Acta Scientific NUTRITIONAL HEALTH (ISSN:2582-1423)

Volume 6 Issue 11 November 2022

Research Article

# Knowledge and Attitude about Implants Contraceptive Method and their Complications among Women Attending to Health Centers in Fowwah District, in Mukalla City, Yemen during 2021-2022

**Yahya Khamis Ahmed Almualm***

*Associate Professor, Community Health Nursing Department Hadhramout University, Yemen*

***Corresponding Author:** Yahya Khamis Ahmed Almualm, Associate Professor, Community Health Nursing Department Hadhramout University, Yemen.

**Received:** September 19, 2022

**Published:** October 17, 2022

© All rights are reserved by **Yahya Khamis Ahmed Almualm.**

## Abstract

**Background:** Family planning is critical for the health of women and their families, and it can accelerate a country's progress toward reducing poverty and achieving development goals.

Implants are among the most effective long-acting contraceptive methods, Implantable methods of contraception offer long-acting reversible contraception. Their uptake rate in comparison to other contraceptive methods has historically been low.

**Aim:** To assess knowledge and attitude about implants contraceptive and their complication among women attending to health centers in Fowwah area, Mukalla, Yemen.

**Methods:** Descriptive cross-sectional study design, was conduct at health centers in Fowwah area- Almukalla city, Yemen. A total of 185 woman in childbearing age were interviewed through questionnaire from 18 January to 27 February. The data were analyzed by using Statistical Package for Social Sciences (SPSS) version 26 software. Descriptive statistics and chi-square test used. P value less than 0.05 was considered statistically significant. Data was presented by using computer programs (word and excel office 2010)

**Result:** A total of 185 women who were attended health center, their ages ranged from 15 to 45 years. The majority (75.7%) of them were in age group 26 to 35 years. (36.2%) had secondary educational level, majority (63.2%) of women are housewife, majority of women (92.4%) think that births spacing is important. only (17.8%) used implants contraceptive, majority of participants (94.6%) heard about implants contraceptive, (54.1%) of them have a low level of knowledge. vast majority of the participations 110 (59.5%) had positive attitude toward implants contraceptive and their complication.

**Conclusion:** The results of the present study revealed that majority of the participants (94.6%) had heard about implants contraception and few of them (5.4%) had not heard of it. This study also showed that near to half (45.9%) don't agree with using implants contraceptive. (75.1%) accept that implants have complications, majority of participants (47%) don't know if implants increase risk of infection. Finding of the present study, showed that women with low knowledge is more than half of the sample (54.1%). Also, women with positive attitudes towards implants and their complications (59.5%). There are statistically significant between women's educational level and knowledge toward implants contraceptive.

**Keywords:** Knowledge; Attitude; Implants Contraceptive; Family Planning; Complications

## Introduction

Family planning is critical for the health of women and their families, and it can accelerate a country's progress toward reducing poverty and achieving development goals. Because of its importance, universal access to reproductive health services, including family planning, is identified as one of the targets of the United Nations Millennium Development Goals (MDGs) [1].

The practice of birth control has been around for centuries and people have relied upon their imaginations and ingenuity to avoid pregnancy. Ancient writings dating back to 1850 BC refer to techniques using items placed in the vagina made of crocodile dung, fermented dough, gum, honey, and acacia, which most likely created a hostile environment for sperm. During the early second century in Rome, a highly acidic concoction of fruits, nuts, and wool was placed on the cervix as a type of spermicidal barrier. Today's options for contraception have evolved considerably and include a variety of products ranging in mechanism, efficacy, and accessibility [2].

An estimation was made that about 20% of females were at risk of unintended pregnancy and could be considered in need of contraception [3].

An estimated 358 000 maternal deaths occurred worldwide in 2008, a 34% decline from the levels of 1990. Despite this decline, developing countries continued to account for 99% (355 000) of the deaths. Sub-Saharan Africa and South Asia accounted for 87% (313,000) of global maternal deaths. Fortunately, the vast majority of maternal and newborn deaths can be prevented with proven interventions to ensure that every pregnancy is wanted using modern contraceptive and every birth is safe [4].

