



Impact of Health Education Program on Mothers' Knowledge towards Antenatal Care at Al-Hawata Area, AL-Gadarif State, Sudan

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Abstract:

The problems of increased maternal morbidity and mortality in the developing countries like Sudan have been associated with knowledge and awareness of mothers during pregnancy and childbirth. Women's education has effect on health seeking behaviors and increased awareness about antenatal care. The study was aimed to evaluate the impact of health education program on mothers' knowledge regarding antenatal care. Interventional study one group, conducted among 150 pregnant women attending antenatal clinic in Al-Hawata area. Their age ranged between (15 – 49) years in the first and second trimester. Data was collected in phases, where pre intervention information was collected, implementation of the program and the last phase was post intervention assessment. Statistically analyzed used statistical package for social sciences (SPSS). It was found that almost variables such as age, education, occupation, number of antenatal visits significant association with women's education. Also The this study revealed that the was improvement on mothers' knowledge regarding antenatal care from (7%) pre education to (67%) post education with mean score 3.7 pre teaching to 37.3 after teaching program. **Conclusions:** There was remarkable improvement on mothers' knowledge following the educational program. Enhance periodic programs such as education program for pregnant women concerning knowledge and awareness on antenatal care to increase mothers' knowledge in study area.

Keywords: Pregnant Follow up, Maternal Mortality, Woman's learning.

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المستخلص

معلومات أساسية: ترتبط مشاكل زيادة اعتلال الأمهات ووفياتهن في البلدان النامية مثل السودان بمعرفة الأمهات ووعيهن أثناء الحمل. وتعليم المرأة تأثير على السلوكيات الصحية التي تسعى إلى الحصول على الرعاية الصحية وزيادة الوعي بالرعاية أثناء الحمل. الاهداف: هدفت الدراسة تقييم أثر برنامج التثقيف الصحي على معرفة الأمهات فيما يتعلق بالرعاية أثناء الحمل. المنهجية: دراسة تدخلية أجريت بين 150 امرأة حامل يترددن على مركز رعاية الحوامل في منطقة الحواتة. وتراوحت أعمارهم بين (15- 49 سنة) في الثلث الأول والثاني. وقد جُمعت البيانات على مراحل، حيث جُمعت معلومات ما قبل التدخل، وتنفيذ البرنامج، وكانت المرحلة الأخيرة هي تقييم ما بعد التدخل. تم تحليل البيانات بواسطة الحزمة الإحصائية

المستخدمة للعلوم الاجتماعية . النتائج: تبين أن المتغيرات مثل العمر، والتعليم، والمهنة، الزيارات اثناء الحمل ترتبط ارتباطا كبيرا بتعليم المرأة. كما كشفت هذه الدراسة أن التحسن كان على معرفة الأمهات فيما يتعلق بالرعاية اثناء الحمل من (7%) قبل التدخل التعليمي إلى (67%) بعد التعليم مع متوسط درجة 3.7 التعليم قبل إلى 37.3 بعد برنامج التعليم. التوصيات: حدث تحسن ملحوظ في معرفة الأمهات بعد البرنامج التعليمي. لابد من تعزيز البرامج الدورية مثل برنامج تثقيف الحوامل فيما يتعلق بالمعرفة والتوعية بشأن الرعاية اثناء الحمل لزيادة معرفة الأمهات في منطقة الدراسة. كلمات مفتاحية: متابعة الحوامل ، وفيات الأمهات، تعليم المرأة

Introduction:

Antenatal Care (ANC), is given different meanings by different scholars, among others the meaning that says, "Antenatal Care means care before birth and includes screening, education, counseling, and treatment to promote the well - being of the mother and fetus" Adewoye , et al, 2013). In short it is the care that a woman receives during pregnancy that helps to ensure healthy out comes for women and fetus (Adewoye, et al 2013). Antenatal care raises awareness about the need for care at delivery, and also gives women and their families a familiarity with health facilities that enables them seek help during crisis. Pregnant mothers need to recognize the importance of antenatal care and to receive such care during pregnancy (Nisar et al, 2003). Bbaale (2011) stated that antenatal care (ANC) plays an important role in ensuring a healthy mother and baby during pregnancy and after birth. According to Holmes and Baker Care given at antenatal clinics are geared towards good maternal and child health. Maternal education is important in effecting the health seeking behavior of mothers (Rahman, 2009). Again, it has been shown that health education for mothers can reduce maternal mortality rate by 50 percent (Nisar et al, 2003). In many developing countries, complications of pregnancy and childbirth are the leading causes of death among women of reproductive age. A woman dies from complications from childbirth approximately every minute (WHO, 2005).

