

Nursing Students' Knowledge, Attitude and Use regarding an Implanted Contraceptive Method

Winifred Chinyere Ukoha

<https://orcid.org/0000-0002-5792-7929>
University of KwaZulu-Natal, South Africa
winifredchinyere@gmail.com

Nomaxabiso M. Mooi

<https://orcid.org/0000-0002-2565-5981>
University of KwaZulu-Natal, South Africa

Abstract

Despite the prioritisation of contraceptives in the sustainable development goals for 2030 and their increasing availability, unplanned pregnancy remains a universal problem, representing up to 40 per cent of all reported pregnancies. Many sub-Saharan African countries, including South Africa, have resorted to the use of implanted contraceptives, such as Implanon, to decrease the rate of unintended pregnancies. Therefore, this study sought to assess the knowledge, attitude and use regarding the Implanon contraceptive method among undergraduate nursing students at the University of KwaZulu-Natal, South Africa. A quantitative descriptive cross-sectional study was conducted on 60 undergraduate nursing students who were selected using a stratified random sampling technique. Data were collected through questionnaires and analysed using the statistical package for social sciences (SPSS) version 24. The results revealed that 37 (61.7%) of the respondents were between the ages of 18 and 19 years and none were married or divorced. Fifty-five (91.7%) of them had no children, while 5 (8.3%) had experienced an unintended pregnancy before. Twenty-five (41.7%) of the respondents were not aware of the availability of Implanon, while 35 (58.3%) of them had unfavourable attitudes to the contraceptive method. The results also revealed a significant relationship between certain socio-demographic variables, especially between age and the experience of an unintended pregnancy ($p = 0.006$). Based on these findings, efforts should be made to promote contraceptive education and counselling. Further research, preferably qualitative research, is needed to explore the reasons for the unfavourable attitude to the implanted contraceptive method.

Keywords: knowledge; attitude; implanted contraceptive method; undergraduate nursing students

UNISA  university of south africa PRESS

African Journal of Nursing and Midwifery
<https://upjournals.co.za/index.php/AJNM/index>
Volume 21 | Number 2 | 2019 | #4439 | 16 pages

<https://doi.org/10.25159/2520-5293/4439>
ISSN 2520-5293 (Online)
© Unisa Press 2019



Published by Unisa Press. This is an Open Access article distributed under the terms of the Creative Commons Attribution-ShareAlike 4.0 International License (<https://creativecommons.org/licenses/by-sa/4.0/>)

Introduction

The United Nations report of 2015 indicates the contraceptive prevalence in Africa as 22 per cent, while the unmet need for family planning is 33 per cent (United Nations 2015, 8). In southern Africa, the contraceptive prevalence is 13 per cent and the unmet need for family planning is 64 per cent (United Nations 2015, 8). The World Health Organization (WHO) has been analysing research evidence to come up with the best evidence-based guidelines for the use of contraceptives. Meeting the contraceptive need of women is still a priority with the sustainable development goals for 2030. In 2016, adolescent sexual and reproductive health was prioritised, as two major worldwide health strategies, the 2030 Agenda for Sustainable Development and the United Nations Global Strategy for Women's, Children's and Adolescents' Health, are being implemented (Hindin et al. 2016, 159).

The South African government is trying its best to provide access to a wide variety of contraceptive options for its citizens and this led to the introduction of the long-acting reversible contraceptive (LARC), Implanon, in 2014. According to Bagade et al. (2014, 385), Implanon was approved by the Food and Drug Administration in 2006 and since its approval, many countries have adopted this method including South Africa in 2014, and there has been an upward trend in its uptake (Adams 2015, 32, 34).

According to Shisana et al. (2014, 126) and Ramathuba, Khoza, and Netshikweta (2012, 5), South African youths still engage in unsafe sexual behaviours which result in the high rate of HIV infection and unintended pregnancies among this group. A study by Grant and Hallman (2008, 375) suggests that pregnancy is the highest contributor to school dropout among adolescents. In order to deal with this upsurge, there is a need to examine the knowledge and attitudes of this population regarding this LARC that was recently added to the contraceptive options in South Africa.

Despite all efforts to reduce the rate of unwanted pregnancies, a wide range of young people and adolescents does not have adequate knowledge of and positive attitudes to the wide variety of contraceptive options available to them (Ramathuba, Khoza, and Netshikweta 2012, 5). The knowledge and attitude of the youth with regard to LARCs such as Implanon in South Africa are not known since this is a relatively recent addition. Moreover, the knowledge and attitudes of South African youths regarding contraception, in general, has been documented. In a study conducted in the Limpopo province, South Africa, by Ramathuba, Khoza, and Netshikweta (2012, 5) among secondary school girls shows that the majority were cognisant of diverse contraceptive options that can prevent pregnancy but were not knowledgeable about emergency contraceptives and other LARCs. Fear of possible side effects, unwillingness to use contraceptives, deficient contraceptive education and counselling were seen as the major reasons for unsuccessful contraceptive use and non-use among undergraduate females in South Africa (Coetzee and Ngunyulu 2015, 6). A report by the USAID shows that there has not been a reduction in the rates of sexual activity among adolescents but rather, in some instances, there has been an increase (Kothari et al. 2012, 65). It is also

suggested that the fact that the adolescent birth rate globally has reduced should not eliminate the significance of adolescent sexual and reproductive health needs (Hindin et al. 2016, 159).

