

Factors Affecting on utilization of Screening Procedures among Pregnant Women

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Abstract

Background: Screening tests early in your pregnancy you should be offered a number of tests, to help antenatal care team to provide the best care possible during pregnancy and the birth. **Aim:** This study is to assess the main factors affecting on utilization of screening procedures among pregnant women. **Methods:** A descriptive research design was adopted to fulfill the aim of the study and answer the research question. **Setting:** The study was conducted at Obstetric outpatient antenatal clinics of Beni-suef University Hospital and Beni-suef General hospital. **Sample type:** Simple random sample technique was used. **Sample criteria:** A sample of pregnant women was recruited from the eligible group. The sample included every pregnant women who was attending the antenatal clinics 3 days per week and fulfilling the inclusion criteria as different age group, different educational level, free from medical & surgical problem and agree to participation in the study until reaching sample size. **Results:** Regarding relation between characteristics of studied sample and their score of factors, the study revealed that were a highly significant association between educational level of women and occupation for husband with total score of factors (p. value <0.05). **Conclusion:** The present study, revealed that most of studied pregnant women had factors affecting utilization of screening procedures as social, economic, psychological, environmental factors. In addition, there is significant association between personal characteristic of pregnant women and their total score of factors that effect on utilization of screening procedures. **Recommendation:** Nurses should have more positive role in raising the awareness of women about the importance of screening procedures through developing mother's class programs at maternity hospitals and preparation of health education materials for pregnant women.

Key words: Factors, screening procedures, Pregnant Women.

Introduction

Screening procedures reduces maternal and prenatal morbidity and mortality both directly, through detection and treatment of pregnancy-related complications, and indirectly, through the identification of women and girls at increased risk of developing complications during labor and delivery, thus ensuring referral to an appropriate level of care. In addition, as indirect causes of maternal morbidity and mortality, such as HIV and malaria infections, contribute to approximately 25% of maternal deaths and near-misses, screening procedures

also provides an important opportunity to prevent and manage concurrent diseases through integrated service delivery (Davis, 2016).

Screening tests a series of tests is generally ordered during the initial visit so that baseline data can be obtained, allowing for early detection and prompt intervention if any problems occur. Tests that are generally conducted for all pregnant women include urinalysis and blood studies. The urine is analyzed for albumin, glucose, ketones, and

bacteria casts. Blood studies usually include a complete blood count (CBC), blood typing, and RH factors, glucose screening for high-risk women, a rubella, hepatitis surface antibody antigen, HIV, cervical smears to detect STI (Alio et al., 2013).

Socio demographic factors:

Age: the women age is an important factor because reproductive risk increases among adolescents younger than age 15 and women older than age 35, the younger women are likely to fail to receive little or no screening procedure because little experience. Maternal age has been shown to be both negatively and positively influence utilization of antenatal care and screening procedures in general (Latendress & Deneris, 2015).

Maternal education: education usually has a positive effect, increasing the probability of obtaining first trimester care. Women with high school education are most likely to receive screening procedure. Many studies found that women's education was the best predictor of screening procedures. Women with better education were more likely to receive the recommended number of ANC and made tests during pregnancy. Educated women are more likely to start prenatal tests early than less non educated women. Women's education emerged as a key factor in a qualitative study leading to an appreciation of the importance of screening procedures (Lifer, 2014).

Factors reflecting relevant knowledge, attitude and beliefs affect the initiation of antenatal care. Point that the relevant attitude and beliefs include knowing that care should begin in the first trimester, recognition of the importance of care and feeling that mother care is important to others close to her (David, 2014).

Social support: the effect of social support of family, friends, partners', and health care providers appears important to initiate the antenatal care. Late entry into prenatal care is more likely when a women is involved in an extended family or other dense network. Early entry appears less likely if a women does not

have a relationship with a current partner and especially if she does communicate freely with her partner about pregnancy. Also, it appears less likely if she does not perceive providers as a part of her support network, or if she dislikes doctors (Durhan & Chpman, 2014).

Health services factors:

The existence of facilities for maternal health care does not necessarily mean that they will be used them. In some cases, the explanation is simple and obvious. The clinic or the hospital is too far from a women's home and she lacks time, transport, or possibly the money to reach it (Fraser & Cooper, 2012).

