



## Original Article

# Awareness on Efficacy and Side Effects of Female Contraceptives among Nursing Undergraduates at KIU, Sri Lanka.

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## Abstract

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Unplanned pregnancies have rapidly emerged as a social issue that significantly degrades the quality of life of parents and children. Therefore, nurses, being a vital part of the health system, should be well-aware regarding contraceptive methods. The objective of the study was to assess awareness of safety, efficacy, and side effects of female contraceptives among nursing undergraduates at KAATSU International University (KIU). Descriptive cross-sectional study was conducted among 362 undergraduate nurses studying at KIU, Sri Lanka, using a convenient sampling method. The data were collected using a self-administered pre-tested questionnaire that consisted of four parts; demographic variables, safety, efficacy and side effects related questions. The data was analyzed using descriptive statistics and the Pearson Chi-square test. Out of total, 74.6% (n=270) of the participants had an average awareness regarding different types of female contraceptives and 74.5% (n=270) had average awareness (40-59.9%) regarding major side effects of female contraceptives while the awareness regarding efficacy of different contraceptive methods was found to be only 37% (n=134) related to female condom. Overall, the study revealed that majority of nurses had an average awareness regarding the safety and main side effects of female contraceptive methods, further they had a low level of awareness on efficacy of female contraceptive methods. Therefore, it is important to enhance nurses' awareness related to modern female contraceptive methods.

**Keyword:** Undergraduate nurses, Female contraceptives, Awareness, Efficacy, Side effects

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## **Introduction**

Contraceptives have been practiced for thousands of years globally. Many women used it for an extremely long period throughout their reproductive lifespan (Monga & Dobbs, 2011). People use different types of contraception at different stages in their lives and there is no single method that will suit everyone. There is no perfect method of contraception and different types of contraceptive methods will have several advantages and disadvantages (Monga & Dobbs, 2011). Ideal contraceptives will be characterized by low cost, high efficacy, and minimal side effects.

The ability of a woman to start a successful, continuous and appropriate contraceptive method is influenced by many factors; e.g. access to the health care, community, cultural attitudes, and personal attitude all of which can be considered as obstacles to applying correct use and efficient technique to achieve family planning goals (Blumenthal et al, 2010; Belfield, 2009 & Mohammed, 2019). Furthermore, in developing countries, where women are dependent upon old traditions and social constraints, awareness, and awareness about family planning acceptance is not the only decisive factor.

However, lack of information or misinformation about various techniques, can confuse and discourage people from taking any form of contraception. Also, some women are prevented from using any contraception by a partner or are unable to access services because of their youth or unmarried status. Anyhow, in many cases, these obstacles can be overcome through proper contraceptive education. It is a known fact that education could improve understanding and make the person think scientifically (Joshua et al, 2014).

In Sri Lanka, a large budget is being allocated for the public health system to ensure that the majority of the population has access to primary

health care (Family Health Bureau, 2016). According to 2016 statistics, the total population of Sri Lanka was 21,164,458, and the birth rate per 1000 of the population was 16.90, while mortality rate was 5.80 per 1000 live births. The major reason identified for neonatal mortality is congenital anomaly which stands at 42.6% and majority of Sri Lankan mothers had good awareness regarding congenital anomalies (Kanchana & Youhasan, 2018). Through planned pregnancy, the rate of congenital defects would have been reduced. During the last few decades, family planning assisted many couples in planning their reproductive lives (WHO, 2014 & Ministry of Health, 2016). These results are seen in the form of a steep reduction in mortality rates, especially maternal and infant mortality, along with a decline in fertility rates. This reduction in population leads to the sustainable development of the country.

According to an article published by Perera et al, in 2004, inadequate, inaccessible, and unaffordable Family Planning (FP) services and social barriers that prevent women and couples from using FP methods may be responsible for a substantial proportion of unwanted pregnancies. Even when FP services are available and accessible, a proportion of unwanted pregnancies arise following contraceptive failure due to incorrect use. Sri Lanka appears to have a well-established family planning program (Family Planning, 2010). The primary objective of the programme was to reduce unwanted births by improving family planning services across the island, obviating the necessity for illegal abortions. As a result, health care professionals play a critical role in the delivery of these services (Demographic & Health Survey Report, 2016).