Problem Statement

In spite of increasing contraceptive availability, unintended pregnancy represents up to 40 per cent of all reported pregnancies globally and more than 50 per cent in South Africa (Bello et al. 2010, 7; Sedgh, Singh, and Hussain 2014, 301). According to the WHO, in 2007 in southern Africa, 15 per cent of university students experienced unintended pregnancy, and an estimated 60 per cent of unintended pregnancies around the world occur among this group (Hoque and Ghuman 2012, 16). The rate of unintended pregnancies among South African university students is presumably high despite all efforts being made by the government to deal with this problem (Haffejee et al. 2017, 4; Jonas et al. 2016, 9). However, according to Grant and Hallman (2008, 375), unwanted pregnancy among South African students is still high and this affects their performance academically and also in most cases the prospects of getting a well-paid job later in life due to school dropout.

Jonas et al. (2016, 9) found that adolescent girls become pregnant at an unacceptably high rate in South Africa although the rate of sexual intercourse among adolescents in South Africa has declined to some extent. Nevertheless, those who are sexually active have an increased chance of becoming pregnant and this is despite the high prevalence of HIV infections and other sexually transmitted infections (STIs) in the country (Jonas et al. 2016, 12). Research has shown that a LARC, if well utilised, will reduce this surge of unintended pregnancy especially among adolescents (Connolly et al. 2014, 970). However, despite this crucial observation, only a limited number of studies have investigated the knowledge of long-acting contraceptive methods, especially Implanon, among adolescents and youths (Teal and Romer 2013, 3).

Purpose of the Study

To assess the knowledge, attitude and use regarding the Implanon contraceptive method among undergraduate nursing students at the University of KwaZulu-Natal, South Africa.

Research Method and Design

This study was a quantitative, non-experimental, descriptive, cross-sectional research design aimed at describing the knowledge, attitude and use regarding the implanted contraceptive method.

Study Setting

This study was conducted in the nursing discipline and among female nursing students. The discipline admits students mainly from areas around Durban for its undergraduate programmes, but from all over the country and even internationally for its postgraduate programmes. The Bachelor of Nursing (BN) programme admits approximately 70 students a year for each level of training.

Study Population, Sample and Sampling

The study population consisted of all the female undergraduate nursing students, but the accessible population of the study consisted of all the female first- and second-year undergraduate BN students in the selected campus which was approximately 90 students. This is because the other groups were in the clinical areas during the data collection period. To obtain a confidence interval of 95 per cent and 5 per cent precision a sample size of 74 was selected for the study.

Probability stratified random sampling was used to select the respondents in this study; this is to enable the equal representation of all the levels of study used for this study (Polit and Beck 2016, 256). The researcher first separated the entire population into two groups or strata; one group consisting of all first-year students and the other group consisting of all second-year students. The researcher then independently selected a random sample from each stratum (one random sample of 37 first-year and one random sample of 37 second-year students) using a computer program, until the desired sample size was achieved ($n = 74$). The sample size for this study was determined using a published sample size determination table for a finite population (Krejcie and Morgan 1970). According to the table, for a population size of 90, a sample size of 73 subjects would be enough to answer the research question.

Inclusion and Exclusion Criteria

The inclusion criterion considers all the undergraduate BN full-time students at the selected campus who are willing to participate in the study. The third years and fourth years are not included because they were not available during the study period as they are usually in the clinical areas and therefore difficult to access. The fourth years also have undergone some midwifery training which might have impacted on their knowledge and attitude.

Data Collection Instrument

The measurement instrument used in the study was self-report questionnaires. The researcher adapted the study instrument from the Ethiopia Ministry of Health (2014, 34), and Whitaker et al. (2008, 214, 215), whose questionnaires were deemed suitable for the study, as they measured similar variables as the current study. The study instrument was adapted from two sources and merged to achieve the research objectives. However, to enhance the validity and reliability, the instrument had to be re-evaluated.

The adapted instrument was tested for internal consistency. Preceding to the collection of data, the instrument was pretested on six non-participating groups of students in the same discipline that were purposively selected owing to the similarity of the respondents' characteristics in order to ensure the reliability of the instrument, and amendment was done accordingly.