Health facilities in developing countries face chronic shortage of equipment, drugs and basic supplies, including blood for transfusion. Families of women may be forced to purchase drugs and supplies to bring to the hospital. Moreover, found that lack of continuity of care, limited availability of providers, lack of transportation services, long travel time to services sites, and lack of beliefs in the benefits of preventive services were barriers to health care for prenatal care (Krans et al., 2013).

Environmental factors:

The environmental factors that affect the timing of prenatal care initiation include poor housing condition, living in home that lacks the basic necessitated for promoting good health, wellbeing, and positive pregnancy outcomes. Moreover, inadequate transportation is another barriers for antenatal care utilization. Nearly 80% of rural women live more than five kilometers from the nearest hospitals, and many have no way to get to health facilities except by walking even when they are in labor (Han, 2013).

Significance of the study

Increase complication during pregnancy and child birth may lead to death and disability among pregnant women, this study will carried out to assess the factors that affect mother's utilization of screening procedures. Screening tests one of basic the component of maternal care on which the life of mothers and babies depend and early detection of any abnormalities for pregnant women or fetus to can manage and control of its consequences. According to National center for health statistic data, show that women with prenatal care had an overall stillbirth rate of 2.7per1000 compared with 4.1per 1000for women without prenatal care (NCHS, 2012).

Aims of this study

Is to assess the factors affecting on utilization of screening procedures among pregnant women.

1- Research Question: What are the factors affecting on utilization of screening procedures among pregnant women?

Subject and Methods

Research design:

A descriptive research design was adopted to fulfill the aim of the study and answer the research questions.

Research setting:

The study was conducted at Obstetric outpatient antenatal clinics of Beni-suef University Hospital & Beni-suef General hospital.

Sample:

Simple Random sample technique was used.

A sample of: pregnant women was recruited from the eligible group. The sample included every pregnant women who was attending the antenatal clinics 3 days per week and fulfilling the inclusion criteria as different age group, different educational level, free from medical & surgical problem and agree to

participation in the study until reaching sample size. Total sample size was 100 women, according to using Steven and Thompson equation to calculate the sample size from the

$$n = \frac{Np(1-p)}{(N-1)(d^2/z^2) + p(1-p)}$$

following formula

Data Collection tools

Data were collected using the following tools:

1-Interviewing Questionnaire:

The questionnaire sheet is adapted by the researcher to collect the necessary data from women in sample. It divided into 3 parts:-

Part I: It involved for assessing women's socio-demographic data such as age, residence, marital status, level of education, job of women, and her husband.

Part II: the health history of the pregnant women, it include obstetric data as number of pregnancy, birth, and abortion, type of last labor, problem during previous pregnancy, tests during previous pregnancy, place of last labor, pervious antenatal care, data about current pregnant as pregnancy per week, number of times to care, time to perform screening tests, place make screening tests, most important tests done in current pregnancy.

Part III: women's knowledge this converted two majors areas:

- It was included knowledge of pregnant women regarding to concept of screening tests and important examination during pregnancy (Question21-24).

Scoring system

For the knowledge items, a correct complete was scored 3, correct incomplete was scored 2 and the incorrect 1. For each area of knowledge, the scores of the items were summed –up and total divided by the number of the items, giving a mean score for the area.

These scores were converted into a percent score, means and standard deviations were computed. The subject knowledge was considered satisfactory if the percent score more than 60%, and unsatisfactory if percent score was less than 60%.

2-Factors that affect mother's utilization of screening procedures during pregnancy. The target of this tool items were related to factors that affected screening procedure including social, economic, psychological, health services facilities. This part included close-ended as well as multiple choice questions (Question 1-26).

Scoring system for factors affecting on utilization of screening procedures:

Regarding the factors items, the answer of the women was distributed to two categories "sufficient effect" was scored "2" and "insufficient effect" was scored "1", respectively. For each area, the scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the area. These scores were converted into a percent score, and means, and standard deviations were computed. The factors was considered sufficient effect if the percent score was 60% or more, and insufficient effect if percent score was less than 60%.

