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Full Length Research Paper

The Effects of Community-based Reproductive Health Workers on the Utilization of Family Planning Services in Yemen

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Abstract

This study focused on community health workers who were trained within the project of community-based reproductive health promotion (CBRHP), to explore its effects on the utilization of family-planning services in their communities. A cross-sectional comparative study was conducted in two villages of the project and two non-intervened villages. The study was conducted after 19 months from the intervention date. Stratified proportional random sample was applied for the selection of the household. Equal numbers of participants were interviewed with questionnaire from both study arms with involvement of both sexes. Data analysis was made, interpreted with odd ratios (ORs) and 95% confidence interval (CI). The rate of ever used of modern contraceptive methods was higher among people in the intervention areas (74.5%) in comparison to the non-intervention areas (51.1%). Families with children younger than two years were using contraception more than those who have children older than two years (OR = 4.37, (1.79 – 10.64) with 95% CI P = 0.001). The age of the last child adjusted ratio (AOR= 2.62) was less than the crude OR (3.41). The study concluded that CBRHP volunteers contributed to provide contraceptive methods for more than two thirds of people in the intervention areas.

Keywords: Yemen, Reproductive Health, Family-Planning, Health-Promotion, Community-Based Distribution, CBRHP.

INTRODUCTION

Yemen has a high Total Fertility Rate (TFR) with 6.1 births per woman which is related with a high maternal mortality ratio. The unmet need for family planning is 51% and the contraceptive prevalence rate for modern methods is estimated to be only 13.4 % and it is notably higher in urban 27% than rural areas 9.2% (FHS 2003).

Certainly, the provision of reproductive health and basic obstetric services has increased in Yemen in the last decades. However, this expansion is still not able to meet the growing needs of the population. Glancing over the MDGs, MDG5 (improving maternal health) is unlikely to be achieved, the progress in creating accessibility to reproductive health services is not enough to reach the goal if the current situation persists. Furthermore, the maternal mortality ratio deteriorated and increased from 351/100,000 live births in 1997 to 365 cases in 2003 (FHS 2003). However; the recent demographical health survey revealed that MMR is 148/100,000 live births for the past two years (NDHS 2013) several interventions have been undertaken to reduce maternal mortality and to meet the need of people for reproductive health services. Increasing health awareness among the population about reproductive health and family planning using community health volunteers is consider one of the most important intervention the same holds for expanding obstetric care services, and providing free obstetric care drugs and family planning methods (Al-Arhabi, Al-Hawri et al. 2010).

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The health systems in developing countries are often fragmented and in need of vigorous efforts for improvement (HLF 2004). For instance; Afghanistan, Angola, Democratic Republic of Congo, Myanmar, Niger, Nigeria, Somalia and Sudan are consistently mentioned in various categorizations of fragile states. Together, they hold 58% of people living on less than a dollar a day; The Fragile states are sharing a range of characteristics: state collapse, loss of territorial control, low administration capacity, political instability, neo-patrimonial politics, conflict-affected and repressive politics.

Yemen is one out of 57 countries that suffer from critical shortage in health workforce. Health service providers are particularly scarce in rural areas; such situation raises the need to recruit community health workers as a complementary to the formal health system to increase access to the basic health services. Ethiopia and Pakistan are examples of countries recruiting and training female health workers in rural areas as community health workers (CHWs) (WHO 2006). The density of health workforce in Yemen (doctors, nurse and midwives) per 1000 population is 0.33, 0.65 and 0.01 respectively according to the world health report 2006 and the density of community health workers is about 0.29 per 1000 of population. In comparison, in a developed country like the UK, there are more than three doctors and twelve nurses per one thousands of population(WHO 2006).

The introduction of modern contraceptives remains a challenge in Yemen due to the dominant traditional knowledge and religious believe that having more children give more power. The community-based distribution (CBD) was adopted as an important intervention to meet the enormous need for modern contraception in rural areas(Hassan and Ba'athar, 2007). Approach of CBRHP was introduced to the key people in the governorate and district health offices for the selection of villages in close collaboration with local councils, this came as important step to insure the participation of the community in the program implementation(YG-RHP/GTZ 2010).