In Yemen, poverty, illiteracy, high mortality, beliefs, low women empowerment and poor health services together with the high population growth rate of around 3.5% poses great challenges in promoting the practice of family planning. The contraceptive prevalence rate in Yemen was only about 10% in the 1991-92 survey compared to 42% in Morocco and 46% in Egypt. Maternal mortality rate is still very high at 114 maternal deaths per 10,000 live births and the infant mortality rate at 75 per 1000 in 1991. The total fertility rate in Yemen is still high as well, despite a decrease from 7.7 births per women in 1991-1992 to 6.5 in the 1994 census, and reached 8.4 births per women which was considered to be the highest in world [5].

Knowledge of family planning methods in Yemen is almost universal; 98% of ever-married women interviewed know at least one modern method of family planning. The most commonly known methods are pill, injectables, IUD, and implants.

In AL-mukalla district, the awareness of contraceptive pills (16.9%), followed by IUD (15.8%) were the commonest modern methods knew, while the safe period (rhythm) and breastfeeding were the commonest traditional methods represented by (12.5%,12.6%) respectively, the least knowledge method was implants 1.8%. And the knowledge about complications of family planning methods; shows that (37.5%males and 47% females) were believes family planning methods cause psychological upset, sterility (33.6% males and 25.4 females) followed by change in the body function (22.4%males and 25.2% females) while the remaining problems are (cancer, irregularity of the cycle) [6].

Currently, the only subdermal implant available to women in the United States is the single rod etonogestrel implant, Implanon (N.V. Organon, Oss, the Netherlands) ap- proved by the Food and Drug Administration in July 2006. Implanon is currently approved for 3 years of use, provides excellent efficacy throughout its use, and is easy to insert and remove. Similar to other progestin- only contraceptives [7].

Implants are among the most effective long-acting contraceptive methods, comparable in effectiveness to intrauterine devices, female sterilization, and vasectomy. In the first year of use, the pregnancy rate among users of implants is no more than 1 per 1,000 women. The cumulative five-year pregnancy rate among Jadelle users is 11 per 1,000 women. Among Sino-implant (II) users, the cumulative four-year pregnancy rate was 9 and 10.6 per 1,000 women in the two clinical trials with data up to four years.

Knowledge about hormonal implants varies widely among countries. Among 42 countries with data from Demographic and Health Surveys, the percentage of married women of reproductive age who had heard of hormonal implants ranges from a low of 2% in Chad to 94% in Haiti. In 25 of the 42 countries, less than half of the women surveyed had heard of implants [8].

Levonorgestrel implants in nationally representative scientific samples, in randomised trials, and in controlled cohort studies have continuation rates as high as or higher than any other reversible contraceptive over a duration of 5 years. This would imply that the satisfaction women derive from the contraceptive effectiveness of levonorgestrel implants greatly outweighs the dissatisfaction that may accompany menstrual disturbances and other adverse effects associated with implants [9].

Complications during insertion and removal of implants are rare. The incidence of infection or expulsion following insertion of implants ranges from 0% to 1.4%. Pain at the site of insertion has been reported by 0.7% to 7.1% of implant users.

The percentage of women experiencing complications during removal of their implants has ranged from 0.2% to 14.8%. Comparative studies have shown reduced rates of removal complications with Jadelle and Implanon than with Norplant [8].

These implants have become popular and in high demand in many countries including subSaharan Africa where family planning programs are available. However offering them as a contraceptive choice re- quires that trained practitioners perform the minor procedures necessary to either insert or remove the device sub dermal, in a reliably aseptic environment [10].

Specific counseling should also be made available to potential recipients by trained counsellor in contraceptive services, so that the clients clearly understand implant insertion and removal procedures, the risks and benefits of implant use, as well as what to expect in terms of side effects, particularly menstrual bleeding changes [10].

### Research question

- What is the level of knowledge of women about implants contraceptive and their complication?
- What is attitude of women about implants contraceptive and their complication?
- What is the relationship between level of knowledge and level of education?
- What is the relationship between level of knowledge and age?

## Objectives

### General objective

To assess knowledge and attitude about implants contraceptive and their complication among women attending to primary health care centers in Fowwah area, Mukalla, yemen

### Specific objective

- To assess the prevalence of use of implants contraceptive.
- To assess knowledge about implants contraceptive and their complication.
- To assess attitude about implants contraceptive and their complication

## Methodology

### Study design

A cross-sectional study design was carried out by the 4th level students, nursing college, Hadhramout University, during 2022, to assess knowledge and attitude about implants contraceptive and their complications among women attending to health center.

