collection.
- Confidentiality was ensured throughout the study process, where personal data were not disclosed, and the women before starting data collection.
- Each pregnant woman was informed that, participation is voluntary and each pregnant woman had a choice to continue or withdraw from the study.

Pilot study:

The pilot study was carried out on ten percent of the total duration of data collection (three weeks (25 pregnant women) to test the research tools' simplicity, clarity and applicability and estimated the time required to fill in the tools. The pregnant women in pilot study excluded from the main sample to avoid contamination of the sample.

Fieldwork:

An official permission from the Dean of outpatient clinic of obstetrics and gynecological affiliated to the Benha University Hospital was obtained to conduct the study. The study started from the beginning of January, 2022 to the end June, 2022 covering six months. The researcher visited the pre mentioned setting from 9 Am to 12 Pm, two days (Monday and Thursday) per week to collect data from pregnant women until sample size was completed.

- At the beginning of interview the researcher greeted the pregnant women, introduced herself to each pregnant woman included in the study, explained the aim and purpose of the study and provided pregnant women with all information about the study and taken informed consent.

- A structured interviewing questionnaire (appendix I) was utilized to assess pregnant women's general characteristics and obstetrical history.

- Pregnant women' knowledge assessment sheet (appendix II) was utilized to assess pregnant women's knowledge regarding obstetric fistula.

- Pregnant women' attitude assessment sheet (appendix III) was utilized to assess pregnant women's Attitude regarding obstetric fistula.

- The previous steps were repeated until the total samples were collected.

- The average time needed for the complete tools ranged from 20-30 minutes.

- The average numbers interviewed 5-7 pregnant woman /day.

Statistical design

The statistical analysis of data was done by using the computer software of Microsoft Excel Program and Statistical Package for Social Science (SPSS) version 25. Data were presented using descriptive statistics in the form of frequencies and percentage for categorical data, the arithmetic mean (X) and standard deviation (SD) for quantitative data. Qualitative variables were compared using chi square test (X^2). In addition, r- test were used to identify the correlation between the study variables.

Degrees of significance of results were considered as follows: - P-value > 0.05 Not significant (NS).

- P-value \leq 0.05 Significant (S) - P-value \leq 0.001 Highly Significant (HS).

Limitation of study

Occasionally, the waiting place of the obstetrics and gynecological outpatient clinic was crowded and noisy, which required more time and effort to conduct the study.

Result:

Table (1): Shows that, 56.2% of the studied pregnant women were aged 20-30 years old with mean age was 28.38 ± 5.90 years. As regard to marital status, 97.9% of them were married. Also, 66.7% of the studied pregnant women lived in rural areas. Moreover, 75.7% of them were housewife.

Figure (1): Shows that, 57.3% of the studied pregnant women had secondary education. Also, 20.8% of them had university education. While, 12.2% of them had basic education.

Table (2): Demonstrates that, 13.2% of the studied pregnant women had information about obstetric fistula, 44.7% of them had their information from their parents and relatives.

Continue table (2): Illustrates that, 59.7% and 60.8% of the studied pregnant women didn't know the signs, symptoms and complications of obstetric fistula, respectively. Also, 56.9% and 58.3% of them didn't know the factors that cause obstetric fistula and ways to prevent obstetric fistula, respectively.

Table (3): Reveals that, 67.7% and 69.4% of the studied pregnant women didn't know the surgical procedure used to treat obstetric fistula and the success rate of obstetric fistula operation, respectively. Also, more than half (59.0%) of them had incomplete correct answer regarding the necessary precautions before a fistula operation and sexual precautions after the fistula operation.

Figure (2): Shows that, 77.1% of studied women had inadequate level of total knowledge about obstetric fistula. While, 22.9% of them had adequate level of knowledge.

