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Knowledge, Attitudes and Practices of Yemeni Women Attending Primary Healthcare Centers in Sana'a City towards Family Planning

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ABSTRACT

Objective: To investigate the knowledge, attitudes and practices (KAPs) of Yemeni women attending primary healthcare centers (PHCCs) in Sana'a city towards family planning (FP).

Methods*:* A descriptive, cross-sectional study was conducted among women attending three PHCCs in Sana'a city; namely, in Hadah, Al-Soneinah and Madhbah zones, between 21 November and 1 December 2011. The study included a sample of 281 married women, where data about socio-demographic characteristics and the KAPs towards FP were collected by interviewing women using a pre-designed, structured questionnaire and then analyzed using appropriate statistical tests.

Results: Of the married women attending the PHCCs in Sana'a, the majority of respondents were from urban areas (96.4%; 271/281), aged between 25–29 years old (23.1% 65/281), employed (75.8%; 213/281) and with primary or secondary levels of education (60.9%; 171/281). In addition, the majority of women had a marriage length of 6–11 years (65.5%; 182/281) and 3–4 children (44.8%; 126/281). The majority of respondents (89.7%) knew about FP, and 60.2% considered it as birth spacing. Moreover, most respondents (87.5%) were aware of at least four methods of FP, and 53.6% heard of modern FP contraceptive methods. Of them, 85.9% and 74.0% heard of contraceptive pills and intrauterine contraceptive devices (ICDU), respectively; however, the least known contraceptive method was the use of male condoms (28.1%). Healthcare providers were the source of information on FP for the majority of respondents (60.5%). The majority of respondents believed that the optimum spacing between births should be two or three years, being 31.7% and 38.8%, respectively. In addition, most respondents (80.8%) believed that both couples must share the decision-making on FP. Socio-cultural beliefs and values were thought to be the most common (57.3%) barriers to the practice of FP.

Conclusions: Although the majority of Yemeni women seeking healthcare after marriage have a good level of knowledge of several traditional and modern methods of FP and their preference of long birth spacing, the use of such methods is still limited to contraceptive pills and ICDU. Therefore, attention should be paid to health education of women on the benefits of using other alternative methods of FP for better family lifestyle, health and well-being.

Keywords: Family planning, Contraceptive, Knowledge, Attitude, Practice, Sana'a

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1. Introduction

Family planning (FP) methods are increasingly used in both developed and developing countries, particularly the use of contraceptive methods (1–3). FP is not only concerned with the planning of when to have children or the use of birth control for reducing maternal and child morbidity and mortality but also with sex education, prevention and control of sexually transmitted diseases, preconception counseling and management, and infertility management (4). In addition, FP offers positive knowledge and practices of reproductive life and, therefore, enhances couples to make informed choices about their reproduction lifestyle, health and well-being (1). However, about 19 million unsafe abortions take place worldwide each year, and about 80,000 maternal deaths from the same cause are estimated each year. Moreover, about 34.5 million women need contraceptive services and supplies (5).

Cultural beliefs and values, behaviors, societal attitudes, economic and political barriers in addition to induced, illegal and unsafe abortions with the unmet need for FP are all important considerations in developing countries that still contribute to the high rates of maternal morbidity and mortality (6). Globally, about one hundred million women or one in every five married women were estimated to be with unmet need for contraception in 1996, particularly in South Asia (1, 6, 7).

Maternal morbidity and mortality are unusual events in developed countries, but they remain high and common health events in several developing countries. Estimates of maternal mortality indicate that about 515,000 women died from causes related to pregnancy and childbirth annually, with a daily rate of over 1,400 maternal deaths and nearly one death every minute (1, 6). South Asian countries show a different picture of contraceptive prevalence rate, induced abortion rate and unmet needs of sexual and reproductive health services (8). Although various strategies and actions have been carried out to reduce pregnancy- and birth-related maternal diseases and deaths, studies from South and Southeast Asian countries indicate that the unmet need for contraception in Bangladesh, Pakistan and India are 18.7%, 23.0% and 27.1%, respectively (9). Thus, the combination of the high unmet need for FP with contraceptive unawareness among the South Asian adolescents and youth increases the risk of mother morbidity and subsequent mortality (1, 6, 9).