### Study setting

The study was carried out in health centers in Fowwah area-AL.Mukalla, Hadhramaut. We selected four health centers, which all provide family planning specially Implants contraceptive services. There was {University Hospital, Al-Noor Clinic and Family Medicine (Al Masaken- Old Fowwah)}.

### Study population

All women in childbearing age between (15-45) years they attending the selected health centers during study period from 18 January to 27 February. One hundred eighty-five were completed the questionnaire.

### Sampling technique

They was selected by simple random sample.

### Data process and collection

### Type of data

The study was include quantitative and qualitative data for data collection.

### Methods and tools of data collection

A questionnaire was prepared containing many questions, and variables that's include age, level of education, type of contraceptives using and socioeconomic quality of life. The interview was also conducted with illiterate women to obtain the required information and completing the data about knowledge and attitude about implants contraceptive and their complication among women attending to health centers in Fowwah area.

### Pilot study (pre-tested)

The pre-tested questionnaire has been conducted among 20 participates who voluntarily randomly selected from PHC.

The questionnaire was pre-tested to determine question sequence, identification to difficult words and consistency of answers to the ''check'' questions. Therefore, necessary modification was done passed on pre-tested results. (Reliability statistical was Cronbach's Alpha = .678).

### Data analysis plan

A data file was created on the questionnaire using the statistical Package for Social Sciences (SPSS) version 26 software. Preliminary data checking was done to detect data entry errors. Outliers were identified by plotting histograms and checked for possibility of data entry errors. Any data entry errors found was then cleaned. Chi-square test used to test associations between independent and dependent variable. The level of statistical significance was set at $P < 0.05$.

Data obtained was analyzed using the descriptive statistical tables "frequencies - average" This data was also displayed in tables and graphs using the computer applications (Excel and ward).

Also was analyzed by using the frequency distribution, Mean, Standard Deviation for quantitative data.

### Knowledge scale

The knowledge scale consisted of 9 items. Each correct answer was given one score and zero score for a wrong or unknown answer.

The total knowledge score ranged
From 0 to 9 and was classified as the following

- High knowledge score: > mean + SD.
- Low knowledge score: < mean - SD.

### Attitude scale

The attitude scale consisted of 11 items; each item scored a value of 1 for positive attitude and 0 for negative attitude.

### Limitations of study

Restricting the research period and lack of health centers in our study, which leads to a small sample size and does not achieve the desired study goal.

### Ethical consideration

The study was approved by the Supervisors of the Faculty of Nursing at the University of Hadhramout.

The study questionnaire will be reviewed by supervisors of group. confidentiality of participants were assured and their decision to participate voluntarily in this study was respected.

## Result

First: Demographic variable

| Characteristic | Frequency | Percent |
|---|---|---|
| | Age (N = 185) | |
| 15-25 Years | 19 | 10.3% |
| 26-35 Years | 140 | 75.7% |
| 36-45 Years | 26 | 14.1% |
| Total | 185 | 100% |
| | Age at marriage (N= 185) | |
| <15 Years | 10 | 5.4% |
| 16-20 Years | 87 | 47% |
| 21-25 Years | 64 | 34.6% |
| 26-30 Years | 17 | 9.2% |
| >31 Years | 7 | 3.8% |
| Total | 185 | 100% |

**Table 1:** Sample distribution according to (Age) variable.

Show that a total of 185 women who were attended health center, their ages ranged from 15 to 45 years. The majority (75.7%) of them were in age group 26 to 35 years.

And about age at marriage, we found (47%) married at age 16 to 20, and (34.6%) at age 21 to 25, (9.2%) at age 26 to 30 years, (5.4%) who married before age of 15, and (3.8%) more than 31 years.

| Characteristic | Frequency | Percentage |
|---|---|---|
| Educational level of women (N = 185) | | |
| Primary school | 49 | 26.5% |
| Secondary school | 67 | 36.2% |
| University | 49 | 26.5% |
| Illiterate | 20 | 10.8% |
| Total | 185 | 100% |
| Educational level of husband (N = 185) | | |
| Primary school | 49 | 26.5% |
| Secondary school | 77 | 41.6% |
| University | 52 | 28.1% |
| Illiterate | 7 | 3.8% |
| Total | 185 | 100% |

**Table 2:** Sample distribution according to (Educational level of women and their husband) variable.

Show that women with secondary educational level (36.2%), primary educational level (26.5%), university educational level (26.5%) and illiterate women educational level (10.8%).