II- Attitude scale (appendix II)

The scale adopted from (**Banyard& Hayes, 1994**)

A rating scale was used to assess woman's attitude toward utilization of antenatal care and screening procedures .it consisted of 24 clear simple statements on a 3-point likert scale. Participant had three possible responses for each statement: agree, uncertain or disagree.

Scoring system

For the attitude scale, scores of 1, 2, and 3 were respectively given to the responses of "disagree", "uncertain" and "agree".

The scoring was reversed for negative items. The scores of the items were summed – up and total divided by the number of the items, giving a mean score for attitude. These scores were converted into a percent score, means and standard deviations were computed. The attitude was considered satisfactory if the percent score more than 75% satisfactory, 50% unsatisfactory and 50%-75%average.

Pilot study

It was conducted on 10% of total study sample (10 pregnant women). The purpose of the pilot study was to test the applicability, feasibility and clarity of the tools. In addition, it served to estimate the approximate time required for interviewing the women as well as to find out any problems that might interfere with data collection. After obtaining the result of the pilot study, the necessary modifications of tools as (excluded questions, added questions & revised) were done then final format was developed under the guidance of supervisors. These women were excluded later from the actual study.

Fieldwork:

The actual fieldwork for the process of data collection consumed six months started at the beginning of May 2017until of November 2017. Data were collected in 3 days per week from9:00am to 1:00 pm average 1or 2women. Each interview ranged from 40 to 55 minutes, depending on the response of the participants .The researcher obtain on the oral approval of women to participate confidentiality of any obtained information was assured, and the subjects were informed about their right to participate or not in the study. The participants were also assured about anonymity.

Ethical considerations.

The ethical research considerations in this study included the following:

Prior to the actual work of research study, ethical approval was obtained from the Scientific Research, Ethical Committee of Faculty of Nursing, Ain-Shams University. The researcher maintained on anonymity and

Results

Table (1): Shows that near to half (45%) of the studied sample are at age categories (26-30), about three quarter (72%) of sample were from rural area. All of them were married. Also reveals about two thirds (65%) of wives weren't working and about more than the half of their.

Table (2): The frequency of satisfactory knowledge about screening procedures in the study illustrated that less than half 40% of sample had satisfactory knowledge about concept and importance of screening procedures. The table also, shows that most of women had satisfactory knowledge about ultrasound (80%), complete blood count (90%) and urinalysis (50%) of sample.

Table (3A): Reveals that social, economic, psychological factor affecting on utilization of screening procedures among pregnant women. Regarding social factors more than third quarter 81% of sample reported the husband acceptance, while the mother in law refusal and work had reported (40% and 38%) of sample. Concerning economic factors that

confidentiality of subjects. Subjects were allowed to choose to participate or not, and they had the right to withdraw from the study at any time.

low income was the most commonly reported (80%) of studied sample, while near three quarter (71% and 74 %) of sample reported high follow up costs and high costs of transportation. About psychological factor more than third quarter 78 of sample indicated to marital problems, while (70% and 69%) of sample reported planned of pregnancy and husband support.

Table (3b): Clears that more than three quarters 79% of sample reported near distance from home and about three quarter 75% of sample reported overcrowding, while 53% of studied sample reported cleaning of place. Also, the table illustrates that three quarter 75% of sample reported provide human and physical resources. While half (55% and 59%) of sample reported good treatment and attention from the doctor and nurse.

Table (4): Shows the relations between personal characteristics of studied sample and their factors. The table revealed that there were a highly significant association between educational level of women and occupation for husband with total score of factors (p. value <0.05).

Table (1): Distribution of studied sample according to personal characteristics (n=100).

Items	Unsatisfactory	Satisfactory
	%	%
The screening procedure	60	40
The importance of screening procedure	60	40
Ultrasound	20	80
Amniotic fluid index	70	30
Urinalysis	50	50
Amniocentesis	80	20
Non stress test	95	5
Umbilical artery Doppler flow	90	10
Complete blood count	10	90

Table (2): Distribution of studied sample according their knowledge about screening procedures and important examination during pregnancy (n=100).

