

Effects of community-based family planning education program on knowledge of family planning methods among married women in Khartoum state, Sudan

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Abstract

Background

Family planning (FP) is an important strategy in promoting maternal and child health. Although family planning was initiated in Sudan in 1965 and then incorporated into the Primary Health Care System in 1985, the utilization rate remains low, which is among the lowest countries in the region. The study aimed to evaluate the effects of a Community-based Family Planning Education Program on knowledge of family planning methods among Married Women in Aldaroshab and Alkadaro Areas, Khartoum State, Sudan.

Methods

This was a Quasi Community interventional study design. It was conducted in Sudan, Khartoum state, Aldaroshab and Alkadro areas. December, 2020. A Family planning program was invented as an intervention program. The population frame included all married women in age (15–49) years in research areas. The sample size was calculated by computerized method, the sample size 456 mothers. The data was collected by a questionnaire designed to measure mothers' knowledge, the questionnaire consisted of 30 questions covering the different aspects of family planning. Respondents were divided into two experimental and control groups randomly. The intervention group were women of Aldroshab area and the control group was women of Alkadro area. The data was collected by the researcher and assistants. A pre-evaluation was done on the knowledge of family planning using a structured questionnaire.

Results

The findings showed that knowledge of women has significantly increased ($P = 0.01 < 0.05$) from 40–85% after program intervention. The most source of family planning information for women was from the TV/Radio (51%). The study results showed most of the intervention and control groups were illiterate (40%)

Conclusion

The study concluded that a family planning program intervention has significantly increased the mother's knowledge regarding family planning.

Background

In order to promote mother and child health, family planning is an important technique, and it gives women a broader perspective on birth control, reproductive health, and pre-conception counselling [1]. Family planning has been defined, as parents can have as many children as they wish and space their

pregnancies apart with family planning [2]. In some countries of the Middle East and North Africa, maternal mortality has not decreased by more than 25% [4]. Three-quarters of maternal deaths occur after childbirth and the first few weeks after birth [5]. In Sudan, the Maternal Mortality Rate (MMR) is estimated to be 750 per 100,000 people, according to the Households, Health Survey, the prevalence of family planning, utilization in Sub-Saharan Africa is 22.1% [6]. A recent report from (72) countries showed that family planning, utilization is a preventative strategy that reduce maternal mortality rate of women [7]. Regarding the married couples in Sudan and family planning methods, a study conducted in Sudan found that a small number of married couples use family planning methods [8].

In order to gain a better knowledge of the socioeconomic factors that influence the use of family planning, a study it was found that men have always played a major role in decisions affecting women's reproductive health, family planning professionals, on the other hand, assume that men are less interested in reproductive issues [9]. Family planning is influenced by a variety of circumstances, all of which have an impact on how it is used. (Caldwell) have emphasized the importance of African countries' social cultures in maintaining the importance of family planning [10]. Furthermore, reports reveal that family planning use is fast expanding in most countries, but far less so in Arab and Sub-Saharan Africa [11]. According to reports, developing maternal health services in a context-appropriate manner could enhance demand-side access [12]. And there are different intervention programs were conducted to increase the use of contraceptive methods [13].

Methods

A Quasi-Community Interventional was conducted in two local areas in the Khartoum north, Sudan in December, 2020. Area was randomly selected to act as the intervention group.

The study population consisted of married women between the ages of (20–50) in Aldaroshab and Alkadro areas. Criteria for the participants consist of all mothers in the study areas who are in the age (20–50) years. Exclusion criteria married women who are infertile. The sample size was selected from the two search areas by computerized method using the (Roasoft) website, with confidence Level 95%. The sample size of the study was 456 participants the researcher was select 500 participants because expected some drop can occur during the study. Divided into the intervention group (250) and the control group (250). Sampling technique: The two areas were written in a closed paper to select one for intervention and the other to study randomly. The sample was selected from 33 blocks. To choose five blocks for each region selected randomly by writing blocks in the closed papers. Fifty of mothers from each block. Data were collected by using the quantitative method a questionnaire designed by researchers to measure the score of knowledge of mothers in both groups. Was filled before starting the program and after eight months at the end of the study. Data were collected using questionnaire consisted of 30 questions covering the different aspects of family planning knowledge. Data Analysis for this study by Pre- and post-test data were grouped, categorized, and tallied using numbers and percentages. In the statistical package for social sciences, the independent sample t-test was utilized (SPSS version 23) to evaluate whether there is a significant difference at the level of 0.05.