This study focuses on community health workers who were trained within the project of "community-based reproductive health promotion" (CBRHP). They are called CBRHP volunteers.

The purpose of this study is to explore the effects of community-based intervention on utilization of family-planning services in communities which implemented CBRHP.

METHODOLOGY

A cross-sectional comparative study was conducted in two villages with intervention of the CBRHP program and two non-intervened villages. The study was conducted after 19 months from the intervention date Dec 2009. Stratified proportional random sample was applied for the selection of the household.

With the use of Epi-Info software ™ version 3.5.1 (US, CDC), sample calculation gave overall 94 participants (either the wife or husband) using a structured, pretested questionnaire from both study arms with involvement of both sexes.

The data has been analyzed using the SPSS (Ver. 15). Outcomes were compared between intervention and non-intervention group. Chi-square tests were applied to examine the association between contraceptive use and presence of CBRHP volunteers. Furthermore, logistic regression was applied to examine the effects of CBRHP and socio-demographic factors on the current use of the contraceptive method. The result of the regression analysis was presented by odd ratios (ORs) with 95% confidence interval (CI).

Definitions

Ever used contraceptive; women who have history of using contraceptive

Current used contraceptive; women who used contraceptive during time of investigation

Traditional contraceptive; include withdrawal method and calendar method.

Modern contraceptive; include all medically approved methods except the traditional methods mentioned above with focus on the most used methods such as Pills, Injection, IUD and condom.

RESULTS

The study's findings show that, the ever used of modern contraceptive methods (pills, injection, IUD and condoms) among people in the intervention areas (74.5%) was increased in comparing with those in the comparison areas (51.1%), as shown in table 1. The current use of modern contraceptives showed a significant increase of 51.1% in the exposed areas versus 23.4% in the non-exposed areas (OR = 3.4, 95%CI (1.4, 8.3)) (Table 2).

Oral contraceptive pills were the most commonly used contraceptives among women in both areas. However, table 3 has shown the usage of the pills was higher the intervention areas than the non-intervention areas (63.7% and 27.7% respectively). Vice versa, the usage of contraceptive injection was higher in the non-exposed areas than in the exposed areas (21.3% and 4.3% respectively), see figure 1.

In this study the socio-demographic variables are adjusted in order to compare the usage of contraceptives between the exposed areas and those which not. The education level has not showed significant difference (P=0.183) where the illiterates showed an overall higher usage of contraceptives than

Table 1. Percentage distribution of respondents by family planning usage and socio-demographic characteristics, according the status of exposure to CBRHP

Usage of modern family planning			CBRHP exposed	Non-CBRHP exposed
Total of modern family planning methods ever used			74.5	51.1
(Chi-square = 5.508, P < 0.05)				
Total of Current usage of modern family planning methods			51.1	23.4
(Chi-square = 7.693, P< 0.01)				
Current age group (Year)	< 35	ever used	40.7	28.8
		current use	48.6	22.9
	35 and more	ever used	18.6	11.9
		current use	20.0	8.6
Level of education	Not educated	ever used	13.6	22
		current use	8.6	20
	Educated	ever used	45.8	16.6
		current use	60	11.4
Number of living children	1 - 4	ever used	39	22
		current use	42.9	17.1
	5 and more	ever used	20.3	18.7
		current use	25.7	14.3
Last child age (Month)	≤ 24	ever used	22	25.4
		current use	20.0	14.3
	> 24	ever used	37.3	15.3
		current use	48.6	17.1

Table 2. Odd ratios from binary regression analysis of the associations between selected characteristics and the current use of family planning with 95% confidence interval (CI)

Variables		OR	Lower limit	Upper limit	P-value
Ever use of FP methods	exposed to CBRHP	2.79	1.17	6.67	0.02
	Non-exposed to CBRHP	1			
Current use of FP methods	exposed to CBRHP	3.41	1.41	8.27	0.007
	Non-exposed to CBRHP	1			
Education	Not educated	1.84	0.750	4.507	0.183
	Educated	1			
Number of children	1 - 4	0.813	0.329	2.006	0.65
	5 & more	1			
Age of last child	≤ 24 months	4.37	1.79	10.64	0.001
	> 24 months	1			