ANC also provides information about fetal growth and development and its relationship to the mother's health and promotes healthy lifestyle (US Department of Health and Human Services, 2000). By reviewing the effectiveness of different models of ANC, WHO (2010) recommends minimum four antenatal visits for the uncomplicated pregnancies (routine ANC) and more visits for complicated cases (special care) based on requirement. According to a worldwide survey study, maternal mortality rate tends to be higher in countries where female literacy rate is lower than their male counterparts. The study also revealed women's education as a moderately powerful indicator of maternal mortality and women's education can provide the knowledge to demand and seek proper health care important to reduce complications (US Department of Health and Human Services, 2000). Woman's health seeking behaviors is highly influenced by her educational status: recent studies show that preventive health care services are used to a greater extent by mothers with higher education than their less educated counterparts (Ezeama et al, 2014). Education is an important component of ANC, particularly for women who are pregnant for the first time (Silva, et al, 2013). Education increases awareness of causes and deleterious effects of bad health which in turn increases the demand and utilization of health care (Edie Halle 2015). Improved educational status of women may help them to empower and

improve their ability to manipulate their surroundings as well as to have control over their own health. Education may also help them to have economic power, decrease feeling of shyness for childbirth, expanded support and communication with husband and other family members which all can contribute in increased number of ANC visits. Moreover, education can minimize the effect of distance to health care centers and time to reach their as educated mothers prioritizes her own and baby's health and safety first (Donnay F, 2000). Several studies support that women's autonomy and decision making power over their own health influences the utilization of ANC services and education can help them to overcome (Heaman, & Helewa, 2008). A study in India conducted to find out the relation between maternal education and maternal health care utilization recommended that in a setting where illiteracy is high, improving access to health facilities should go hand in hand with educating women as female education has an impact on factors that reduce maternal mortality (Matsuyama A, 2012). Good care during pregnancy promotes the health of mother and development of unborn baby and links the women and her family with the formal health system, increases the chance of delivering with a skilled attendant at birth and contributes to good health through the pregnancy and the post-natal period; inadequate care during this time breaks a critical link in the continuum of care and affects both women and babies (WHO 2005).

Materials and Methods:

Study design:

Quasi experimental study pre and post-intervention one group, was conducted in antenatal center, aimed to evaluate the impact of health education program on mothers' knowledge towards antenatal care.

Study setting:

Al- Hawata is the one of administrative unit of Al-Gadarif state. It's located in the North West Al-Gadarif.

Study population:

The study population was 150 pregnant women in the first and second trimester, aged between (15-49) years, the study excluded ladies in their 3rd trimester, from the period April 2016 – August 2016.

Methods of data collection:

One tool was used to collected data by structured questionnaire designed by the researcher including (socio demographic data, knowledge about antenatal care, diet, exercise during pregnancy, preventing anemia, lifestyle, danger signs in pregnancy and care for the new born). The data was collected in three phases: Pre interventional Phase, interventional Phase and follow up phase.

Variables:

The questionnaire was including these variables:

Background information:

These background characteristic include age, education level, occupation, and marital status, number of children and age of the last child.

Dependent variables:

Gain in knowledge about antenatal care.

Independent variables:

Teaching program on mothers' knowledge regarding antenatal care

Training of data collectors:

Twelve female interviewers and three field supervisors of graduate education level were hired they were trained by seminar for three days focusing on skills of how conducting the interviewing. The seminar had eight objectives:

- Discuss the signs and symptoms of pregnancy.
- Define antenatal care.
- State antenatal schedule visits.
- Discuss the safe food requirements during pregnancy and how to prevent anemia during pregnancy.
- Describe the danger signs and symptoms of pregnancy.
- Discuss the lifestyle and hygienic precautions of pregnant women.
- Explain how to conduct the interview.
- Explain how to give health education to women.