Results

Table 1. Shows the demographic characteristics of the study participants (456). Most of the subjects (72.37%) were 20–30 years old. The majority of subjects (40.4% & 33.8 respectively) were illiterate and secondary school educational level in intervention group. Regarding occupation Most of subjects were housewives in intervention group (71.1%) and (63.59%) on control group. Level of income is medium in intervention group and control group (70.2% & 54.82% respectively).

Table 1
Shows the distribution of the research participants' demographic characteristics

Variable	Intervention group No (%)	Control groups No (%)
Age in years:		
< 20	21 (09.21)	26 (11.40)
20–30	165 (72.37)	155 (67.98)
31–40	30 (13.16)	37 (16.22)
41 years and more	12 (05.26)	10 (04.38)
Educational level:		
Illiterate	92 (40.4)	99 (43.42)
Primary	41 (18.0)	31 (13.59)
Secondary	77 (33.8)	65 (28.50)
University and above	18 (7.9)	33 (14.47)
Level of income:		
Low	29 (12.7)	40 (17.54)
Medium	160 (70.2)	125 (54.82)
High	39 (17.1)	63 (27.63)
Number of children		
< 5	70 (30.7)	55 (24.12)
5–10	138(60.5)	140 (61.40)
> 10	20(8.8)	33 (14.47)

Table 2 shows the correct answers of the participants at posttest too high than that of the control group, regarding the definition of family planning. as spacing between births, the correct answer was mentioned

by 209(91.7%) of the control group at posttest compared to 55(24.5%) of the same group at pretest measurement.

Table 2
Distribution of the participant's knowledge about definition of family planning

Items	Pretest (n = 228)		Posttest (n = 228)		T	P
	Correct	Mean	Correct	Mean		
	No (%)	±SD	No (%)	±SD		
Stop giving birth	123(53.9)	0.61 ± 0.7	195(85.5)	1.54 ± 0.4	-13.2	0.01
Spacing between births	55(24.5)	0.68 ± 0.8	209(91.7)	1.64 ± 0.7	-13.3	0.01
Limitation of births	197(85.5)	0.57 ± 0.6	203(89.0)	1.67 ± 0.6	-15.8	0.01
Prevent STD	156(68.4)	1.25 ± 0.8	202(88.6)	1.82 ± 0.9	-9.0	0.01
Timing of birth	192(85.1)	0.69 ± 0.4	208(91.2)	1.51 ± 0.8	-10.4	0.06

Table 3
Distribution of the participant's knowledge about methods of family planning

Items	Pretest (n = 228)		Posttest (n = 228)		T	P
	Correct	Mean	Correct	Mean		
	No (%)	±SD	No (%)	±SD		
Natural methods	94(41.2)	0.71 ± 0.84	186(81.9)	1.75 ± 0.5	-15.4	0.01
Hormonal methods	54(23.7)	0.66 ± 0.51	196(90.4)	1.50 ± 0.8	-10.9	0.02
Surgical Methods	44(19.3)	0.57 ± 0.8	168(73.7)	1.46 ± 0.7	-12.4	0.01
Mechanical methods	50(21.9)	1.67 ± 0.6	148(64.9)	1.56 ± 0.7	-15.8	0.01

Table 4
Participants knowledge regarding characteristics of natural methods of family planning pre and posttest

Items	Pretest (n = 228)		Posttest (n = 228)		T	P
	Correct	Mean	Correct	Mean		
	No (%)	±SD	No (%)	±SD		
Meaning	96(42.1)	0.75 ± 0.06	176(77.5)	1.69 ± 0.09	-7.8	0.01
Effectiveness	75(32.9)	0.59 ± 0.03	210(92.1)	1.89 ± 0.01	-9.2	0.04
Advantages	86(37.7)	0.41 ± 0.04	198(86.8)	1.76 ± 0.12	-8.4	0.01
Side effects	84(36.8)	0.82 ± 0.12	174(78.3)	1.73 ± 0.08	-11.9	0.07

Table 5

Participants knowledge regarding characteristics of hormonal methods of family planning pre and posttest

Items	Pretest (n = 228)		Posttest (n = 228)		T	P
	Correct	Mean	Correct	Mean		
	No (%)	±SD	No (%)	±SD		
Meaning	56(23.5)	0.46 ± 0.06	202(88.6)	1.78 ± 0.04	454	0.01
Effectiveness	62(27.2)	0.43 ± 0.05	182(79.9)	1.77 ± 0.07	454	0.02
Advantages	48(21.1)	0.97 ± 0.05	144(63.2)	1.81 ± 0.06	454	0.02
Side effects	86(37.7)	0.44 ± 0.07	184(79.7)	1.82 ± 0.04	454	0.03

Table 6

Participants knowledge regarding characteristics of mechanical methods of family planning pre and posttest