The Millennium Development Goals (MDGs), which were announced fifteen years ago, aimed to improve maternal health through reducing by three-quarters the ratio of maternal mortality in childbirth by 2015. Therefore, contraceptive methods and FP programs could play a major role in the strategies aiming at achieving the MDGs (1, 6). Interventions promoting FP programs, services and practices in Yemen face a lot of challenges to be achieved, including early marriage, high mortality rate, low women empowerment, beliefs, poverty, illiteracy and high population growth rate and poor health services (5, 10). Moreover, many low-income Yemeni families believe that FP and contraceptives have adverse effects on the women's health due to their side effects and that using these strategies is against their religious beliefs. Therefore, such beliefs lead to a failure in preventing suspected pregnancies. In addition, these perceptions can affect the critical decisions of the couples about birth spacing and, therefore, the preferable number of children and subsequent family size (5, 10).

The use of FP methods to prevent unwanted and unplanned pregnancies is variable in developing countries. Contraceptive use levels have been increased from 10.0% in the 1960s to more than 50.0% in the 1990s in developing countries (5). For instance, the contraceptive prevalence rate was 42.0% in Morocco and 46.0% in Egypt (5, 11–14). In Yemen, contraceptives were used by only about 10.0% of married women seeking healthcare services. In 1991–1992, however, 23.0% of women reported the use of any method of FP, but only 13.0% used modern FP methods in 2003. In 2006, 27.7% of married Yemeni women used any method of FP, while 19.0% used modern FP methods (5, 10–13). Although communication between couples is a cornerstone in determining the involvement of men in FP (15), changing men's and women's knowledge, attitudes and practices (KAPs) is necessary for harmonious partnership between them in the issues of motivation as well as availability and acceptability of contraception. In developing countries, the proportion of couples who use contraceptive methods varies between 20.0% and 60.0% (15). Approximately, 63.0% of married women are currently using a contraceptive method, with a total of about 716 million women worldwide (1, 4, 11).

Despite the increase in contraceptive use and the decrease in the total fertility rate in Yemen (from 7.7 births per women in 1991-1992 to 6.5 in 1994), the total fertility rate is still considered the highest in the world. Maternal and infant mortality rates were also high at 114 maternal deaths per 10,000 live births and 75 infant deaths per 1,000 births in 1991 (4, 6, 10, 13, 16). Understanding of the women's KAPs towards contraception can help FP program planners, providers and healthcare professionals for maintaining, assessing and re-evaluating the FP educational programs. This will raise awareness, acceptance and practices of FP and, therefore, reduce both maternal and infant morbidity and mortality as well as the possible risks due to unwanted or unplanned pregnancies. In addition, socio-demographic characteristics of women are critical factors to motivate the couples' decisions on FP (10, 17).

In Yemen, unplanned pregnancies remain frequent; however, there is a lack of information on the factors beyond the underuse and misuse of FP (12). Therefore, the present paper aimed to investigate the KAPs of Yemeni women attending primary healthcare centers (PHCCs) in Sana'a city towards FP.

2. Methods

2.1. Study design, setting and ethical considerations

A descriptive, cross-sectional study was performed using a convenience sampling technique of 281 married women aged 15–49 years old and attending three governmental PHCCs in Hadah, Al-Soneinah and Madhbah zones in Sana'a city (94 women from each center) in the period from 21 November to 1 December 2011. Because the principal investigator is not employed at those PHCCs, the data were collected between 4 and 7 p.m. (when the principal investigator was free). All married women visiting the PHCCs were included until reaching the target sample size, provided that they had been married since <1-29 years, had not reached menopause, were mentally sound and gave verbal consent to participate.