Table (4): Clarifies that, 50.3% and 50.7% of the studied pregnant women agreed that, preparing for the birth process and taking all medical measures that may

prevent the occurrence of fistula after childbirth as well as, they agreed that the large size of the fetus and the lack of it in the birth position is one of the things that raise the risk of obstetric fistula, respectively. Also, 46.5% and 49.7% of them disagreed that, poverty is a major cause of fistula as well as, they disagreed that malnutrition and a lack of some vitamins and minerals during pregnancy contribute to an increased risk of obstetric fistula.

Continue Table (4): Reveals that, 75.7% and 77.1% of the studied pregnant women agreed that, it is important to educate pregnant women about the dangers of obstetric fistula and nurses must educate

women and their communities about the risks of obstetric fistula, respectively. Also, 58.7% and 59.0% of them to some extent agreed that, using of antibiotics is necessary to treat obstetric fistula and unsafe abortion may cause obstetric fistula, respectively.

Figure (3): Shows that, 62.5% of the studied pregnant women had negative attitude regarding obstetric fistula. While, 37.5% of them had positive attitude.

Table (5): Indicates that, there was a highly statistical significant positive correlation between pregnant women' total knowledge and total attitude regarding obstetric fistula at ($P \leq 0.001$).

Table (1): distribution of the studied pregnant women according to their general characteristics (n=288).

General characteristic	No.	%
Age		
< 20 years	21	7.3
20 - 30 years	162	56.2
> 30 years	105	36.5
	Mean ± SD	28.38 ± 5.90
Marital status		
Married	282	97.9
Divorced	2	0.7
Widow	4	1.4
Place of residence		
Rural	195	67.7
Urban	93	32.3
Occupation		
Work	70	24.3
Housewife	218	75.7

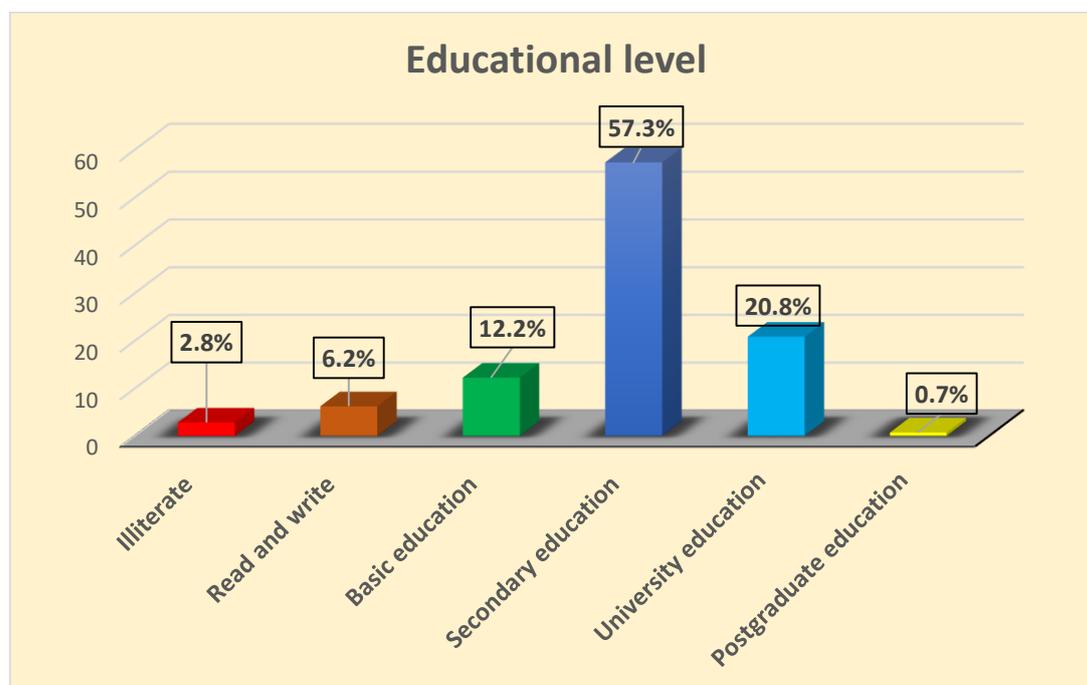


Fig. (1) Percentage distribution of the studied pregnant women according to their educational level (n=288).