The tendency to use contraceptive methods depends upon the individual's general attitude toward using those methods. Hence knowing individuals' attitudes will be important. As long as people's attitudes are known, their conduct may be expected and managed. Further, anticipating

and managing behaviors are extremely important for nurses. Contraceptive consulting is more than providing information or answering the questions of the clients, therefore, nurses must explore and modify their attitudes and beliefs in this area (Blumenthal et al, 2010). Choosing a contraceptive method for any couple is an extremely important part of reproductive health.

Nurses can assist women in achieving their reproductive life goals, such as spacing and timing of children, by providing efficient contraception counseling. However, lack of awareness, misconceptions, and negative attitude towards contraceptives in nursing personnel can act as a barrier for their personal use and also prevent them from promoting contraceptives to the beneficiaries. However, relatively a few published studies on contraceptive methods and services have been conducted in Sri Lanka. Therefore, the objective of the study was to assess the awareness on safety, efficacy, and side effects of female contraceptives among nursing undergraduates at KAATSU International University (KIU).

## **Methodology**

A descriptive cross-sectional study design was used among 362 registered, undergraduate nursing students studying in the 3<sup>rd</sup> and 4<sup>th</sup> year at KIU, Sri Lanka. The sample size was calculated using Cochran formula (estimate prevalence-50%). The data were collected using a self-administered pretested questionnaire which consisted of four parts. The questionnaire was developed by the researcher using the available literature. The first part included eight questions related to demographical data, the second part was designed to assess the awareness of female contraceptive methods which consisted of six questions, the third part was designed to assess the awareness on efficacy rate, and it consisted of two main questions with several subcategories and the fourth part was aimed to assess the awareness regarding side effects of

female contraceptives (Oral Contraceptive Pills-OCP, Intrauterine Device - IUD), depo-provera, implant and female condom) which included thirteen questions. Data was collected through an established database at KIU using convenient sampling techniques. After obtaining the ethical clearance from Ethics Review Committee, KIU (KIU/ERC/18/010), a pilot study was conducted among 26 nursing undergraduates apart from the main study to identify the validity and reliability (Cronbach's alpha = 0.75) of the questionnaire. After the pilot study, the questionnaire was modified accordingly. Data were analyzed in SPSS version 23 and descriptive statistical analysis was performed to describe the data. Pearson Chi-square test was used to determine the association between the categorical variables. The awareness of participants was assessed by an awareness assessing scale developed by the researcher. According to this scale, the participants were graded as; if scored less than 39.9% were categorized as a poor level of awareness, between 40-59.9% as an average level of awareness, and 60% and above having as a good level of awareness.

## **Results**

### ***Demographic characteristics of the participants***

Among the 362 participants, the frequency percentage of demographic variable shows majority (40.6%, n=147) were from the Western province and 58.8% (n=213) were between the age of 26-30 years, while the majority (96.1%, n=345) were Buddhist. According to the Sri Lankan nurses grading circular, the majority (87.3%, n=316) of the nurses were ranked as nursing officer grade III. Majority (20.7%, n=75) worked at a medical ward and most of them (47.2%, n=171) had 1-5 years of working experience. Most of the participants (89.5%, n=324) did not have any special training regarding family planning .

### ***Awareness regarding female contraceptive methods***

The awareness related to various female contraceptive methods were assessed including Oral Contraceptive Pills (OCP), IUD, Depo-Provera, Implant, and Female condom. Majority (92.5%, n=335) were aware that OCP pack contain 28 pills with 21 hormonal pills. When questioned on “Pills can be taken every day but at any time” and “OCP can prevent total fertilization process,” the responses gained were 64.6% (n=234) and 68.8% (n=249) respectively indicating inadequate awareness. Further it also indicated that the majority were unaware of OCP’s effect on the fertility process and that it should be taken every day at the same time. In response to the statement “IUDs are reversible and can get pregnant after taking the device out” 93.7% (n=339) responded correctly and 34.8% (n=126) answered that the statement of “After IUD insertion, intercourse must be avoided for 1 week” as true. This statement concluded that the majority of the participants were unaware that they can have intercourse after 24 hours.