The questionnaire comprised three sections. Section A was the demographic characteristics of the respondents, section B was their level of knowledge, and section C was their attitudes to Implanon and use of the method. The questions about the knowledge of and attitude to Implanon had three options from which the respondents had to choose if the given statement is "yes" or "agree", "no" or "disagree", and "do not know" or "neutral" about the given statement, while the use section had two options of "yes" or "no". Scoring of the items entails summing up the responses to a minimum and maximum score. In the knowledge scoring "yes" option was scored as 3, "no" scored as 2, while "do not know" was scored as 1 in positive questions, while the score was reversed in negative ones and scores ≥ 2.5 are regarded as knowledgeable and favourable attitude. In the same vein, for scoring of attitude section, "agree" option was scored as 3, "disagree" scored as 2, while "neutral" was scored as 1. The knowledge specific to the Implanon section was scored, which comprised 18 questions, and the scores range from 1–54. A score of 1–40 was regarded as not knowledgeable while 41 and above were regarded as knowledgeable. Likewise, the attitude section with four questions, the score ranges from 1–12, where a score of 1–9 was regarded as unfavourable attitude while 10 and above were regarded as favourable attitude.

Data Collection

Data collection started after the appropriate permission from the various authorities was secured. The researcher made appointments with the BN programme coordinator and respective lecturers of the two classes to arrange a time and venue that would be suitable to hand out the questionnaires. Once this was arranged, the researcher approached the students in a classroom setting for participation in the study after their lectures. The data were collected between 11 September and 22 October 2016 and it took the respondents approximately 10 minutes to fill in the questionnaires. Anonymity was ensured as the respondents were asked not to put any identification on the response sheet.

Data Analysis

SPSS Statistics, version 24.0, was used to analyse the data. The findings have been presented in frequency, figures, and tables. Descriptive statistics that describe one variable at a time was used, that is the frequencies and percentages, using contingency tables. Inferential statistics using Fisher's exact test and Pearson's correlation test were performed to test for associations between different social demographic variables and knowledge of and attitude to Implanon.

Ethical Considerations

Ethical clearance was obtained from the ethics committee of the University of KwaZulu-Natal (HSS/1263/016H), and permission of the University of KwaZulu-Natal registrar and academic leader of the Nursing Discipline was sought before conducting the study. Written informed consent was obtained from the respondents before the completion of the questionnaire and they were told to use only their initials to ensure confidentiality and anonymity. They were also informed that they can withdraw from the study at any time without any recrimination. Fair selection of the population was ensured using a scientific process of probability sampling to ensure that each member of the population has an equal chance of being selected (Emanuel et al. 2004, 935).

Results

A total of 60 students out of the anticipated sample of 74 first- and second-year female undergraduate nursing students participated in the study, giving a response rate of 81 per cent.

Sociodemographic Data

The majority of the respondents, 37 (61.7%), were between the ages of 18 and 19 years and none were married or divorced. With regard to the number of children of the respondents, 55 (91.7%) reported that they do not have any children, while 5 (8.3%) have experienced an unintended pregnancy before. Table 1 shows the demographic characteristics of the respondents.

Table 1: Respondents' demographic characteristics

| Demographic variables | Variable specification | n | % |
|------------------------------------|------------------------|----|------|
| Age group | 18–19 years | 37 | 61.7 |
| | 20–24years | 20 | 33.3 |
| | 25–29 years | 2 | 3.3 |
| | 30 years and above | 1 | 1.7 |
| Marital status | Single | 59 | 98.3 |
| | Separated | 1 | 1.7 |
| Number of children | None | 55 | 91.7 |
| | 1 | 4 | 6.7 |
| | 2 | 1 | 1.7 |
| Experience of unintended pregnancy | Yes | 5 | 8.3 |
| | No | 55 | 91.7 |

Respondents' Knowledge, Attitude, and Use regarding Implanon

Awareness of Implanon

With regard to the awareness of the availability of Implanon, 35 (58.3%) of the respondents indicated that they have heard about Implanon before. Among the 25 (41.7%) respondents that have heard about this method, most of them, 19 (31.7%), reported that their source of information was from health workers, and surprisingly no one reported to have ever heard about the contraceptive from the church.

Knowledge specific to Implanon

The majority of the respondents, 42 (70%), indicated that they know where Implanon is inserted in the body. About 29 (48.3%) reported that they know how long its effectiveness lasts. In the same vein, 29 (48.3%), indicated that Implanon is user-friendly, while 34 (56.7%) agreed that it needs a health provider to be removed. On the other hand, more than half of the respondents, 31 (51.7%), respectively negated only two items, namely that one does not have to remember to use it daily and that it is likely to come out of the arm.

A total of 44 (73.3%) of the respondents reported that they did not know when asked if this method was suitable for nulliparous women and whether it interferes with sexual interaction, 28 (46.7%). A total of 38 (63.3%) did not know whether a person quickly returns to fertility after removal of the implant and more than half of the respondents, 32 (53.3%), did not know whether Implanon increases the risk of infertility and infection. The same response was given by 36 (60%), and 34 (56.7%), of the respondents on whether Implanon was painful to remove and to insert, respectively.

The results of the study revealed that the nursing students were not knowledgeable about Implanon as a contraceptive method. The mean knowledge score was 34.30 out of a possible 54 and the standard deviation was 8.87. Tables 2 and 3 present the summary of the awareness and knowledge results.