And about their husband, (41.6%) secondary educational level, (28.1%) university educational level, (26.5%) primary educational level and about (3.8%) illiterate educational level.

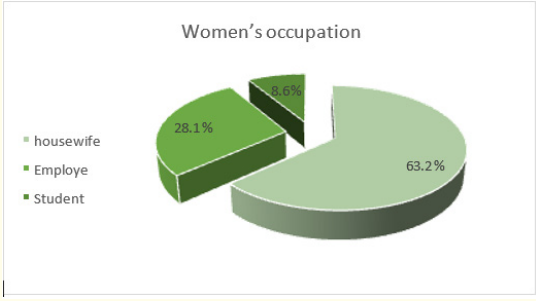


**Figure 1:** Sample distribution according to (women`s occupation) variable.

Show that 63.2% of women are housewife, 28.1% of women are worker and only 8.6% of women are student.

| Number of live births (N = 185) | | |
|---|---|---|
| **Characteristic** | **N** | **Percent** |
| 0-3 | 143 | 77.3% |
| 4-7 | 37 | 20% |
| 8> | 5 | 2.7% |
| Total | 185 | 100% |

**Table 3:** Sample distribution according to (Number of live birth) variable.

Show that more than two third (77.3%) had 3 or less live births, (20%) had 4 to 7 live births and (2.7%) had 8 or more live births.

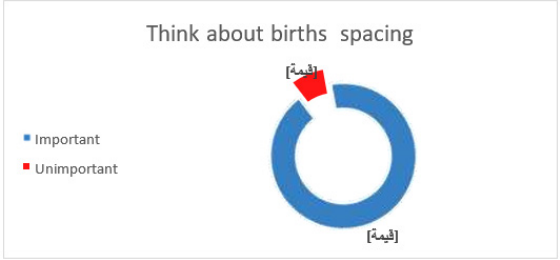


**Figure 2:** Sample distribution according to (think about birth spacing) variable.

Show that majority of women (92.4%) think that births spacing is important.

| Characteristic | Frequency | Percent |
|---|---|---|
| Opinion of time period should wait between birth and other | | |
| 1 Years | 6 | 3.2% |
| 2 Years | 56 | 30.3% |
| 3 Years | 60 | 32.4% |
| 4 Years | 38 | 20.5% |
| 5 Years | 18 | 9.7% |
| 6 Years | 6 | 3.2% |
| 7 Years | 1 | 0.5% |
| Total | 185 | 100% |

**Table 4:** Sample distribution according to (opinion of time period should wait between birth and other).

Show that their Opinion of time period should wait between birth and other, (32.4%) of women think they should wait 3 years, with mean ± SD (3.14 ± 1.99).

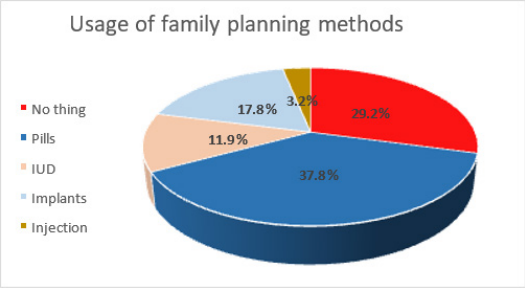


**Figure 3:** Sample distribution according to (Usage of family planning methods) variable.

Show that (29.2%) not use any contraceptive, the majority (37.8%) use pills, (17.8%) use implants, (11.9%) use IUD, and only (3.2%) use injection.