Each objective had clearly stated content and time frame for presentation. Presenter teaching strategies include power point presentation, lectures and handouts. The conduct was based on antenatal care standards WHO 2010.

Data analysis and clearance:

Data was analyzed by using statistical package for social sciences SPSS. Chi-square was used for comparison between data before educational program implementation and then 1 month and 3 months after program implementation.

Ten questions were used for knowledge; each correct answer has 1 mark and no mark for incorrect answers and mothers' knowledge was evaluated according to the following scale:

Poor knowledge: 10%-39%

Average knowledge: 40%-79%

Knowledgeable: 80% and above.

Ethical consideration:

The ethical approval was obtained from the Institutional Review Board at AlNeelain University; permission was obtained from the local health authority and informed consent was obtained from individual participants prior to the interview.

Results and Discussion:

The highest percentage of the study group was employed (66%), there was a significant association according to education level, occupation and mothers have more than three children.

This study revealed that the mean age of respondents was between (23-30) years, similar to what had been mentioned by Ezeama 'et al (2014), they reported that the mean age of the study group was between (22-30) years. This study showed that there was no significant association between age group and overall knowledge about antenatal care P-Value = 0.292. This is similar to what had been reported by Fatme Davari (2013), who reported that there was no significant finding between age and overall knowledge p-Value 0.35, and disagree with Agrwal et al (2007), which reported that there was a correlation between age and mothers' knowledge about antenatal care P-Value = 0.002. Findings of this study were similar to findings by Fatme Davari (2013), which said that mothers' knowledge regarding antenatal care was a significant association with education level P value = 0.002.

Pregnant women's knowledge:

The results of this study were supported by the results obtained later by Al Shameried et al (2008), who found that educated mothers had more antenatal visits P Value = 0.009. With regard to knowledge about danger signs during pregnancy, there was a significant correlation between women's knowledge and education level P Value = 0.001, this was similar to what had been reported by Matsuyama A (2012) who said that there was a correlation between education level and mothers' knowledge regarding danger signs during pregnancy P Value = 0.002. The outcome of this study showed a significant correlation between knowledge about normal weight gain during pregnancy P value = 0.002, this agrees with the study done

by Ediet alle (2015), which reported that there was significant association between knowledge pre and post education regarding the normal weight gain during pregnancy P Value = 0.007. With regarding to knowledge about the food requirements during pregnancy, the result of this study supported by findings of Fatme Davari (2013) which showed that women with highly education they were more likely to be aware about the food requirement during pregnancy P Value = 0.003, and in agreement with findings by Habtama Fekadu East Ethiopia (2013), who reported that about half of women don't have enough knowledge regarding the meaning of importance, and the elements source of balance diet during pregnancy. In this study 48% of pregnant women understood that inadequate nutrition during pregnancy would bring fetal complications, this result disagrees with findings by Ashenfi (2017), which reported that, 34% of pregnant women had knowledge regarding inadequate nutrition during pregnancy can cause maternal complication such as miscarriage and preterm birth. The result of present study supported by Chidozie (2014) report, who supposed that most of women had knowledge of pelvic floor exercise, muscle stringing exercise and back care exercise. Also this study revealed that 32% of respondents had poor knowledge about the effect of tea and coffee to pregnant women, the result of this study was lower than the study conducted by Latifa M, et al (2012), which showed that the score of knowledge for study participants regarding the effect of tea and coffee to pregnant were 37%. The outcome of this study, disagrees to what had been reported by Kim Arzoumanian (2007), who said that all respondents had very limited awareness about effect of smoking to pregnant mother, and they don't protect their right to live in clean indoor atmosphere.

Conclusion and Recommendations:

The study concluded that: There was remarkable improvement on mothers' knowledge following the educational program. Enhance Standardized educational programs should be done for antenatal mothers by specialized personnel in antenatal center to increase women's knowledge and awareness about antenatal care in study area. It is recommended that

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Table (1): Demographic characteristics of study sample.