Table (2): distribution of the studied pregnant women according to their knowledge about obstetric fistula (n=288).

Items	No.	%
Having information about obstetric fistula		
Yes	38	13.2
No	250	86.8
If yes, the source of your information (n=38)		
Internet	8	21.1
The health team	6	15.8
Friends	7	18.4
Parents and relatives	17	44.7

Continue table (2) distribution of the studied pregnant women according to their knowledge about obstetric fistula (n=288).

Items	Complete correct answer		Incomplete correct answer		Don't Know	
	No.	%	No.	%	No.	%
Definition of obstetric fistula	38	13.2	93	32.3	157	54.5
Types of vaginal fistula	18	6.2	108	37.5	162	56.3
Factors that cause obstetric fistula	20	6.9	104	36.2	164	56.9
Signs and symptoms of obstetric fistula	26	9.0	90	31.3	172	59.7
Complications of obstetric fistula	20	6.9	93	32.3	175	60.8
Methods of diagnosing obstetric fistula	18	6.2	110	38.2	160	55.6
Ways to prevent obstetric fistula	30	10.4	90	31.3	168	58.3
Psychological and social risks resulting from obstetric fistula	49	17.0	101	35.1	138	47.9
Ways to prevent obstetric fistula	32	11.1	88	30.6	168	58.3

Table (3) distribution of the studied pregnant women according to their knowledge about methods of treating obstetric fistula (n=288).

Items	Complete correct answer		Incomplete correct answer		Don't Know	
	No.	%	No.	%	No.	%
Methods used to treat obstetric fistula	27	9.4	99	34.4	162	56.2
Surgical procedure used to treat obstetric fistula	14	4.9	79	27.4	195	67.7
Success rate of obstetric fistula operation	16	5.6	72	25.0	200	69.4
Reasons for the failure of the obstetric fistula	30	10.4	98	34.0	160	55.6
Complications of obstetric fistula	32	11.1	100	34.7	156	54.2
Contraindications for obstetric fistula surgery	25	8.7	98	34.0	165	57.3
Necessary precautions before a fistula operation	26	9.1	170	59.0	92	31.9
Sexual precautions after the fistula operation	23	8.0	170	59.0	95	33.0
Tips after the operation of obstetric fistula	28	9.7	161	55.9	99	34.4

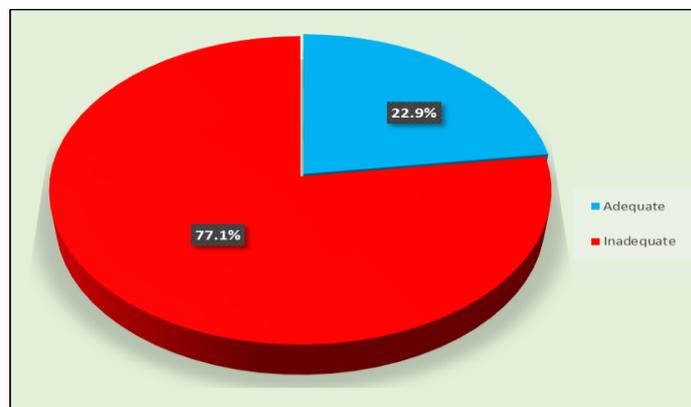


Fig. (2) Percentage distribution of the studied pregnant women according to their total knowledge about obstetric fistula (n=288).

Table (4) distribution of the studied pregnant women according to their attitude regarding obstetric fistula (n=288).