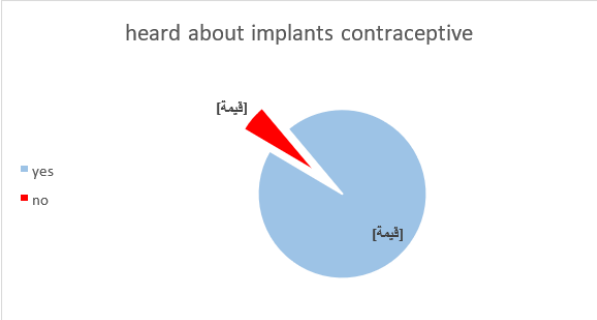


**Figure 4:** Distribution according (heard about implants contraceptive).

Shown in figure (4) that about majority of participants 175 (94.6%) heard about implants contraceptive and few of them 10 (5.4%) have not heard about it.

| NO. | Variable knowledge | YES | | NO | | I don't know | | Mean | SD |
|---|---|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | % | | |
| 1 | Do you agree with using implants? | 84 | 45.4% | 85 | 45.9% | 7 | 3.8% | 1.56 | .573 |
| 2 | Does the implants have complication? | 139 | 75.1% | 19 | 10.3% | 18 | 9.7% | 1.31 | .649 |
| 3 | Does it causes cancer? | 27 | 14.6% | 78 | 42.2% | 71 | 38.4% | 2.25 | .705 |
| 4 | Does it cause change in menstruation period? | 153 | 82.7% | 10 | 5.4% | 13 | 7.0% | 1.20 | .559 |
| 5 | Does it cause vaginal bleeding? | 128 | 69.2% | 23 | 12.4% | 25 | 13.5% | 1.41 | .728 |
| 6 | Does it increase risk of infection? | 75 | 40.5% | 14 | 7.6% | 87 | 47.0% | 2.07 | .960 |
| 7 | Do you encourage your friends to use it? | 86 | 46.5% | 73 | 39.5% | 17 | 9.2% | 1.16 | .659 |
| 8 | Is there a possibility of pregnancy with it? | 47 | 25.4% | 76 | 41.1% | 53 | 28.6% | 2.03 | .755 |

**Table 5:** Distribution according (knowledge about implants contraceptive and their complication).

Show answer of women only who heard about implants contraceptive, the majority of women 85 (45.9%) did not agree with use implants contraceptive, the majority of participant 139 (75.1%) answered with yes about the complication of implants contraceptive, less than half of the participants 78 (42.2%) think that implants dose not cause cancer. majority of them 153 (82.7%) said yes about causes changes menstruation period, 128 (69.2%) answered with yes causes vaginal bleeding, (47%) don`t know if it increase risk of infection, 76 (41.1%) answered with no about possibility of pregnancy.

| Knowledge | N | % |
|---|---|---|
| High knowledge | 85 | 45.9% |
| Low knowledge | 100 | 54.1% |
| Total | 185 | 100% |

**Table 6:** Distribution of knowledge score among study population.

Shows the knowledge scale which 100 (54.1%) of them have a low level of knowledge, and 85 (45.9%) of them have high knowledge.

| Item | Physician counselling | | Remove implant | | Nothing | | I don't know | | Mean | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | | |
| Changes in menstruation cycle. | 160 | 86.5% | 18 | 9.7% | 6 | 3.2% | 1 | 0.5% | 1.18 | .498 |
| Vaginal bleeding. | 128 | 69.2% | 54 | 29.2% | 2 | 1.1% | 1 | 0.5% | 1.50 | .402 |
| Lack of breastfeeding. | 130 | 70.3% | 36 | 19.5% | 12 | 6.5% | 7 | 3.8% | 1.44 | .781 |
| Weight gain or loss. | 100 | 54.1% | 38 | 20.5% | 45 | 24.3% | 2 | 1.1% | 1.73 | .870 |
| Chronic pain in the abdomen or back. | 125 | 67.6% | 38 | 20.5% | 15 | 8.1% | 7 | 3.8% | 1.49 | .806 |
| Lack of sexual desire. | 111 | 60% | 38 | 20.5% | 31 | 16.8% | 5 | 2.7% | 1.62 | .861 |
| Leg pain, swelling or redness. | 130 | 70.3% | 37 | 20% | 12 | 5.6% | 6 | 3.2% | 1.42 | .735 |
| Swelling or redness at implant site. | 134 | 72.4% | 37 | 20% | 11 | 5.9% | 3 | 1.6% | 1.39 | .674 |
| Pus at implant site. | 120 | 64.9% | 54 | 29.2% | 9 | 4.9% | 2 | 1.1% | 1.42 | .640 |
| Inability to carry heavy things. | 119 | 64.3% | 31 | 16.8% | 33 | 17.4% | 2 | 1.1% | 1.56 | .822 |
| Pain and lumps in the breast. | 134 | 72.4% | 36 | 19.5% | 13 | 7% | 2 | 1.1% | 1.37 | .666 |
| Total | 1391 | 68.3% | 41<br>7 | 20.5% | 18<br>9 | 9.3% | 38 | 1.9% | 16.0 8 | 5.821 |