Variables	Characteristics	frequency	Percentages %
Age roup (year)	Less than 15	5	3.3
	(15-22)	35	23.3
	(23-30)	46	30.7
	(31-37)	36	24.0
	(38-44)	28	18.7
	(45-49)	0	0
Education level	Illiterate	11	7.3
	Khalwa	17	11.3
	Primary	40	26.7
	Secondary	62	41.4
	University	20	13.3
Marital status	Married	143	95.3
	Divorced	7	4.7
	Widowed	0	0
Number of child	Less than 3	52	34.7
	(3-6)	83	55.3
	7 and more	15	10.0
Employment status	Unemployed	29	19.3
	employed	99	66.0
	House wife	22	14.7
	Retired		
Age of last child (year)	Less than two	29	19.3
	(2-3)	99	66.0
	More than three	22	14.7

Table (1): Presented that the highest percentage of study group was employed (84%), (7%) illiterate, (55%) have (3-6) children.

Table (2) : Correlation between knowledge and demographic characteristics of study group

	Sum of squares	df	Mean Square	(Of F)	P-value
Age	1.362	4	0.0340	1.244	0.295
Education level	13.992	4	3.498	18	0.000
Marital status	0.091	2	0.046	0.164	0.849
Occupation	10.235	4	2.55	12.036	0.000
Number of children	1.604	3	0.802	2.987	0.042
Age of last baby	2.382	3	0.794	2.99	0.033

Table (2): Showed that there was significant association according to education level, occupation & mothers have more than three children.

Table (3): knowledge of mothers regarding ANC pre & post intervention

Knowledge about	Pre education			Post education			Follow up			Level of significant
	n	correct	In correct	n	correct	Incorrect	n	correct	In correct	
Time of first antenatal visit	n	12	138	n	98	52	n	102	48	0.002
	%	8	92	%	85	34.7	%	68	32	
number of antenatal visit	n	2	148	n	116	34	n	117	33	0.001
	%	1.3	98.7	%	77.3	22.7	%	78	22	
Danger sign	n	70	80	n	120	30	n	126	24	0.000
	%	46.7	53.3	%	80	20	%	84	16	
Weight gain	n	9	141	n	103	47	n	100	50	0.000
	%	6	94	%	68.7	31.3	%	66.7	33.3	
Food rich of iron	n	63	87	n	126	24	n	124	26	0.001
	%	42	58	%	84	16	%	82.7	17.3	
Food rich of calcium	n	82	68	n	130	20	n	132	18	0.002
	%	54.7	45.3	%	86.7	13.3	%	88	12	
Benefit of exercise	n	5	145	n	124	26	n	129	21	0.002
	%	3.3	96.7	%	82.7	17.3	%	86	14	
Effect of coffee	n	24	126	n	109	41	n	123	27	0.000

&tea	%	16	84	%	72.7	27.3	%	82	18	
Effect of smoking pregnant	n	14	136	n	117	33	n	131	19	0.003
	%	9.3	90.7	%	78	22	%	87.3	12.7	
Effect of stress to pregnant	n	21	129	n	122	28	n	127	23	0.002
	%	14	86	%	81.3	18.7	%	84.7	15.3	

Table (3): Revealed significant associations after education program regarding respondents Knowledge.

Table (4): Level of mothers' knowledge regarding ANC pre & post intervention

Score	Knowledge					
	pre education	Percentage %	Post education	Percentage %	Follow-up after-3 months	Percentage %
Poor knowledge	125	83	11	7.3	20	13.3
Average knowledge	15	10	38	25.3	35	23.3
Knowledgeable	10	6.7	101	67.3	95	63.4
Total	150	100	150	100	150	100

This scale showed significant change in post education regarding their knowledge from 7% to 67.3%.

Score of knowledge:

Poor knowledge. 10 – 39%

Average knowledge. 40 – 79%

Knowledgeable. 80% and above.

Table (5): Correlation between pre and post-test of respondent.

	Group	N	mean	St-D	T-Value	P-value
correlation	pre	150	45.71	15	172.342	0.003
	Post	150	74.54	31		
	Follow up	150	74.52	30.5		

Table (5) showed there was strong significant correlation between pre & post education P value = 0.003.