Table 3. Distribution of current source of modern contraceptive methods among users according the exposure status to CBRHP

Measures	CBRHP Exposed (%)	Non-CBRHP exposed (%)
Volunteers	69.4	-
Health facility	5.4	54.1
Both volunteers and Health facility	13.8	-
Drug shop	2.7	12.5
Outreach activities	5.4	29.2
Did not know	2.7	4.2

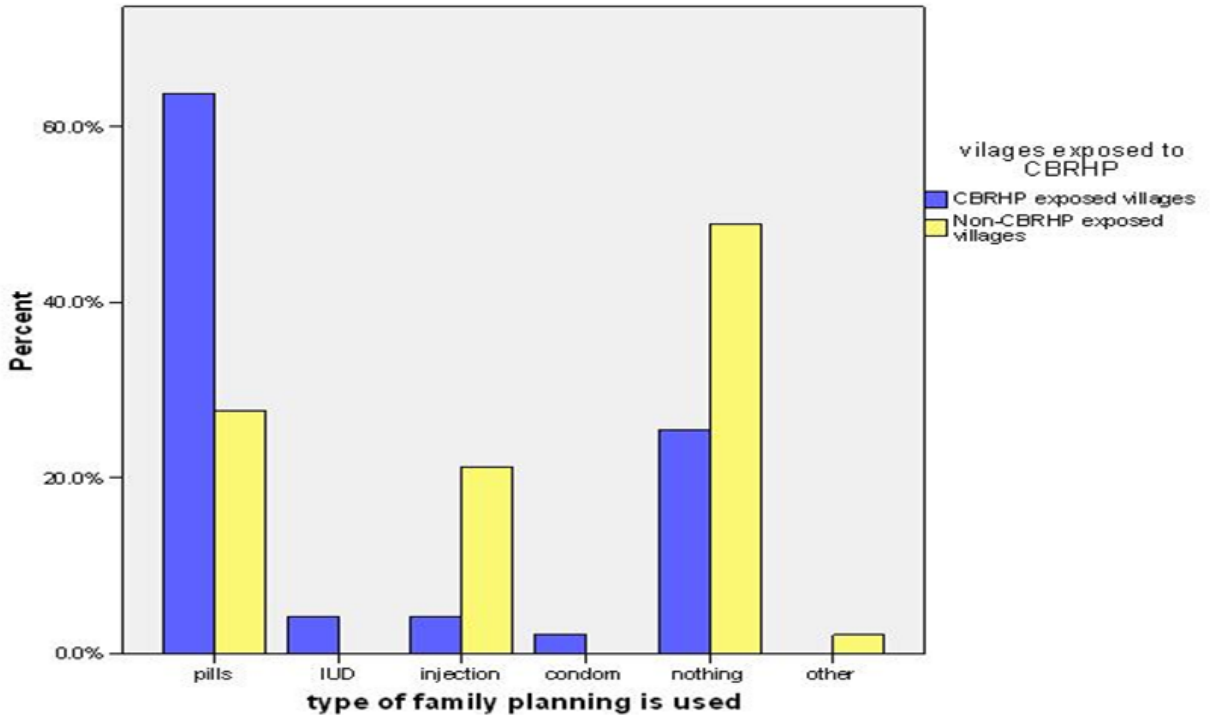

Figure 1. Distribution of modern contraceptives have been used according the status of exposure to CBRHP

Table 4. Adjusted odd ratios from Multivariate logistic regression analysis of associations between selected characteristics and the current use of family planning according the exposure to CBRHP with 95% confidence interval (CI)

Variable		OR	(95% CI)	P
Current use of FP	Crude OR	3. 41	(1.41 8.27)	0.007
	AOR for last child age	2.62	(1.03 – 6.65)	0.043

AOR: Adjusted odds ratio.

those educated people (OR = 1.84, 95%CI 0.8 – 4.5). Similarly, with the age of the last child in the family, the findings showed that, the usage of contraceptives methods was still increased in the CBRHP exposed areas, the study shows that the families' with children younger than two years are using contraception more than those who have children older than two years (OR = 4.4, 95% CI 1.8 – 10.6 and P = 0.001).