Items	Agree		To some extent		Disagree	
	No.	%	No.	%	No.	%
Obstetric fistula is a treatable problem.	65	22.6	166	57.6	57	19.8
Poverty is a major cause of fistula.	52	18.1	102	35.4	134	46.5
Malnutrition and a lack of some vitamins and minerals during pregnancy contribute to an increased risk of obstetric fistula.	45	15.6	100	34.7	143	49.7
Infection of women with diseases may cause fistula after childbirth.	102	35.4	115	39.9	71	24.7
Violence during intercourse may cause a fistula after childbirth.	56	19.4	104	36.1	128	44.5
Preparing for the birth process and taking all medical measures that may prevent the occurrence of fistula after childbirth.	145	50.3	108	37.5	35	12.2
Woman's educational level may affect the occurrence of fistula.	95	33.0	120	41.7	73	25.3
The woman giving birth to her first child at a young age causes fistula after birth.	104	36.1	96	33.3	88	30.6
The large size of the fetus and the lack of it in the birth position is one of the things that raise the risk of obstetric fistula.	146	50.7	100	34.7	42	14.6
It is important to educate pregnant women about the dangers of obstetric fistula	218	75.7	60	20.8	10	3.5
The use of antibiotics is necessary to treat obstetric fistula	87	30.2	169	58.7	32	11.1
Obstetric fistula leads to infertility	80	27.8	153	53.1	55	19.1
Unsafe abortion may cause obstetric fistula	78	27.1	170	59.0	40	13.9
It is important to explain the patient's condition to the parents, which leads to their quick adaptation to his condition.	132	45.8	119	41.3	37	12.9
Nurses must educate women and their communities about the risks of obstetric fistula.	222	77.1	56	19.4	10	3.5
I believe that taking precautions during childbirth helps prevent obstetric fistula.	145	50.3	108	37.5	35	12.2
The method of childbirth has a role in the occurrence of fistula after birth.	76	26.4	108	37.5	104	36.1
Regular follow-up during pregnancy is important to avoid obstetric fistula.	146	50.7	100	34.7	42	14.6

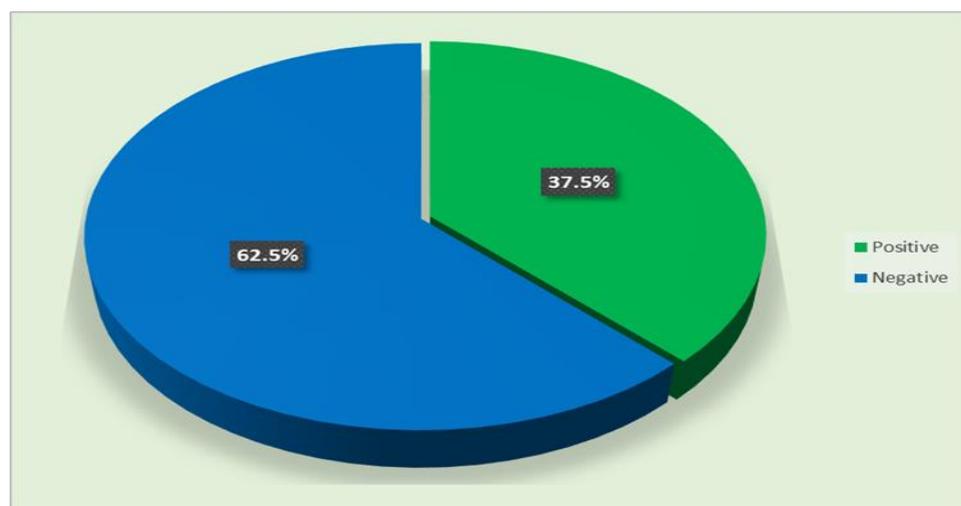
**Fig. (3)** Percentage distribution of the studied pregnant women according to their total attitude regarding obstetric fistula (n=288).

Table (5) Correlation between pregnant women's total knowledge and total attitude regarding obstetric fistula (n=288).

Variables	Total attitude	
	r	p-value
Total knowledge	0.507	0.000**

r= correlation coefficient test. P= p-value **highly significant at $p \leq 0.001$.