Items	Pretest (n = 228)		Posttest (n = 228)		T	P
	Correct	Mean	Correct	Mean		
	No (%)	±SD	No (%)	±SD		
Meaning	200(89)	1.01 ± 0.55	204(89.5)	2.01 ± 0.77	1.03	0.25
Effectiveness	204(90)	1.12 ± 0.35	194(85.1)	1.33 ± 0.23	-0.33	0.32
Advantages	180(77.5)	1.03 ± 1.02	172(75.4)	1.01 ± 0.21	-0.33	0.33
Side effects	201(88.5)	2.01 ± 1.02	196(86.0)	1.11 ± 0.43	1.05	0.55

Table 7
Participants knowledge regarding side effect of family planning pretest and posttest

Items	Pretest (n = 228)		Posttest (n = 228)		T	P
	Correct	Mean	Correct	Mean		
	No (%)	±SD	No (%)	±SD		
Delay pregnancy	20(8.8)	0.39 ± 0.04	214(93.3)	1.73 ± 0.04	-23.2	0.01
Irregular menstruation	98(43.0)	0.69 ± 0.05	206(90.4)	1.51 ± 0.07	-11.7	0.03
IUDs can cause perforate	96(42.1)	0.63 ± 0.04	206(90.4)	1.85 ± 0.03	-26.5	0.02
Hormonal method can cause headache and vomiting	22(9.6)	0.38 ± 0.04	168(73.7)	1.82 ± 0.04	-29.3	0.01

Table 8
Distribution of Sources of information knowledge regard family planning.

Source of information on family planning	Control groups No (%)
Health personnel	28(12.4)
Family planning center	68(29.8)
Relative, family, and friends	11(4.8)
TV/Radio	98(42.9)
Books and newspapers	23(10.1)

Discussion

The present study investigated mothers' knowledge of different methods of family planning before and after the intervention of the educational program in Khartoum state, the study was conducted on 456 women.

Regarding the demographic characteristics of the participants most of their ages were between 20–30 years (72%), and educational level, it was found that the illiteracy rate was about 40%, this result is the opposite of the result of a study conducted in one of the states of Sudan, the illiteracy rate for women was low at 9% [14].

Concerning the definition of family planning as spacing between births, the correct answer was mentioned (24.5%) in the pre-intervention measurement increased to (91.7%) at post-intervention; the p-value was (0.06) indicating significant differences between post control, pre and intervention measurements regarding this item. This finding is consistent with a study conducted in Cameroon and Nigeria which showed 24% and 72.9% respectively [15, 16].

Related to participants' knowledge about methods of family planning correct answers were only 26%, this percentage increased to 80% after conducting the educational program the education program effect and improve their knowledge about methods of family planning post-test there is a significant difference ($P < 0.02$). This result is similar to a study conducted in Urban Cameroon about methods of family planning [17].

Concerning of knowledge about the natural methods of family planning, the percentage of knowledge increased after conducting the education programs from 40–85%, ($p = 0.01$), this is similar to study that agree with this finding awareness of natural methods in Sub-Saharan Africa 52% [18].

In our study knowledge score of hormonal methods of family planning before the educational intervention, it was 40%, it increased 83% after conducting the educational program (p value = 0.02). This result is supported by study conducted in Sudan showed increased knowledge from 36–72% after health education program [19].

Knowledge regarding mechanical methods of family planning showed high in pre-test when compared to other methods of family planning, (p value = 0.4). The findings of this study is agree with the study conducted in Sudan [20].

Knowledge about the side effect of family planning also increased significantly from 30% before the education program to 87% after it. (p value = 0.01). This finding was similar to a study conducted in Kingston, Jamaica that found that health education increases awareness of the side effects of contraceptives. [21].

The present study showed overall correct knowledge was 84.7% at post-intervention program compared to 40.1% at pre-intervention program. This finding supported by a study conducted in India found that Increasing knowledge about family planning from visiting medical health centers and received health information [22].

Regarding sources of knowledge for family planning, in our study, 43% of women learned about family planning from the media. (TV/Radio) and 30% from the health care centre. Similarly, to our findings, a Ugandan study found that exposure to electronic media messages was the most important determinant in women's adoption of family planning methods [23].

Conclusion

Knowledge of the participants regarding family planning significantly increased after intervention for all parameters including the meaning of family planning, methods of family planning, benefits of family planning, natural methods of family planning, hormonal methods, and mechanical methods of family planning.

Abbreviations

FP

Family planning

PHC

Primary Health Care

MMR

Maternal Mortality Rate

TV

Television

Declarations

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Authors' contributions

E.S. and A.J. Conceived and designed the analysis, wrote the main manuscript text, collected the data W.S. prepared figures and tables. All authors reviewed the manuscript.