Table 2: Respondents' awareness of Implanon

| Awareness | Variables specification | Freq. | % |
|--|-------------------------|-------|------|
| Are you aware of the availability of Implanon as a contraceptive method? | Yes | 35 | 58.3 |
| | No | 25 | 41.7 |
| Source of information | Health worker | 19 | 31.7 |
| | Family or friends | 11 | 18.3 |
| | Media | 4 | 6.7 |
| | Church | 0 | 0.0 |
| | Other | 1 | 1.7 |
| | Not applicable | 25 | 41.7 |

Table 3: Respondents' knowledge of Implanon

| Knowledge specific to Implanon | Yes | | No | | Do not know | |
|--|-----|------|----|------|-------------|------|
| | n | % | n | % | n | % |
| Do you know where it is implanted in the body? | 42 | 70.0 | 14 | 23.3 | 4 | 6.7 |
| Do you know how long it stays effective? | 29 | 48.3 | 23 | 38.3 | 8 | 13.3 |
| Is it appropriate for nulliparous women? | 10 | 16.7 | 6 | 10.0 | 44 | 73.3 |
| Does it interfere with sexual interaction? | 6 | 10.0 | 26 | 43.3 | 28 | 46.7 |
| Does one return to fertility once it is removed? | 13 | 21.7 | 9 | 15.0 | 38 | 63.3 |
| Can it be used without other people's knowledge? | 23 | 38.3 | 13 | 21.7 | 24 | 40.0 |
| Is it user-friendly? | 29 | 48.3 | 7 | 11.7 | 24 | 40.0 |
| Do you have to remember to use it every day? | 4 | 6.7 | 31 | 51.7 | 25 | 41.7 |
| Does it increase the risk of infertility? | 11 | 18.3 | 17 | 28.3 | 32 | 53.3 |
| Does it increase the risk of infection? | 8 | 13.3 | 20 | 33.3 | 32 | 53.3 |
| Is it likely to come out of the arm? | 5 | 8.3 | 31 | 51.7 | 24 | 40.0 |
| Is it painful to insert? | 12 | 20.0 | 14 | 23.3 | 34 | 56.7 |
| Is it painful to remove? | 13 | 21.7 | 11 | 18.3 | 36 | 60.0 |
| Does it make one uncomfortable? | 8 | 13.3 | 24 | 40.0 | 28 | 46.7 |
| Is it likely to move around the arm or body? | 12 | 20.0 | 19 | 31.7 | 29 | 48.3 |
| Does it need a health provider to be removed? | 34 | 56.7 | 2 | 3.3 | 24 | 40.0 |
| Does it cause weight loss/gain? | 17 | 28.3 | 14 | 23.3 | 29 | 48.3 |
| Is irregular bleeding one of the side effects? | 16 | 26.7 | 9 | 15.0 | 35 | 58.3 |

Attitude to Implanon

Four questions were used in order to determine the attitudes of the respondents to the use of the contraceptive method both now and in the future. With a mean attitude score of 8.76 ± 2.06 , the respondents have an unfavourable attitude to this method of contraception. The expected minimum score was 1 and the maximum score was 12. More than half of the respondents, 33 (55%), indicated that they do not have any intention of using the method in future. A greater percentage of the respondents, 47 (78.3%), and 41 (68.3%), believe that there are both benefits and negative effects of using this method respectively.

Finally, the respondents were asked whether this method will be among their first options if asked to choose a contraceptive method and more than half of the respondents, 31 (51.7%), indicated that it will not be among their first options. (See Figure 1.)

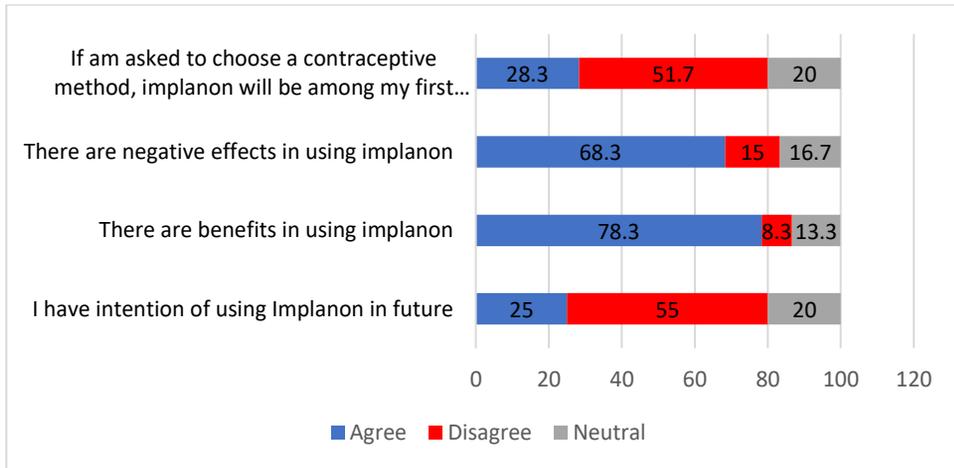


Figure 1: Attitude to Implanon

Use of Implanon

The results in Figure 2 shows that the majority, 58 (96.7%) of the respondents, had never used this method before, 58 (96.7%) of the respondents reported that they were not using this method at the time of the study, while three quarters, 45 (75.0), of the respondents indicated that they were not using any form of contraception.