Discussion

Obstetrics fistula is a complication that arises from prolonged or obstructed labor without prompt medical and nursing care which causes tissue necrosis resulting in a hole between the vagina and bladder or rectum, or both. It is a public health issue for women and communities within developing countries, particularly in Africa and Southeast Asia. Obstetrics fistula which signifies a health system that has failed to provide accessible, timely, and appropriate intrapartum care, improving health care workers' knowledge, practices and attitudes regarding obstetric fistula could help in its prevention⁴

Obstetric fistula is a public health concern for women and women's communities within developing nations, particularly in Africa and

Southeast Asia and it is found to be one of the most visible indicators of maternal morbidity⁷ The current study aimed to assess Pregnant Women's knowledge and attitude Regarding Obstetric Fistula. The findings of the current study will be discussed under four main sections, characteristic of the studied women, knowledge of the studied women regarding obstetric fistula, attitude of the studied women regarding obstetric fistula, and the final section reflected relation between level of total knowledge, attitude score and socio-demographic characteristics. As regards demographic characteristics of the studied women; the results of the current study showed that more than half of the studied sample, were in age group 20-30 years old with the mean age 28.38 ± 5.90 years.

The results of the current study agreed with¹¹ who studied "Quality of life of obstetrics fistula patients in Ethiopia", this study found that The mean (\pm SD) age of the respondents was $27.23 \pm (7.48)$ years. Additionally, this result is supported by¹² who studied "awareness of obstetric fistula and its associated factors among reproductive-age women in Ethiopia", this study results showed that the median age of the participants was 27, and 93.7% of the women were married.

On the other hand, the results of the current study disagreed with⁵who studied "factors associated with the awareness of vaginal fistula among women in Nigeria": a cross-sectional study, this study found that the average age of the studied sample was 32.8 ± 8.6 years.

Regarding marital status, the recurrent study found that the most of them were married. The results of the current study matched with⁶who studied "Knowledge of obstetric fistula and its associated factors among women of reproductive age in

Northwestern Ethiopia", this study found that the majority (94.7%) of women were married.

Regarding occupation, the results of the current study found that, more than three-quarters of studied pregnant women were housewife. The results of the current study matched with⁸ who found that, (78.2%) of study participants were housewives in occupations. Also, the results of the current study agreed with,²⁸ who found that the majority (77.8%) of the participants were farmers.

Regarding pregnant women's education, more than half of the studied pregnant women have secondary education. Also, one-fifth of them had university education. While, the minority of them had basic education. Obviously education is crucial for awareness and contributes to women empowerment to minimize risk of obstetric fistula, mainly child marriage, promotes gender equality.

This result was in agreement with¹⁸who studied "Quality of life and its predictive factors among women with obstetric fistula in Ethiopia", the results found that (57.13%) of the respondents had secondary education.

Regarding pregnant women's knowledge of obstetric fistula, the results of the current study demonstrated that, the minority of the studied pregnant women had information about obstetric fistula, less than half of them had their information from their parents and relatives. The lack of information may be due to two thirds of the studied pregnant women lived in rural areas this point made them shameless to discuss issues related to reproductive organs among them.

The results of the current study was in agreement with²⁷, who studied "knowledge of obstetric fistula prevention among young women in urban and rural Burkina Faso", this study found that only a third of participants were aware of obstetric fistula, with marginal difference between rural (37.9%) and Regarding sources of information, most of the women who were aware of obstetric fistula got the information through the media (45.5%) or attributed the information to family and friends (41.0%).

Regarding pregnant women's knowledge of obstetric fistula, the results of the current study illustrated that, more than half of the studied pregnant women don't know the signs, symptoms and complications of obstetric fistula. Also, more than half of them don't know the factors that cause obstetric fistula and ways to prevent obstetric fistula. This lack of knowledge about obstetric fistula and its prevention may be due to that more than two thirds of the studied women lived in rural area and did not receive the

needed information about obstetric fistula and most of them not attained any program regarding obstetric fistula. The results of the current study were in agreement with ¹⁰who studied "Agony of unsafe motherhood. A review of Nigeria experience", this study found that more than half of the women had no idea on ways fistula can be prevented by women, a low proportion believe it can be prevented by early Obstetric care during labour.