According to the awareness regarding Depo-Provera it was found that the majority did not have appropriate awareness regarding the statements of that the “Depo-Provera reduces the risk of endometrial cancer” and “Depo-Provera cannot be used longer than two (02) years” since majority 56.1% (n=203) and 56.4% (n=204) had responded to these statements incorrectly. This highlights that participants were unaware that Depo-Provera can reduce the risk of endometrial cancer and it cannot be used longer than two (02) years. Furthermore, it was found that the majority (97%, n=351) responded correctly to the statement “It is inserted under the skin of upper arm”. Only 36.5% (n=132) responded correctly to the statement “Implants can be inserted immediately after miscarriage”. Further, the minority 44.8% (n=162) and 46.1% (167) were aware that antibiotics like rifampicin can make the implant less effective and that an

implant is effective for almost five (05) years. Most participants have appropriately answered the statements regarding female condoms. It was found that overall all the participants managed to obtain above 50% regarding all the statements. This highlights that the majority (94.8%, n=343) were aware that female condoms provide protection against pregnancy and STDs.

### ***Awareness regarding efficacy of female contraceptive methods***

On assessing the efficacy of female contraceptive methods, it was found to be relatively poor. The majority were unable to answer the statements given related to the efficacy. Out of 362 participants who responded correctly to the statements included 8.6% (n=31) for OCP (efficacy rate of 99%), 1.1% (n=40) for IUD (more than 99% effective) & Depo - Provera (efficacy rate of 99.6%), 5% (n=18) for implant (effective more than 99% with perfect use) and 37% (n=134) for female condoms (When used correctly all of the time, 95% effective). This highlights that the majority were unaware of the efficacy of different female contraceptive methods.

Table 01, depicts the computed chi-square value for the level of awareness regarding different types of female contraceptive methods. It was found to be statistically significant as the p-value is less than the set p-value (0.05) among all the methods. In conclusion, there was a significant relationship between awareness and all the female contraceptive methods. The participants were graded as; if scored less than 39.9% were categorized as a poor level of awareness, between 40-59.9% as an average level of awareness, and 60% and above having as a good level of awareness.

**Table 01: Association between overall awareness and types of female contraceptive methods**

Statements	Good Awareness level	Average awareness level	Poor awareness level	P value
awareness on OCP	23.2%	74.6%	2.2%	0.001
awareness on IUD	83.4%	11.6%	5%	0.001
awareness on Depo-provera	35.9%	28.7%	35.4%	0.001
awareness on implant	35.9%	36.2%	27.9%	0.001
awareness on female condom	48.1%	37.3%	14.6%	0.001

[ $p \leq 0.05$  and Confidence Interval (CI) = 95%]

### *Awareness regarding side effects of female contraceptive methods*

On assessment of side effects of female contraceptive methods majority stated that breast tenderness is a side effect of OCP (61.3%,  $n=222$ ) and Depo-provera (50.8%,  $n=184$ ) while 58.3% ( $n=211$ ) stated vaginal infection is a side effect of IUD, 19.1% ( $n=69$ ) stated weight gain as a side effect of implants and 23.8% ( $n=86$ ) stated allergy as a side effect of female condoms. However, 74.5% ( $n=270$ ) of the nurses had average level of awareness regarding side effects on female contraceptive methods. Furthermore, 74.5 % ( $n=270$ ) had average awareness of the side effects of female contraceptive methods, while 2.2 % ( $n=8$ ) and 23.3 % ( $n=84$ ) had good and poor awareness, respectively regarding side effects of female contraceptive methods. Further the analysis showed that there were significant association between overall awareness and side effects ( $p=0.001$ ) of different female contraceptive methods ( $p \leq 0.05$ ).

### **Discussion**

Since nursing personals are an integral part of any health care system, they act as a reliable source of information for the general public. Nurses frequently provide basic contraception care and guidance in primary care settings and further, refer women for specialized assistance (Kelsey, 2017). In addition to that, awareness regarding

awareness, and positive attitudes toward family planning activities among eligible women are strongly advocated, and healthcare workers, particularly nurses and doctors should have sound awareness, and positive attitudes towards family planning (O'Driscoll & Parrott, 2019).

In the current study the majority of the participants (74.6%) had average awareness regarding the female contraceptive methods and only 2.2% had a good level of awareness. However, 23.2% were considered as having poor awareness. It is possible that the higher percentage of nurses with average awareness is attributable to the fact that not all nurses are trained to be midwives or that they have not worked in a healthcare setting that specializes with reproductive health. As a result, they will have less opportunity to learn extensive information about "female contraceptives." Awareness plays an important role in motivating contraceptive methods towards family planning (Bamufleh et al, 2017 & Charandabi et al, 2012). The current study showed low level of awareness in OCP (23.2%), injectable progesterone (35.9%), and implant (35.9%) except IUD (83.4%) when compared to the study conducted by Shahid in 2018 among nursing and midwifery students. According to that study although participants had a good understanding of the various methods, such as oral contraceptives (62%), injectable progesterone (63%), implants (83%), intrauterine contraceptive device (37%), tubal ligation (48%), and vasectomy (78%), their attitudes toward reliable contraceptives were not as positive as natural methods (Shahid, 2018). A study conducted regarding the awareness of emergency contraception among future healthcare providers in Northern Ghana found that almost more than half (54.9%) of the participants were unaware of emergency contraceptives (Mohammed, 2019). Another study conducted related to the awareness and attitude on emergency contraception among nursing personnel shows that an average, nearly three fourth (72.83%) of nursing personnel had awareness on emergency contraception as a whole