Items	%
AGE	
• 20-25	19
• 26-30	45
• ≥ 30	36
Mean \pm SD	1.04 \pm 5.29
Residence	
• Rural	72
• Urban	28
Social status	
• Married	100
• Divorced	0
• Widowed	0
Educational level	
• Illiterate	18
• Intermediate	50
• High	32
Occupation for wife	
• Working	35
• Not working	65
Occupation for husband	
• Working	58
• Not working	42

Table (3A): Distribution of factors that effect on utilization of screening procedures among pregnant women (n=100).

	Sufficient effect %	Insufficient effect %
Social factors		
1 - The husband acceptance	81	19
2 – Mother in law refusal	38	62
3-Work	40	60
4 – lot of children	49	51
Economic factors		
1-low income	80	20
;2-suitable cost of medical treatment)	64	36
3-High costs of antenatal care	71	29
4-. High costs of transportation	74	26
Psychological factors		
1-planned pregnancy	70	30
2- fear of examination	67	33
3- continuous medical examinations lead to the healthy the fetus	55	45
4- husband support	69	31
5- - marital problems	78	22
6--Fear of abnormal results of tests	46	54

Table (3b): Distribution of factors related to health services that effect on utilization of screening procedures among pregnant women (n=100)

	Sufficient effect	Insufficient effect
Place of services		
1- setting near from home	79	21
2 – over crowding	75	25
3-. Cleaning of place	53	47
4- provide waiting area	41	59
5- provide privacy	34	66
6- free medications	46	54
Health services facilities		
1-good treatment	55	45
2- long time for exam	64	36
3 interest from the doctor and nurse	59	41
4 – available human and physical resource	75	25
5- provide well trained medical staff	67	33
6- appropriate schedule and planning of procedures	59	41

Table (4): Relation between personal characteristics as educational level, occupation of wife and occupation of husband of studied sample and total score of factors(n=100)

Items	Total factors				Chi-square	P value	Significance
	Sufficient effect 58%		In sufficient effect 42%				
Age	N	%	N	%			
20-25	14	24.1	7	16.7	4.21	.37	N.S
26-30	36	62.1	15	35.7			
≥30	8	13.8	20	47.6			
Residence							
Rural	44	75.9	11	26.2	2.92	.05	S
Urban	14	24.1	31	73.8			
Educational level							
Illiterate	4	6.9	29	69	25.73	.001	H.S
Intermediate	35	60.3	10	23.8			
High	19	32.8	3	7.2			
Occupation of wife							
Working	53	91.4	9	21.4	22.9	.05	.S
Housewife	5	8.6	33	78.6			
Occupation of husband							
Working	37	63.8	11	26.2	14.25	.001	H.S
Not working	21	36.2	31	73.8			

Discussion

According to socio-demographic data of the study sample, the present study indicated that, nearly to half of the studied sample were at age categories (26-30 years). This result is consistent with the study conducted by *Aijaz et al. (2013)*, who assessed factors affecting utilization of antenatal care of pregnant women. Which revealed that half of the studied sample belonged to age group (20-29 years). Moreover the current study is in the same line with *Mbeai, (2015)* who assessed factors influencing the utilization of antenatal care services among reproductive women: a case of Kibera, Nairobi County, Kenya, which revealed that, half of the studied sample belonged to age group (26-35 years).

The similarity between the results of these studies could be due to similarity of reproductive age group and age of women between 25-30 identified as predisposing determinant for utilization of screening procedures and more likely to have adequately utilized it than young women between (15-19 years) that have limited experience with antenatal care, pregnancy, benefits of tests and child bearing. Also, they have more fears and perceive more setting related problems.

Concerning residence, nearly three quarters of the studied sample were living in rural areas. This finding is consistent with *Fagbmigbe&Idemudia, (2015)*, who assessed barriers to antenatal care use in Nigeria: evidence from implication for maternal health programming, revealed that, more than four fifth of the studied sample were living in rural areas. The similarity between the findings of the

present study and the study of *Fagbmigbe&Idemudia, (2015)*, was due to the similarity of setting of collecting data.

The current study is in contrast with the study conducted by *Aijaz, (2013)*, who assessed factors affecting utilization of antenatal care:

the opinion of pregnant women, which found that more than two fifth of the studied sample living in rural area. This difference between the studies was due to the difference in the socio demographic characteristics of the respondents and differences in the setting of the study.