Also, this result was agreed with ³⁰ who studied "Genitourinary fistulae experience in a University Teaching Hospital: a South-South Nigeria", this study found 60% of the studied sample had no idea of the cause, and other felt it was due to the will of God, iatrogenic, others felt it was due to early marriage. It is possible that due to interaction between the health care workers and the patients. Moreover, the current results were in agreement with ¹⁷, who found that about half of respondents 21 (42.8%) of respondents had no idea of the cause of obstetric fistula and More than a two thirds 34 (69.4%) of the women had no idea on ways fistula can be prevented.

Regarding the studied pregnant women's knowledge about methods of treating obstetric fistula, the results of the current study revealed that, more than two-thirds of the studied pregnant women didn't know the surgical procedure used to treat obstetric fistula and the success rate of obstetric fistula operation. Also, more than half of them had incomplete correct answer regarding the necessary precautions before a fistula operation and sexual precautions after the fistula operation. This result reflected the importance of the continuous education for women on improving their knowledge regarding prevention and treatment of obstetric fistula.

The current study results were in agreement with ²⁴ who studied "Knowledge, attitude and perception about obstetric fistula by Cameroonian women", this study found that more than two third of the women who had an idea of the fistula do not know that there is a surgical treatment for it. Also, this result was nearly similar to ¹⁵who studied "Community awareness about risk factors, presentation and prevention of obstetric fistula in Nabitovu village, Iganga district, Uganda", this study found that there was a misconception about fistula treatment as some participants believed that certain herbs could be used to cure obstetric fistula.

On the other hand, these findings were disagreed with ¹⁴who studied "Risk factors for vaginal fistula symptoms in Sub-Saharan Africa": the results showed that the majority (n=39, 86.7%) of midwives knew that surgery was the treatment modality of choice and that patients had to be referred to the fistula hospital for the surgery.

Regarding distribution of the studied pregnant women according to their total knowledge about obstetric fistula, the results of recurrent study Showed that, more than three-quarters of them had inadequate level of total knowledge about obstetric fistula. While, less than one-quarter of them had adequate level. This

might be due to rural women with less availability of information access, difficulty accessibility of facility, and decrease accessibility of education than urban women.

The results of the current study matched with ¹³who found that: Only one-in-three women were found to be knowledgeable about obstetric fistula in the study area. Since the prevalence of knowledge of obstetric fistula in this study is low.

Also, this result was agreed with ²³, who studied "Assessment of the knowledge and obstetric features of women affected by obstetric fistula at obstetric fistula centre in Bingham University Teaching Hospital, Nigeria" this study found that more than two third of the patients have had no prior knowledge of Obstetric fistula while a third had knowledge about obstetric fistula.

Regarding distribution of the studied pregnant women attitude regarding obstetric fistula, the results of the current study clarified that, about half of the studied pregnant women agreed that, preparing for the birth process and taking all medical measures that may prevent the occurrence of fistula after childbirth as well as, they agreed that the large size of the fetus and the lack of it in the birth position is one of the things that raise the risk of obstetric fistula. Also, less than half of them disagreed that, poverty is a major cause of fistula as well as, they disagreed that malnutrition and a lack of some vitamins and minerals during pregnancy contribute to an increased risk of obstetric fistula. These findings may be related to lack of knowledge of the studied women about preventive measures and thus because of low educational level of women.

This result was similar to ¹⁶, who studied "Knowledge of obstetric fistula among prenatal clinic attendees and midwives in Ghana". The results showed that more than half of the women agreed that mothers who received care in the health centers had better knowledge of obstetric fistula compared with their counterparts in the home. As well as, the results were similar to ²⁶who assess "Knowledge, Attitude and Practice of Women Regarding Prevention of Obstetric Fistula at Kabale Regional Referral Hospital" reported that, 49.3% of the respondents agreed that, seeking obstetric care early enough reduces the chances of developing fistula.

On the other hand, the current study results disagreed with ³¹, who studied "Prevalence and risk factors of obstetric fistula in a South-eastern rural community of India", and the results reported that nearly (70%) of the women agreed that increasing risk of obstetric fistula such as lack of emergency obstetric care, child marriage associated with early pregnancy, women with no antenatal care, malnutrition and poor health services.