(Thapa, 2013). Furthermore, the awareness, attitudes, and practice of health care providers influenced the provision of contraceptive care to adolescents in Botswana (Tshitenge et al, 2018). Based on that, the majority of health care persons were only providing contraceptives on an irregular basis and were unfamiliar with newer contraceptive approaches (Tshitenge et al, 2018).

Moreover, according to the current study, nurses' awareness regarding the efficacy of female contraceptive methods concluded that the majority of the participants were not able to answer the statements regarding the efficacy of female contraceptive methods. The current analysis of data illustrated, only 37% were aware of the efficacy rates of female condoms, 8.6% regarding OCP, and 5% were aware of implants. It was also observed that only 1.1% were aware of the efficacy of IUD and Depo-Provera. However, a study done by Charandabi et al (2012) on communicating contraceptive effectiveness found comparatively higher level of awareness on efficacy of female contraceptive methods compared to our study. As the results Charandabi et al (2012) found that, only 46% of women knew that Combined Oral Contraceptives (COC) are more effective than condoms and 50% knew that IUDs are more effective than condoms. Furthermore, in a study on communicating contraceptive effectiveness, 83% of women said they consulted with a health care provider for the effectiveness of contraceptive methods (Steiner, 2003). In addition to that, Agasti in 2017, showed despite of having adequate awareness among female health workers, the usage of contraceptives by eligible couples in their respective locations was low due to a lack of motivational skills among them and some religious misconceptions and social norms. Therefore, this highlights the importance for nurses to have proper awareness regarding the efficacy of contraceptives methods.

The findings of the current study revealed that the majority of nurses had average awareness (74.5%) regarding the major side effects of female contraceptive methods. It was also found that 2.2% of nurses had a good level of awareness on side effects of female contraceptive methods. However, 23.3 % were considered to have inadequate awareness. A survey of Vietnamese medical students revealed that they have a high level of awareness, perceptions, awareness, and practice regarding contraceptive methods (Nguyen & Vo, 2018). Furthermore, a study conducted by Perera et al, in 2004, regarding awareness, behavior, and attitudes on induced abortion and family planning among Sri Lankan women illustrated 45% had been introduced to family planning by the public health midwife and among them out of 159 participants, a significant number, 30 had discontinued the family planning method due to socio-cultural reasons and adverse effects. Another study conducted about contraceptive prevalence in Qatar shows that 15.9% of women who currently used contraceptives, reported experiencing one or more side effects. The most common side effects in the Qatar study are vaginal bleeding (4.1%), severe headache (3.1%), abdominal pain (2.3%), and vaginal discharge (2%) (Arabab et al, 2011). On contrary, the current current study on awareness among nurses reported breast tenderness, vaginal infection, and weight gain as the major side effects. In addition to that, it has been shown, that the rate of discontinuation is higher among women who have not been adequately counseled about side effects (Arabab et al, 2011 & Sato et al, 2020). Therefore, nurses can play a vital role in counseling the community about the side effects of different female contraceptives.

In the current study there was no significant association found in awareness level regarding the awareness on contraceptive safety with the age, and years of experience as a nurse. In addition to that, a significant relationship was found between awareness and special training

regarding family planning ( $p=0.019$ ). Arabab et al (2011) found that women who were currently on contraceptives had a significant association with their age, partner's age, years of being married, educational status, economic status, and attitudes on family planning, which was similar to our findings.

### Conclusion

This study concludes that majority of the nurses had average awareness regarding safety and major side effects of female contraceptive

methods. However, nurses have poor awareness regarding the efficacy of female contraceptive methods. Furthermore, the level of knowledge regarding how to take OCP properly and its action on fertilization process was low. The awareness level was significantly associated with age and years of nursing experience. It can thus be concluded that it is critical to provide nurses with proper information and training in female contraceptive techniques during their career.

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