In relation to education of women, Studies have shown that women with lower education usually have less knowledge about and more difficulties to get access to screening procedures and ANC services. So, the current study cleared that half of the studied sample were intermediate educational level. This study result agreed with *Dairo, (2010)*, who assessed factors affecting the utilization of antenatal care services in Ibdan, Nigeria, found that more than half of the studied sample belonged to intermediate educational level. The similarity between the results of these studies could be due to similarity of residence of subjects that reported from rural area.

Also, the study illustrated that, nearly one fifth of the studied sample were illiterate. This differs with *(Dubale, 2017)*, who assessed antenatal care utilization and its associated factors among pregnant women in Boricha District, Southern Ethiopia, which found that nearly half of the studied sample were illiterate.

Regarding to husband occupation the current study showed that, more than half 58%of study sample their husband were working. This result agree with *(Sesedzai 2014)* who assessed knowledge and utilization of antenatal care services by pregnant women at clinic in Ekurhuleni. Which revealed that more than half 66% their husband were working.

Regarding knowledge, the current study clear that 40% of sample reported concept and importance of screening procedures. This result agree with *(Seven, 2016)* who assessed women knowledge and utilization of prenatal screening tests: Aturiksh study. That found 32.3% of sample had information about screening procedures and importance of tests. The current study show that, more than three quarter 80%of sample had knowledge about ultrasound .this agree with *(Burcu et al., 2016)* who assessed ultrasound in pregnancy: A cross –sectional study of knowledge and expectations among pregnant women in south west turkey. Who found 84% of sample had knowledge about ultrasound. In addition to this result show that, 20%of sample had knowledge about amniocentesis. This agree with *(Memnun, 2017)* who assessed women’s knowledge and use of prenatal screening tests. Who found 23.7% of sample had knowledge about amniocentesis.

The study, reveals factors utilization of screening procedures among pregnant women. Regarding social factors of 81% of sample reported the husband acceptance. This result agree with *(Onasoga, et.al 2012)* who assessed factors influencing utilization of antenatal care services among pregnant women in Ife central Lga. Who found 88%of sample reported the husband acceptance.in additionally, the study clears that factors related to place services more than three quarters 79% of sample reported near distance of services from home and economic factor 71% of sample reported high follow-up costs. This agree with *(Mbeai, 2015)* who assessed factors influencing the utilization of antenatal care services among reproductive women in Kenya. That found slightly less than three quarter 71% of sample reported near distance of services and three quarter 75% of sample reported high follow-up costs.

In this study, showed that the relation between characteristic of studied sample and their total score of factor. Revealed that there were a highly significant association between education level of women and occupation of

husband with total score of factor

(p.value < 0.05. This agree with (*Onasoga et al., 2012*) who assessed factors influencing utilization of antenatal care services among pregnant women in Ife central Lga and found that were significant association between education level of women and occupation of husband their total score of factors (p.value < 0.05).

Conclusion

Based on the result of the current study; it can be concluded that:

The present study revealed that, most of the studied pregnant women had factors affecting utilization of screening procedures as social, economic, psychological, factors. In addition, there is highly significant association between personal characteristic of pregnant women as educational level and occupation of husband with factors that affected utilization of screening procedures. The conclusion of current study support research question and on the line of the aim.

Recommendation

In the light the present study, the following recommendation are suggested:-

- Nurses should have more positive role in raising the awareness of women about the importance of screening procedures through developing mother's class programs at maternity hospitals and preparation of health education materials for pregnant women.
- In-services training programs are needed for nurses to provide them with updated essential knowledge and practice about screening procedures and to be able to provide high quality of screening procedures and antenatal care services.
- Health education programs about reproductive health should be directed to adolescent girls as future expectant mothers, as well as to husband and family members to improve their perception about the importance and
- knowledge of screening procedures, regular and early seeking of maternal health care.

- Encourage using the updated methods for education about screening procedures as mobile messages, available means of information technology, and care for pregnant women and developing manuals on self-care and audiovisual aids will help health provider to educate the women.

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