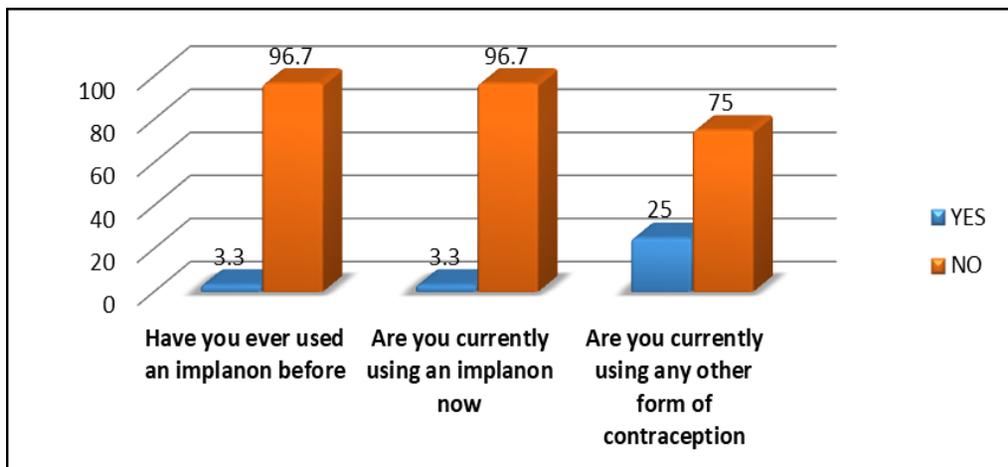


Figure 2: Use of Implanon

Correlation of Demographic Characteristics and some Knowledge Variables

Pearson’s correlation test was run to test the relationship between the social demographic characteristics and some knowledge variables. As stated in Table 4, there

was a significant relationship between the following variables: age and marital status ($r = .516, n = 60, p = .000$), age and number of children ($r = .538, n = 60, p = .000$), and age and experience of unplanned pregnancy ($r = .351, n = 60, p = .006$). A strong relationship was also found between marital status and the number of children ($r = .704, n = 60, p = .000$), the number of children and experience of an unplanned pregnancy ($r = .429, n = 60, p = .001$), and between ever heard about Implanon and source of information ($r = .953, n = 60, p = .000$).

Table 4: Correlation of demographic characteristics and some knowledge variables

| | Age | Marital status | Number of children | Ever had an unplanned pregnancy | Ever heard of Implanon | Source of information |
|---------------------------------|---------|----------------|--------------------|---------------------------------|------------------------|-----------------------|
| Age | 1 | .516** | .538** | -.351** | -.118 | -.111 |
| Marital status | .516** | 1 | .704** | .039 | -.110 | .027 |
| Number of children | .538** | .704** | 1 | -.429** | -.144 | -.101 |
| Ever had an unplanned pregnancy | -.351** | .039 | -.429** | 1 | .010 | .036 |
| Ever heard of Implanon | -.118 | -.110 | -.144 | .010 | 1 | .953** |
| Source of information | -.111 | .027 | -.101 | .036 | .953** | 1 |

* Correlation is significant at the 0.05 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

Validity and Reliability

Content validity was ensured in this study by relating the objectives of the study to questions in the research instrument. The study instrument was also pretested before the actual study to ensure the reliability of the instrument. Cronbach’s alpha coefficient test, which is an internal consistency analysis according to Polit and Beck (2016, 344), was performed on the research instrument and it achieved an acceptable score of 0.8.

Discussion

The study demonstrated that 57 (95%) of the respondents were between the ages of 18 and 24. The student’s ages are similar to those in studies done in New York by Bachorik et al. (2015, 231) and the one done by Okpo, Allerton, and Brechin (2014, 936) in Scotland. However, these results contrast those of a study conducted in the Limpopo province by Ramathuba, Khoza, and Netshikweta (2012, 7), where the students’ ages were lower. The age range of this study’s respondents represents the university-going age in South Africa. Only a few of them 5 (8.3%), have children; this is similar to previous studies done in the Limpopo province by Ramathuba, Khoza, and Netshikweta (2012, 4) but different to the studies in Ethiopia and Nigeria where the majority of the respondents, 343 (80.9%), were married with children (Gebre-Egziabher et al. 2017, 3; Owolabi, Ter Goon, and Seekoe 2017, 5). The results of the study regarding the

experience of unintended pregnancy are encouraging as the majority of the respondents, 55 (91.7%), have never experienced an unintended pregnancy. This contrasts the findings of a New York study, where a higher number of the respondents, 49 (38%), of almost the same age range have experienced an unintended pregnancy (Bachorik et al. 2015, 231).