A multiple logistic regression analysis conducted for those factors of p value <0.05. Adjusted odds ratio (AOR= 2.6, 1.03 – 6.65 and P <0.05) was found the age of the last child is likely associated as determination with the use of FP methods in exposed and non-exposed group to the CBRHP, as seen in table 4.

DISCUSSION

The study's findings show that, the ever use of modern contraceptive methods among people in the intervention areas was higher than non-exposed community. The family health survey of 2003 reported that the ever use of modern contraceptives in Yemen was 27.9%(FHS 2003). The activity of the CBRHP volunteer has shown through the differences in the rate of current use of modern contraceptives with a significantly higher in the exposed areas than the non-exposed areas and on the overall rate of the country (FHS 2003). A study conducted in Pakistan showed that in the areas of the CBD program, the current use of modern family planning methods was significantly increased (Douthwaite and Ward, 2005).

On the other hand the availability of oral pills distributed by CBRHP volunteers led to higher percentage of use of the pills than any other modern method of family planning such as contraceptive injection. The later was seen more used among the non-exposed community. This probably explained that, in the case of absent of the CBRHP volunteers, people may seek advices from central clinics in other areas where advices probably given to use this type of contraceptive and because of the far access to the source of the family

planning tools, women in these areas prefer the use of a three months injection rather than visit a health facility monthly to get one strip of oral pill.

In this study the socio-demographic variables are adjusted in order to compare the usage of contraceptives between the exposed areas and those which not. In some studies elsewhere, has shown that, level of education was known to have a positive effect on the usage of modern family planning methods (Gustavo et al., 2005; John et al., 2007; Kamal, 2009). In this study the level of education has no significant difference (P=0.183) where the illiterates showed an overall higher usage of contraceptives than those educated people. Similarly, with the age of the last child in the family, the findings showed that, the usage of contraceptives methods was still increased in the CBRHP exposed areas, the study shows that the families' with children younger than two years are using contraception more than those who have children older than two years. This could give an explanation that families were trying to monitoring their family by making separation between children through the use of contraceptive method when they have the last child less than two years of age. However, this was confirmed statistically by the results of the logistic regression analysis when the age of the last child was seen likely associated as determination with the use of FP methods in exposed and non-exposed group to the CBRHP. This shows that even once differences age of the last child is taken in account, there is still a strong association between CBRHP and current use of FP methods. This finding is consistent with a similar study conducted to measure the effect of community-based reproductive health communication in Bihar, India(Daniel et al., 2008). A study conducted in Pakistan provided evidence that the community health program has achieved a progress in increasing contraceptive use (OR = 1.5, 95% CI) among rural women(Douthwaite and Ward, 2005).

In general, our study reveals that CBRHP volunteers contributed to provide contraceptive methods for more than two thirds of people in the intervention areas. Only 5.4% of people got the methods from the nearest health facility. A cross sectional descriptive study conducted in Tanzania showed that only one third of contraceptives were provided by community-based distribution agents (CBD) and the other two thirds were provided by health facilities and drug shops(Simba et al., 2011). In the non-exposed areas 54.1% of people still struggle to get a method from the nearest health facility. This finding is consistent with data obtained from a family health survey that 52.1% of methods were obtained from health facilities(FHS 2003).

CONCLUSION

This study provides evidence that CBRH programs can have an impact positively on contraceptives utilization and maternal health by increasing the accessibility of information and methods of family planning. Thus, achievement in the balanced maternity history, low maternal death, low rate of parity and better health status for mother and her children could be expected. That mean, the recognition of CBRHP volunteers as an integral part of the health workforce was necessary to achieve the goal of improving maternal health.

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