**Table 7:** Sample distribution according (Attitude about implants contraceptive and their complication).

Show that about total of attitude regarding implants and their complication majority of participants (68.3%) answered with physician counseling, (20.5%) remove implant, (9.3%) will not do anything and only (1.9%) they do not know what they are doing.

| Attitude | N | % |
|---|---|---|
| Positive | 110 | 59.5% |
| Negative | 75 | 40.5% |
| Total | 185 | 100% |

**Table 8:** Distribution of attitude score among study population.

Show that the vast majority of the participations 110 (59.5%) had positive attitude toward implants contraceptive and their complication and 75 (40.5%) of them had negative attitude.

| Knowledge and attitude | | N | % | P-value |
|---|---|---|---|---|
| Knowledge | High | 85 | 45.9% | .001 |
| | Low | 100 | 54.1% | |
| | Total | 185 | 100% | |
| Attitude | Positive | 110 | 59.5% | |
| | Negative | 75 | 40.5% | |
| | Total | 185 | 100% | |
| P-value <0.05 is statistically significant | | | | |

**Table 9:** Distribution of correlation between knowledge and attitude:

Shows that was significant correlation between woman`s knowledge and attitude. (P-value = 0.001).

| Level of education | Knowledge | | Sig | Attitude | | Sig |
|---|---|---|---|---|---|---|
| | High | Low | | Positive | Negative | |
| Primary school | 21 | 28 | .040 | 28 | 21 | .097 |

**Table 10:** Distribution of correlation of women`s knowledge and attitude with Age.

Shows that was no significant correlation between woman`s knowledge and age (P-value = 0.447).

And no significant correlation between woman`s attitude and age (P-value =0.806).

| Age | knowledge | | Sig | Attitude | | Sig |
|---|---|---|---|---|---|---|
| | High | Low | | Positive | Negative | |
| 15-25 Years | 7 | 12 | .447 | 10 | 9 | .806 |
| 26-35 Years | 68 | 72 | | 84 | 56 | |
| 36-45 Years | 10 | 16 | | 16 | 10 | |
| P-value <0.05 is statistically significant | | | | | | |
| Secondary school | 39 | 28 | | 37 | 30 | |
| University | 20 | 29 | | 36 | 13 | |
| Illiterate | 5 | 15 | | 9 | 11 | |
| P-value <0.05 is statistically significant | | | | | | |

**Table 11:** Distribution of correlation of knowledge and attitude with level of education.

Shows that was significant correlation between woman knowledge and level of education (P-value = 0.040).

But there no significant correlation between woman`s attitude and level of education (P-value = 0.097).

## Discussion

Contraceptive implants are one of the most effective family planning methods available and well accepted worldwide. These implants have become popular and in high demand in many countries [10].

The aim of this study was to assess prevalence of use of implants contraceptive and assess knowledge and attitude about implants contraceptive and their complication among women attending to health center in Fowwah area, Mukalla, Yemen.

This study included a total of 185 participants of women in childbearing age between (15-45) years. The majority of participants (75.7%) were aged between (26-35 years), most women (47%) married at age group (16-20), most women (36.2%) had secondary education level. Compared to study done in Southwest Nigeria were the major participants (46.1%) aged less than 29 years with mean ± SD was 30.9 ± 6.8 years, most women (65.4%) married were aged less than 24 years, and (45.7%) had secondary education level. [17].

Regarding to women`s occupation, the most women (63.2%) are housewife, similar to study done by Mubashar H., *et al*. in Saudi Arabia (2016), who found (67%) of participants are housewife [20].

Our study showed that more than two third (77.3%) had 3 or less live births, similar to study done by Banafa NS., *et al*. (2017), who found that (71.8%) had 3 or less live births [6].