The scoring of the study results revealed that most of the respondents, 78.3 per cent, were not knowledgeable about this method of contraception. The results of the study portrayed that the majority of the respondents, 35 (58.3%), were aware of the availability of Implanon although this percentage is insufficient for the proper use of this method. However, knowledge and awareness are not enough, they should translate into actual higher use of LARC, and therefore, there is a need for further research into why the high level of knowledge does not translate into usage (Anguzu et al. 2014, 6).

These results were not as high as previous findings by the Ethiopia Ministry of Health (2014, 32) where awareness of Implanon was as high as 92.5 per cent among non-users, but almost comparable to the findings from a cross-sectional study in the USA by Bachorik et al. (2015, 230) and in Norway by Bratlie et al. (2014, 196), and also with the findings of a survey on the knowledge of LARC among young adult women aged 18 to 30 years where only 8 per cent of the respondents have ever heard about implants as a contraceptive method (Spies et al. 2010, 397). A greater percentage of the respondents, 19 (31.7%), who are aware of the availability of Implanon quoted the healthcare workers as a source of information. Charyeva et al. (2015, 384), and Coetzee and Ngunyulu (2015, 6) attested to the active role required from healthcare workers in raising awareness of LARC among young women, instead of depending on client demands for contraceptives which they know nothing about. Further, future research into the most innovative ways of increasing awareness of LARC among young people is suggested (Charyeva et al. 2015, 391). This result was contrary to the findings of a study in the Limpopo province by Ramathuba, Khoza, and Netshikweta (2012, 3), where parents and the media were the major sources of information about contraceptives.

The results showed that the respondents did not have any personal experience of the contraceptive method contrary to the findings of Okpo, Allerton, and Brechin (2014, 936, 937) which indicated that the participants have a high level of mistrust about this method based on what they have heard from other users.

Interestingly, some results are contradictory, however, as the number of respondents indicating that they know where Implanon is implanted in the body, 42 (70.0%), was higher than the number of respondents indicating that they know about this contraceptive, 35 (58.3%). This is interesting, because even without any knowledge about this contraceptive method, the respondents are knowledgeable enough about the implant site and duration of effectiveness. This echoes the results of a study by Okpo, Allerton, and Brechin (2014, 936), Spies et al. (2010, 396) and Anguzu et al. (2014, 3)

where both users and non-users correctly indicated the site of implant. However, the remaining knowledge score was low and consistent.

The scoring of the study results showed that most of the respondents, 41 (68.3%), did not have a favourable attitude to this method of contraception. The majority of the respondents indicated that they do not have any intention of using this method in the future and that if they were asked to choose a contraceptive method that Implanon will not be among their first options (55.0%, n = 33 and 51.7%, n = 33) respectively. However, surprisingly, the majority of them also think that there are benefits in using this method and also negative effects in using this method (78.3%, n = 47 and 68.3%, n = 41) respectively. These results are in line with most of the previous literature on Implanon and other contraceptives where young people who are sexually active also show an unfavourable attitude to contraception (Bachorik et al. 2015, 231; Okpo, Allerton, and Brechin 2014, 936).

Previous studies have indicated that the use and uptake of this method among young people are very low (Bratlie et al. 2014, 199; Spies et al. 2010, 396). Similarly, the results of this study showed the respondents' use to be very low as only two (3.3%) indicated that they have ever used Implanon before and that they are currently using it. Surprisingly, the majority of the respondents, 45 (75.0%), also indicated that they were not using any other form of contraception. These results are also in line with most of the previous literature on the use of contraceptives among young people in South Africa as the majority have a negative perception of most contraceptive methods (Ramathuba, Khoza, and Netshikweta 2012, 4). In a study at the Venda University where negative attitudes to and a lack of interest in contraceptives were also reported among male students (Raselekoane, Morwe, and Tshitangano 2016, 4). This is also consistent with a study in Uganda by Anguzu et al. (2014, 6) where the attitude of LARC for married women was negatively associated with its use.

Limitations of the Study

The main limitation of the present study is that the data were collected through the use of a questionnaire, which may not allow for an in-depth analysis of the problem. The other limitation of this study is the population used (students training to be health providers) and therefore the results need to be interpreted with caution and might not be generalised to the entire population of young people in South Africa.

Recommendations

As the study demonstrated that the health worker was not the main source of contraceptive information, there is, therefore, a need to strengthen and increase health workers' role in this regard. Health education and counselling should also be rendered to students. Proper measures should be instituted to ensure the implementation of

adolescent reproductive health facilities. Further, there is a need for nursing educators to create more opportunities for training at a higher level and for clarification of myths, so that nurses will be better equipped and have a good attitude to contraceptives to be able to render effective services to the general public. Basic concepts of contraception should be incorporated into all levels of nursing curricula. There is also a need to investigate the subject further utilising qualitative research methods to explore reasons for unfavourable attitudes to the contraceptive method. Further studies can be employed to clarify some of the myths and misconceptions held about this method.