Ethical issues were addressed prior to data collection by obtaining permission from the heads of the PHCCs. The protocol was reviewed by the ethical committee of Faculty of Medicine, University of Science and Technology. Verbal in-

formed consent was obtained from all women and their accompanying family members (husbands, mothers or mothers-in-law). Questionnaires were filled in anonymously and did not include sensitive questions. Confidentiality and privacy of respondent women were assured.

2.2. Questionnaire design and data collection

Data were collected by face-to-face interviews over a period of 11 days, where 8–9 interviews were conducted per day, and each interview lasted for about 20-25 minutes.

Arabic questionnaires were constructed from Egypt Demographic and Health Survey-2009 and 2013 to identify KAPs towards FP (11, 12). Each questionnaire was composed of four parts: The first part included questions about socio-demographic characteristics; the second part included questions related to the women's knowledge of the concept and methods of FP as well as their source of information; the third part included questions about the women's attitudes towards FP; the fourth part included questions about women's practices related to FP. To ensure the validity of the questionnaire, questions were made simple, concise and brief for the participants to understand. Moreover, the survey instrument was pretested at the three PHCCs by 14 women before data collection. Accordingly, some changes were made to the interview questionnaire such as rephrasing unclear questions to the respondents.

In this study, modern methods of FP were defined as contraceptive pills, intrauterine contraceptive devices (IUCD), while traditional methods of FP were defined as safe period or periodic abstinence, lactational amenorrhea and coitus withdrawal.

2.3. Data analysis

Collected data were verified, coded, and analyzed using the Statistical Package for Social Sciences (SPSS) software version 16.0 (SPSS In., Chicago, IL, USA). Data were presented as frequencies and percentages.

3. Results

3.1. Socio-demographic characteristics of respondent women

The majority of women attending the PHCCs (23.1%; 65/281) were of 25–29 years, from urban areas (96.4%; 271/281), employed (75.8%; 213/281) and with primary or secondary levels of education (60.9%; 171/281). In addition, the majority of women had a marriage length of 6–11 years (65.5%; 182/281) and 3–4 children (44.8%; 126/281) (Table 1).

Table 1. Socio-demographic characteristics of women attending PHCCs in Sana'a, Yemen (2011)*

Variable		*n* (%)
Age (years)		
	15–19	52 (**18.5**)
	20-24	54 (**19.2**)
	25–29	65 (**23.1**)
	30-34	59 (**21.1**)
	35–39	24 (**8.5**)
	40-44	23 (**8.2**)
	45–49	4 (**1.4**)
Employment status		
	Employed	213 (**75.8**)
	Unemployed	68 (**24.2**)
Education status		
	Illiterate	46 (**16.4**)
	Primary	171 (**60.8**)
	University	64 (**22.8**)
Length of marriage (years)		
	<6	23 (**8.2**)
	6–11	185 (**65.5**)
	12–17	55 (**19.8**)
	18-23	12 (**4.3**)
	24–29	6 (**2.2**)
Number of children		
	<2	98 (**34.9**)
	3-4	126 (**44.8**)
	≥5	57 (**20.3**)
Residence		
	Rural	10 (**3.6**)
	Urban	271 (**96.4**)

* *N* = 281.

3.2. Women's knowledge of family planning

Most respondent women attending PHCCs (89.7%; 252/281) had heard of FP. Moreover, 60.2% (168/281) of respondents identified the concept of FP as birth spacing and 30.1% (84/281) of them identified it as birth determination (Table 2).

Table 2. Knowledge of FP among women attending PHCCs in Sana'a, Yemen (2011)

Knowledge item	*n* (**%**)
Heard of FP (*n*=281)	
Yes	252 (**89.7**)
No	29 (**10.3**)
Perceived FP concept as: (*n*=281)	
Birth determination	84 (**29.9**)
Birth spacing	168 (**59.8**)
Do not know	29 (**10.3**)
Knowledge of the types of contraceptive methods (*n*=252)	
A. Modern contraceptives	135 (**53.6**)
Oral contraceptives	116 (**85.9**)
IUCD	100 (**74.0**)
Implant and injection	38 (**28.1**)
B. Traditional contraceptives	117 (**46.4**)
Sources of information on FP (*n*=252)	
Healthcare providers	153 (**60.7**)
Mass media	81 (**32.1**)
Family members or friends	71 (**28.2**)
Books and magazines	29 (**11.5**)
Mosque	3 (**1.2**)

IUCD, intrauterine contraceptive device.