This study showed that majority of women (92.4%) think that births spacing is important, the mean of opinion of time period should wait between birth and other (3.14 ± 1.99).

Compared to study done by Abdel-Fattah M., *et al.* (2006), who found that the great majority of participants women (98%) had a positive opinion of the effect of birth spacing on the family [22].

As regard the prevalence of contraceptive use in this current study was (70.8%), most women (37.8%) used pills and only about (17.8%) use implants contraceptive.

This result less than study of Southwest Nigeria, the prevalence of contraceptive utilization (any method) and contraceptive implant utilization were 92.2% and (31.1%) respectively [17].

The results in our study showed that the most women (94.6%) heard about implants contraceptive and few of them (5.4%) have not heard about implants contraceptive.

This study agrees with study done by Mubashar H., *et al.* in Saudi Arabia (2016), who found that the major participants (90.8%) had heard about implants contraceptive [20].

In our study the majority of women (45.9%) reported that they did not agree with use implants. Similar to results reported among Latina women by white K., *et al.* (2014), who found the majority of women did not want to use these methods [21].

This study showed that (82.7%) said the implants contraceptive causes change in menstruation period, compared to study done by Banafa NS., *et al.* (2017), who found (65.6%) said it`s cause menstrual change [6].

The results showed that majority of participants (47%), don't know if implants increase risk of infection, similar to study done in South Africa (2019) who found (53.3%) don't know if it increase risk of infection [19].

The current study showed that (54.1%) of the women have low knowledge about implants contraceptive and their complications and (45.9%) of women have high knowledge about implants contraceptive and their complications (Table 6).

This study agrees with study done in South Africa, (2019) revealed that most of the respondents, (78.3%) were not knowledgeable about this method of contraception [19].

Regarding to attitude of women toward implants contraceptive and their complications the vast majority of them (59.5%) had positive attitude and (40.5%) had a negative attitude. (Table 8).

This result same to study done by Banafa NS., *et al*. (2017), who found (65.7%) had good attitude they willing to counsel physician, and only (9.4%) decide to remove it [6].

Also, the present study revealed that a correlation between knowledge and attitude (Table 9).

The finding of the present study showed that there was statistically significant correlation between level of education and women's knowledge (P-value = 0.040), and that no statistically significant correlation between women's age and their knowledge (P-value = 0.447).

We found that women with secondary school had better knowledge scores toward implants contraceptive and their complications (Table 11).

Similar to study of Southwest Nigeria who found participants with higher education preferred contraceptive implants and had higher odds of using it compared with those who had lower education, (p-value = 0.03) [17].

## Conclusion

- The present study carried among women attending health centers in Fowwah area, Mukalla, Yemen. This study revealed a relatively low level of current use implant contraception (17.8%).
- This study showed that majority of women had a secondary educational level. (36.2%).
- The results of the present study revealed that majority of the participants (94.6%) had heard about implants contraception and few of them (5.4%) had not heard of it.
- This study also showed that near to half (45.9%) don't agree with using implants contraceptive. (75.1%) accept that implants have complications, majority of participants (47%), don't know if implants increase risk of infection.
- Finding of the present study, showed that women with low knowledge is more than half of the sample (54.1%) and (45.9%) of them have high knowledge.
- Also, women with positive attitudes towards implants and their complications (59.5%), and (40.5%) of them had negative attitude.
- There are statistically significant between women's educational level and knowledge toward implants contraceptive.

## Recommendations

Based on the results obtained in this study which done in Fowwah area, Al-Mekalla during 2022. We divide the recommendations as following

- We recommend Ministry of Public Health and Population to raising the level of awareness among women about family planning and increases programs of health education through mass media as TV, Radio and social media.
- We recommend Ministry of Public Health and Population to provide health education programs to teach women in childbearing age about importance of family planning through seminars and education programs in secondary school and universities.
- We recommend Ministry health to educate health workers by engaging them in seminars and courses of health education, rehabilitation and continuing learning, to be aware that some women, particularly adolescents and who had low education may have low knowledge about contraceptive options, and they should be prepared to provide necessary education.
- We recommend the health workers to improve the women`s knowledge about implants contraceptive through counseling programs.
- We recommended the women to important to take the information from a specialized and qualified confident source.