Conclusion

Overall, the respondents were not knowledgeable about Implanon as a contraceptive method. The demographic variables were found to have a relationship with the awareness of the method and sources of information. The results revealed that the respondents demonstrated an unfavourable attitude to this method of contraception. However, they indicated that they think that there are some benefits in using this method and, on the other hand, that they believe that there are negative effects as well, and their level of interest in this contraceptive method is very low.

Acknowledgements

The authors thank the study institution and the respondents for participating in the study.

Authors' Contribution

W.C. conducted this study for her honours degree in nursing, while N.M was the supervisor who guided the study from the beginning until completion. Both W.C and N.M contributed in writing to the article based on the thesis, and N.M approved the article.

References

- Adams, B. 2015. "Subdermal Implants: A Recent Addition to the Choice of South African Contraceptives." *Professional Nursing Today* 19 (2): 32–34.
<https://hdl.handle.net/10520/EJC174869>.
- Anguzu, Ronald, Raymond Tweheyo, Juliet N. Sekandi, Vivian Zalwango, Christine Muhumuza, Suzan Tusiime, and David Serwadda. 2014. "Knowledge and Attitudes towards the Use of Long Acting Reversible Contraceptives among Women of Reproductive Age in Lubaga Division, Kampala District, Uganda." *BMC Research Notes* 7 (1): 153. <https://doi.org/10.1186/1756-0500-7-153>.

- Bachorik, Alexandra, Joy Friedman, Ashley Fox, Anne T. Nucci, Carol, R. Horowitz, and Angela Diaz. 2015. "Adolescent and Young Adult Women's Knowledge of and Attitudes towards Etonogestrel Implants." *Pediatric and Adolescent Gynecology* 28:229–33. <https://doi.org/10.1016/j.jpag.2014.08.002>.
- Bagade, O., V. Pawar, R. Patel, B. Patel, V. Awasarkar, and S. Diwate. 2014. "Increasing Use of Long Acting Reversible Contraception: Safe, Reliable, and Cost-Effective Birth Control." *World Journal of Pharmacy and Pharmaceutical Sciences* 3 (10): 364–92.
- Bello, Braimoh, Danuta Kielkowski, Dick Heederik, and Kerry Wilson. 2010. "Time-to-Pregnancy and Pregnancy Outcomes in a South African Population." *BMC Public Health* 10 (1): 565. <https://doi.org/10.1186/1471-2458-10-565>.
- Bratlie, Marte, Trine Aarvold, Elling T. Skarn, Jonas A. Lundekvam, Britt-Ingjerd Nesheim, and Erik T. Askevold. 2014. "Long-Acting Reversible Contraception for Adolescents and Young Adults – A Cross-Sectional Study of Women and General Practitioners in Oslo, Norway." *European Journal of Contraception and Reproductive Health Care* 19:194–202. <https://doi.org/10.3109/13625187.2014.903237>.
- Charyeva, Zulfiya, Olugbenga Oguntunde, Nosa Orobato, Emmanuel Otolorin, Fatima Inuwa, Olubisi Alalade, Dele Abegunde, and Saba'atu Danladi. 2015. "Task Shifting Provision of Contraceptive Implants to Community Health Extension Workers: Results of Operations Research in Northern Nigeria." *Global Health* 3 (3): 382. <https://doi.org/10.9745/GHSP-D-15-00129>.
- Coetzee, Maria H., and Roinah N. Ngunyulu. 2015. "Assessing the Use of Contraceptives by Female Undergraduate Students in a Selected Higher Educational Institution in Gauteng." *Curationis* 38 (2): 1–7. <https://doi.org/10.4102/curationis.v38i2.1535>.
- Connolly, A., G. Pietri, J. Yu, and S. Humphreys. 2014. "Association between Long-Acting Reversible Contraceptive Use, Teenage Pregnancy, and Abortion Rates in England." *International Journal of Women's Health* 6:961–74. <https://doi.org/10.2147/IJWH.S64431>.
- Emanuel, Ezekiel J., David Wendler, Jack Killen, and Christine Grady. 2004. "What Makes Clinical Research in Developing Countries Ethical? The Benchmarks of Ethical Research." *Journal of Infectious Diseases* 189 (5): 930–7. <https://doi.org/10.1086/381709>.
- Ethiopia Ministry of Health. 2014. "Evaluation of the Implanon Scale-Up Initiative in Ethiopia's Southern Nations, Nationalities, and People's Region." The Federal Democratic Republic of Ethiopia.
- Gebre-Egziabher, Desta, Araya Abrha Medhanyie, Mussie Alemayehu, and Fisaha Haile Tesfay. 2017. "Prevalence and Predictors of Implanon Utilization among Women of Reproductive Age Group in Tigray Region, Northern Ethiopia." *Reproductive Health* 14 (1): 62. <https://doi.org/10.1186/s12978-017-0320-7>.