Oral contraceptives were the most predominantly recognized modern method (85.9%; 116/135) (Table 2). However, only 28.1% (38/135) heard of implant and injections as modern contraceptive methods. Healthcare providers were the most frequent source of women's knowledge of FP (60.7%; 153/252) followed by mass media (32.1%; 81/252) or from family members or friends (28.2%; 71/252). However, only 1.2% (3/252) of women received information from mosques (Table 2).

3.3. Women's attitudes towards family planning

Table (3) shows that most respondents (86.1%; 242/281) had a positive attitude towards the idea of FP, and 80.8% (227/281) of them thought that both husband and wife are responsible for making decisions about FP compared to only 7.1% (20/281) of women who believed that wife is the ideal partner to take such a responsibility. Regarding the preferred interval for birth spacing, most respondents (38.8%; 109/281) thought that a three-year period is ideal for birth spacing compared to only 7.1% (20/281) of women who thought that the ideal period for birth spacing is one year.

Table 3. Attitudes towards FP among women attending PHCCs in Sana'a, Yemen (2011)*

Attitude item	*n* (**%**)
Opinion about the idea of FP	
Agree	242 (**86.1**)
Disagree	39 (**13.9**)
Responsibility for making decision on FP	
Husband	34 (**12.1**)
Wife	20 (**7.1**)
Both	227 (**80.8**)
Favorite period for birth spacing	
One year	20 (**7.1**)
Two years	89 (**31.7**)
Three years	109 (**38.8**)
More than three years	63 (**22.4**)

* *N* = 281.

Figure (1) illustrates that socio-cultural beliefs and values and the fear of side effects perceived by the women were the major reasons for not using FP methods (57.0% *vs.* 24.0%, respectively). On the other hand, low family income and considering that FP is against religious beliefs were the least frequent reasons for not using FP methods by the respondent women (10.0% *vs.* 9.0%, respectively).

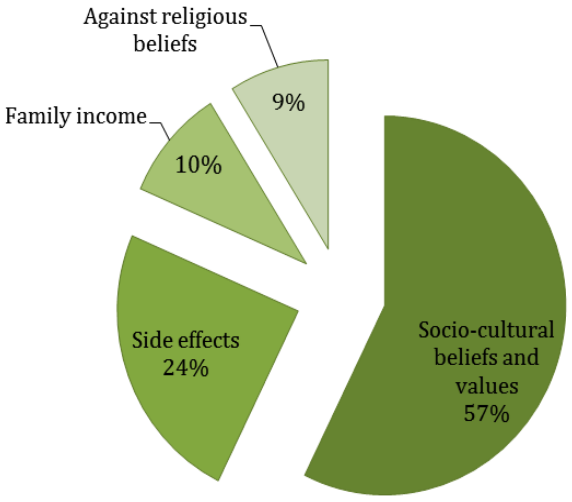

Figure 1. Reasons for not using contraceptives (*n*=281)

3.4. Women's family planning practices

Table (4) shows that more than half of respondents (54.8%; 138/252) were using modern contraceptives without any problem; most frequently using oral contraceptives and IUCD (58.7% *vs.* 41.3%, respectively). On the other hand, traditional methods of FP were practiced by 45.2% (114/252) of respondent women, where most respondents practiced FP after the first or second deliveries (41.3% *vs.* 34.9%, respectively). However, only 11.1% (32/281) of respondents used FP methods after being married.