## Acknowledgments

The authors sincerely thank the deans of the following law college, medicine college, administrative sciences college, oil and engineering college for their permission to use data obtained by questionnaire, and sincerely thank to the group of nursing students (Khadega Abdullah Shammakh, Zaineb Hassan Baabbad, Abdullah Eidah AL Bogri, Afarah Ahmed Alhaiqi, Bashair Salem Bahady Fatima Saeed Bin waber, Maria Saleh Alnahdi, Noor Abdullah Al-Haddad, Noor Ahmed Bashaib.

## Bibliography

1. UNFPA. Arab states regional office: "Women's need for family planning in Arab countries" (2021).

2. Charlie W., *et al.* "Contraceptive methods". A review of non-barrier and barrier products. *Journal of Pharmacy Practice* 30.1 (2017): 130-135.

3. Al-Sekait MA. "Prevalence of contraception used among Saudi Arabian women". *Saudi Mod J* 20.9 (1999): 687-690.

4. Alemayehu M., *et al.* "Factor associated with utilization of long acting and permanent contraceptive methods among married women of reproductive age in mekelle town, Tigray region, north Ethiopia". *BMC Pregnancy Childbirth* 12.6 (2012): 2-9.

5. Al-Mualm YK. "Knowledge, attitude and practice of husbands towards modern family planning in Mukalla, Yemen" (2007): 22-151.

6. Banafa NS., *et al.* "Knowledge and attitude about side effect of implanon (Implant) among women attend e to primary health center in Al-Mukalla district". *ACTA Scientific Medical Sciences* 1 (2017): 32-37.

7. Hohmann H and Creinin M. "The contraceptive implant". *Clinical Obstetrics and Gynecology* 50.4 (2007): 907-917.

8. Salem RM., *et al.* "Essential knowledge about hormonal implants". *K4health* (2010).

9. Sivin I. "Risks and benefits, advantages and disadvantages of levonorgestrel releasing contraceptive implants". *Drug Safety* 26.5 (2003): 303-335.

10. Madugu NH., *et al.* "Uptake of hormonal implants contraceptive in Zaria, Northern Nigeria". *Obstetrics and Gynecology* 5.5 (2015): 269-273.

11. Lamorde M., *et al.* "Efavirenz decreases etonogestrel exposure: a pharmacokinetic evaluation of implantable contraception with antiretroviral therapy". *AIDS* 31.14 (2017): 1965-1972.

12. World health organization. Family planning/contraception methods (2021).

13. Tilahun Y., *et al.* "Improving Contraceptive Access, Use, and Method Mix by Task Sharing Implanon Insertion to Frontline Health Workers: The Experience of the Integrated Family Health Program in Ethiopia". *Global Health: Science and Practice* 5.4 (2017): 592-602.

14. Makarainen L., *et al.* "Ovarian function during the use of a single contraceptive implant. Implanon compared with Norplant". *Fertility and Sterility* 69.4 (1998): 714-721.

15. World health organization. "Norplant contraceptive subdermal implant" (2021).

16. Ramdhan R., *et al.* "Complications of Subcutaneous Contraception: A Review". *Cureus* 10.1 (2018): e2132.

17. Ndikom C and Alabi P. "Predictors of the usage of contraceptive implants among women of reproductive age in Ondo State, Southwest Nigeria". *Journal of Preventive Medicine and Hygiene* 61 (2020): 3947.

18. Bagalagel A. "Prevalence and correlation of contraceptive use among females in Jeddah, Saudi Arabia". *International Journal of Pharmacy and Pharmaceutical Sciences* 12.8 (2020): 149-155.

19. Nomaxabiso M. "Nursing students' knowledge, attitude and use regarding an implanted contraceptive method". *UNISA* 21.2 (2019).

20. Mubashar H and Almushait M. "Knowledge, attitude and practice of contraceptives among Saudi women in Aseer region, Saudi Arabia" 15 (2016): 430-434.

21. White K., *et al.* "Knowledge and attitude about long-acting reversible contraception among Latina women who desire sterilization". *NIH Public Access* 23.4 (2013): 257-263.

22. Abdel-Fattah M., *et al.* "Determinants of birth spacing among Saudi women". *Journal of Family and Community Medicine* 14.3 (2007): 103-111.