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Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate

The authors were sure that this study was conducted in accordance with the standards set out in the Declaration of Helsinki. An ethical approval letter has been obtained from the ethics committee of the National Ribat University issued a written official letter to do the study. (ethical approval code:

JRO/17/J/1/2). Informed consent was obtained from all subjects. In the case of illiterate participants, Informed consent was obtained from legal guardians.

Consent for publication

Not applicable

Competing interests

All authors have no competing interest and declare that this study is original article.

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Figures

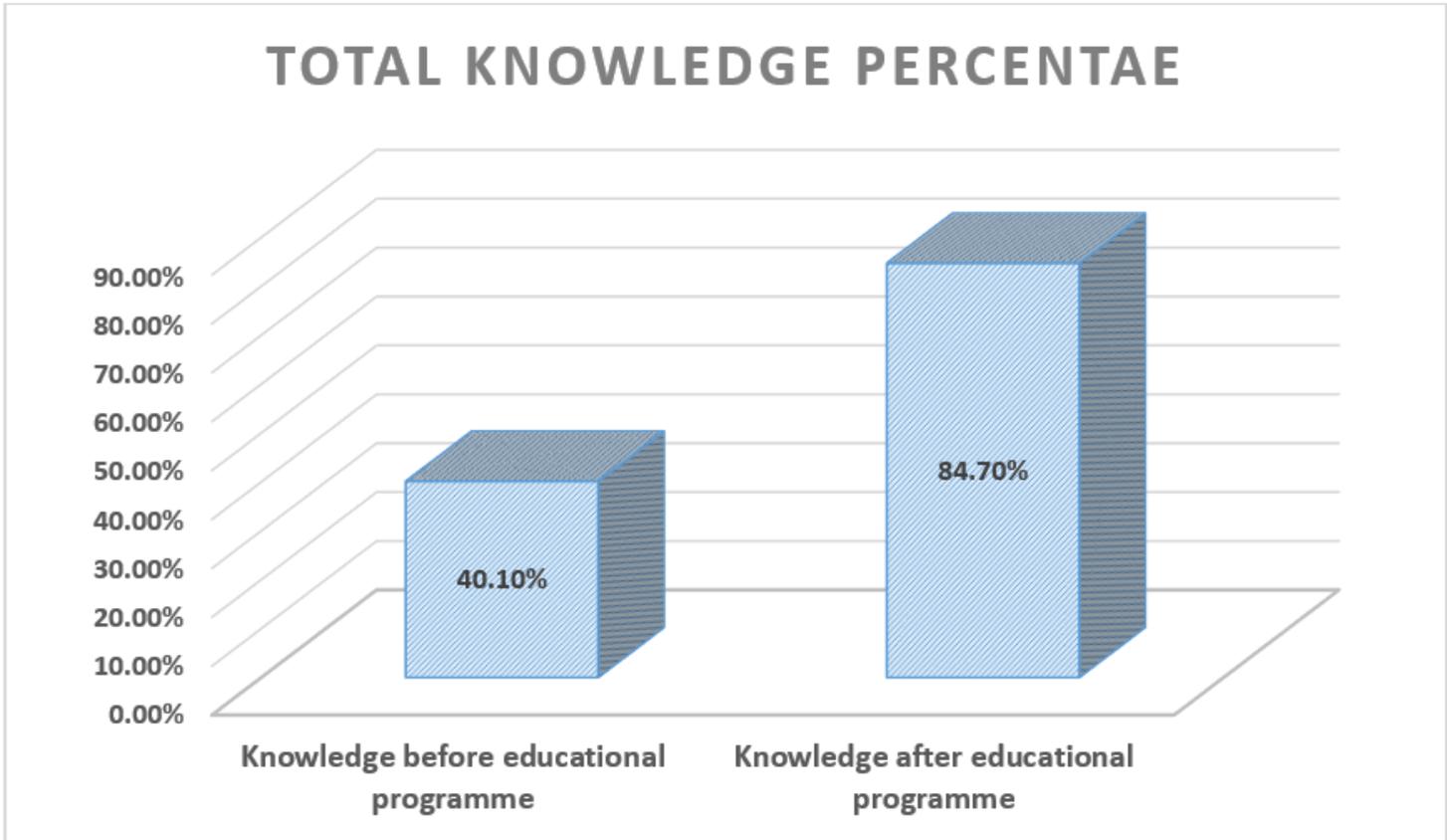


Figure 1

Effect of family planning educational programme on women over all knowledge related to family planning aspects pre and posttest.