Regarding distribution of the studied pregnant women according to their attitude regarding obstetric fistula, the current study results revealed that, more than three-quarters of the studied pregnant women agreed that, it is important to educate pregnant women

about the dangers of obstetric fistula and nurses must educate women and their communities about the risks of obstetric fistula. Also, more than half of them to some extent agreed that, using of antibiotics is necessary to treat obstetric fistula and unsafe abortion may cause obstetric fistula. These results may be related to the effect of giving the pregnant women knowledge regarding prevention and treatment of obstetric fistula. This result was nearly similar to ¹⁴who studied "Current practices in treatment of female genital fistula in south Asia and sub-Saharan Africa", the results showed that two-thirds of women reported use of antibiotic therapy is necessary to treat obstetric fistula. The results also, were in agreement with ¹³who studied "Community awareness about risk factors, presentation of prevention and obstetric fistula in Uganda", the results found that most of the women agreed that on the preventive measures of the obstetric fistula included careful operations, discourage early marriages, health education campaigns, early seeking of medical attention during labour, easy access to health units and unsafe abortion may cause obstetric fistula.

Regarding distribution of the studied pregnant women according to their total attitude regarding obstetric fistula, the results of the current study revealed that, less than two-thirds of the studied pregnant women had negative attitude regarding obstetric fistula. While, more than one-third of them had positive attitude. This result may be explained by that, when pregnant women had a poor knowledge about obstetric fistula, this can lead to more negative attitude towards changing bad habits and having a positive view of life. The results of the current study agreed with ²¹who studied aspects of psychosocial problems of patients with vesico-vaginal fistula, this study found that more than half of women living with obstetric fistula had a negative attitude toward obstetric fistula. Also, the results of the current study were in agreement with ²³who studied awareness on vesico-vaginal fistula among women of reproductive age in Kawangware Slums, Nairobi City County, Kenya. The results showed that, one third (33.0%) of respondents had positive attitude towards vesicovaginal fistula.

On the other hand, the findings are disagreed with ²⁴ who studied "Healthcare workers knowledge and attitude towards prevention of obstetric fistula" and showed higher proportion (60.8%) of the nurses and midwives had positive attitude towards obstetric fistula and its prevention. The reason for the difference between our results and this result is due the difference in the sample, as the nurses have a higher level of education than the mothers, and nurses have experience by virtue of their field of work.

Regarding Correlation between pregnant women's total knowledge and total attitude regarding obstetric fistula, the results of the current study revealed that, there was a highly statistical significant positive correlation between pregnant women' total knowledge and total attitude regarding obstetric fistula.

This result may be due to that the good level of knowledge has positive effect on the level of attitude. This result agreed with ¹¹, who studied "knowledge, attitudes and practices in social reintegration of women victims of obstetric fistula: region of the far-North, Cameroon". The results showed that, there was a positive statistically correlation between total knowledge and total attitude regarding obstetric fistula.

Conclusion

On the light of the current study findings, it was concluded that, three quarters of the studied pregnant women had in adequate level of total knowledge regarding obstetric fistula. Also, less than two thirds of them had negative attitude regarding obstetric fistula. Moreover, there was highly statistically significant positive correlation between total knowledge of the studied pregnant women and their total attitude score regarding obstetric fistula. Therefore, the study questions were answered.

Recommendations

Based on the findings of the current study, the following recommendations can be suggested:-

- Providing educational program during the pregnancy for improving knowledge and attitude of pregnant women regarding obstetric fistula.
- Conduct a nationwide screening program for pregnant women to detect any abnormal changes and high risk women during pregnancy to prevent obstetric fistula.

Further studies need to be performed:

- Assess knowledge and attitude regarding obstetric fistula among other age groups and other place.
- Assessing health behaviors of the pregnant women regarding obstetric fistula.
- Replication of the study on a large sample for generalizing the findings.

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