Table 4. Practices of FP by women attending PHCCs in Sana'a, Yemen (2011)*

Practice item	*n* (%)
Currently used contraceptive methods	
Modern methods	138 (**54.8**)
Oral contraceptives	81 (**58.7**)
IUCD	57 (**41.3**)
Traditional methods	114 (**45.2**)
Time of using FP	
After marriage	28 (**11.1**)
After the first pregnancy	104 (**41.3**)
After the second pregnancy	88 (**34.9**)
Other timings	32 (**12.7**)

**N*= 252; IUCD, intrauterine contraceptive device

4. Discussion

The present study was conducted to investigate the KAPs of married Yemeni women seeking healthcare in PHCCs in Sana'a, Yemen. The finding that the majority of women were young and between parities three and four possibly reflects the desire of the Yemeni community for more children and subsequently for large-sized families.

In Yemen, marriage and childbearing usually start in young age groups, possibly explaining both the high number of children and the good awareness level of FP. This finding is consistent with those reported among Indian women, where several studies revealed that the majority of women using contraception were adolescents (2, 3, 18). In contrast to the present study, however, about a half of the women in the latter studies were illiterate and from rural areas. It is likely that women residing in rural areas behave towards birth spacing but not for birth limiting (2, 3, 18). The present study revealed that the majority of women used FP methods after their first or second pregnancies. In this context, the use of contraceptive methods was found to increase with age among South Asian immigrants in Oslo, Norway (1). However, the women's good educational level in this study may help them to understand easily the messages of FP educational programs. This finding is consistent with those reported in several studies conducted in Norway, Bangladesh, Tanzania and India (1–3, 18–20). It is noteworthy that demographic factors lead to differences in the women's unmet needs for birth spacing and limiting (1, 7).

In the present study, approximately 90.0% of respondent women had heard of the concept of FP, where most of them reported its use for birth spacing rather than determination. Moreo-

ver, modern FP methods were perceived by more than half of them. Oral contraceptive pills were the most predominantly known modern method of FP followed by IUCD and implants/injections. On the other hand, the traditional FP methods of periodic abstinence, lactational amenorrhea and coitus withdrawal were perceived by about 46.0% of women seeking healthcare in PHCCs in Sana'a. This finding is in line with those reported among women from Tanzania, India and Africa, where most women were aware of modern contraceptives (18, 20, 21).

In Qatar, most of the women knew about contraceptive pills and IUCDs, but only a few knew about injectable contraceptives (22). In contrast, Abedin (1) reported that most South Asian immigrant women in Oslo, Norway lack FP knowledge. This discrepancy in women's knowledge of the various modern and traditional methods of FP and fertility control could be explained by their availability and cost as well as women's past experience with contraceptive use. Furthermore, the role of differences in health education in relation to reproductive health as well as cultural values and beliefs between study settings could not be ruled out (10). In the present study, the main source of information about FP was from healthcare providers followed by mass media, family members and friends. This may reflect the success of education, duties, publicity and regular action in FP by healthcare workers (23). Furthermore, most of the FP providers in Yemen are usually females, especially nurses and midwives, who have high accessibility, acceptability and good trust by women (24). It has been observed in Tanzania and Zambia that healthcare workers and government health facilities, such as hospitals, were the main source of information, while mass media was the main source of information about modern contraceptives in India and Nigeria (18, 23-25). Meanwhile, it was found that Indian women seeking voluntary termination of pregnancy had gained knowledge of contraceptives mostly from friends and family members (3).

The present finding that more than two-thirds of the women showed positive attitudes towards FP and thought that both of the couples are responsible for FP is consistent with those reported in previous studies elsewhere (1, 18, 20). This could be attributed to the high literacy rate among women. In Ghana, female teachers' level of knowledge and practice of FP was high (26). However, the level of awareness of FP and contraceptive methods was found to be quite acceptable and the level of contraceptive use was unsatisfactory in rural areas of Pakistan, Khartoum, Mbouda district in Cameroon, southern Nigeria and Jimma zone of Ethiopia (27–31).

More than half of the respondent women used modern contraceptives, with a greater preference of oral contraceptive pills, attributing such a preference to their beliefs that this method is safe and easy. Similar findings were observed in Egypt, India and Yemen (10, 11, 25, 32). In contrast, IUCD was the most common method adopted for contraception by women in Port Said, Egypt followed by pills and injections (12). Differences in the methods used for FP could be attributed to differences in their availability and the economic hardship. Generally, women seek contraceptives from commercial sources as a result of the service overload in the FP healthcare centers and prolonged waiting times (34). Furthermore, demographic factors, primary healthcare services and awareness of the benefits of small families in addition to the socio-religious beliefs could also affect the choice and practice of FP (10, 25, 33).

In the United States, female sterilization was the most widely used method of FP followed by male condoms, pills and coitus withdrawal. The difference in uses of the methods could be attributed to religious differences in addition to sexual behavior, where Islam prohibits sterilization and illegal sexual relations (12, 16). Furthermore, highly educated women are able to make husbands share FP process with them and, therefore, are able to articulate their fertility desires (22, 34).

Although most of the women used modern FP methods, some still used traditional methods such as periodic abstinence, lactational amenorrhea and coitus withdrawal. The present study unveils that socio-cultural beliefs and values were the main reasons for not using FP methods. However, fear of side effect was also a barrier to the use of FP methods according to a quarter of women. Less common reasons for not using FP methods reported by the respondent women in the present study were economic reasons and religious beliefs. Several studies conducted elsewhere revealed that women prefer contraceptive injection to other methods because of its long-lasting action and ease to hide from husband in case of his disapproval (8, 20, 35–37).

In Egypt and Qatar, desire for pregnancy was the most common reason for not practicing FP (12, 21). In the present study, about half of the women were not using any of FP methods in spite of having good knowledge of different methods. It is noteworthy that knowledge of FP methods is necessary but not sufficient to increase the use of FP methods (32).

The desire to have more children and discontinuation of IUCD were reported from Egypt (12). In Yemen and Nigeria, surveys for perceptions and realities about FP showed that non-use and stop-use of FP were mainly due to the fear of side effects, husbands' disapproval and the desire for more children and, to less extent, due to religion and family causes (10, 13). In Indonesia, Zambia and Ethiopia, the most important factor determining the use of FP methods was the husbands' approval because of being the decision makers at home (24, 34, 36). Differences in social beliefs and religious values could be the reasons for differences in the study results in various settings (33–36).

The substantially high rate of respondents who preferred to use FP after first pregnancy is consistent with previous studies (37–40). However, only 3.9% of women were less likely to use FP after marriage in the present study. These findings are concurrent with that reported among women from Shanghai - China, where most of the women used FP after their first pregnancy (41).

Limitations of the study

The adoption of convenient sampling approach in this exploratory study made it difficult to perform statistical analysis. The analysis simply indicates the percentages of the women's' responses to issues related to knowledge of FP, their attitudes towards FP and the current contraceptive practices. Because the study was carried out in PHCCs, the sample was relatively small to investigate the knowledge and practices of less frequently used FP methods such as vaginal methods as well as male and female sterilization. Further large-scale, community-based studies are recommended.

5. Conclusions

Although the present study reveals good knowledge and positive attitudes among Yemeni women seeking healthcare towards FP as a means of spacing children and achieving a

smaller family size, families are still characterized by low rates of FP use compared to other Arab countries, where several barriers hinder Yemeni women from proper FP use. Because FP decision making is almost the husband's responsibility, involvement of men in FP issues is critical. Moreover, religious leaders can play an important role in creating public opinion and, therefore, should be engaged in FP awareness-raising campaigns. Illiterate women are in need for continued education and regular communication about the importance of FP to encourage them to use modern contraceptive methods.

Authors' contributions

EHA designed the study. All authors contributed to the study implementation and manuscript drafting and approved the final submission.

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Competing interests

The authors declare that they have no competing interests associated with this article.

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