- Grant, Monica J., and Kelly K. Hallman. 2008. "Pregnancy-Related School Dropout and Prior School Performance in KwaZulu-Natal, South Africa." *Studies in Family Planning* 39 (World Health, Reproductive, Research and K4Health): 369–82. <https://doi.org/10.1111/j.1728-4465.2008.00181.x>.
- Haffejee, Firoza, Laura O'Connor, Nalini Govender, Poovendhree Reddy, Maureen N. Sibiya, Shanaz Ghuman, Thembelihle Ngxongo, and Dorinda Borg. 2017. "Factors Associated with Unintended Pregnancy among Women Attending a Public Health Facility in KwaZulu-Natal, South Africa." *South African Family Practice* 1–5. <https://doi.org/10.1080/20786190.2017.1396790>.
- Hindin, Michelle J., Özge Tuncalp, Caitlin Gerdt, Jessica D. Gipson, and Lale Say. 2016. "Monitoring Adolescent Sexual and Reproductive Health." *Bulletin World Health Organization* 94 (3). <https://doi.org/10.2471/BLT.16.170688>.
- Hoque, Muhammad, and Shanaz Ghuman. 2012. "Contraceptive Practices in the Era of HIV/AIDS among University Students in KwaZulu-Natal, South Africa." *SAHARA-J: Journal of Social Aspects of HIV/AIDS* 9 (1): 15–19. <https://doi.org/10.1080/17290376.2012.665254>.
- Jonas, Kim, Rik Crutzen, Bart van den Borne, Ronel Sewpaul, and Priscilla Reddy. 2016. "Teenage Pregnancy Rates and Associations with other Health Risk Behaviours: A Three-Wave Cross-Sectional Study among South African School-Going Adolescents." *Reproductive Health* 13 (1): 50. <https://doi.org/10.1186/s12978-016-0170-8>.
- Kothari, M. T., S. Wang, S. K Head, and N. Abderrahim. 2012. "Trends in Adolescent Reproductive and Sexual Behaviors." In *DHS Comparative Reports No. 29*. Calverton, Maryland, USA: ICF International.
- Krejcie, Robert V., and Daryle W. Morgan. 1970. "Determining Sample Size for Research Activities." *Educational and Psychological Measurement* 30 (3): 607–10. <https://doi.org/10.1177/001316447003000308>.
- Okpo, E., L. Allerton, and S. Brechin. 2014. "'But You can't Reverse a Hysterectomy!' Perceptions of Long-Acting Reversible Contraceptives (LARC) among Young Women Aged 16–20 Years: A Qualitative Study." *Public Health* 128 (10): 934–9. <https://doi.org/10.1016/j.puhe.2014.08.012>.
- Owolabi, Eytayo Omolara, Daniel Ter Goon, and Eunice Seekoe. 2017. "Attitude to, and Knowledge and Practice of Family Planning among Women of Child-Bearing Age Attending Selected Hospitals in Osogbo, Nigeria." *Africa Journal of Nursing and Midwifery* 19 (3): 1–13. <https://doi.org/10.25159/2520-5293/1683>.
- Polit, Denise F., and Cheryl Tatano Beck. 2016. *Nursing Research: Generating and Assessing Evidence for Nursing Practice*. Lippincott Williams and Wilkins.

- Ramathuba, Dorah U., Lunic B. Khoza, and Mutshinyalo L. Netshikweta. 2012. "Knowledge, Attitudes and Practice of Secondary School Girls towards Contraception in Limpopo Province." *Curationis* 35 (1): 1–7. <https://doi.org/10.4102/curationis.v35i1.45>.
- Raselekoane, Nanga R., Keamogetse G. Morwe, and Takalani Tshitangano. 2016. "University of Venda's Male Students' Attitudes towards Contraception and Family Planning." *African Journal of Primary Health Care and Family Medicine* 8 (2): 1–7. <https://doi.org/10.4102/phcfm.v8i2.959>.
- Sedgh, Gilda, Susheela Singh, and Rubina Hussain. 2014. "Intended and Unintended Pregnancies Worldwide in 2012 and Recent Trends." *Studies in Family Planning* 45 (3): 301–14. <https://doi.org/10.1111/j.1728-4465.2014.00393.x>.
- Shisana, Olive, Thomas Rehle, Leickness C. Simbayi, Khangelani Zuma, Sean Jooste, Nompumelelo Zungu, Demetre Labadarios, and Dorina Onoya. 2014. *South African National HIV Prevalence, Incidence and Behaviour Survey, 2012*. Cape Town: Human Sciences Research Council.
- Spies, E. L., M. N. Askelson, E. Gelman, and M. Losch. 2010. "Young Women's Attitude, Knowledge, and Behaviour related to Long-Acting Reversible Contraceptives." *Women's Health Issues* 20 (6): 394–9. <https://doi.org/10.1016/j.whi.2010.07.005>.
- Teal, Stephanie B., and S. Elizabeth Romer. 2013. "Awareness of Long-Acting Reversible Contraception among Teens and Young Adults." *Journal of Adolescent Health* 52:S35–S39. <https://doi.org/10.1016/j.jadohealth.2013.01.013>.
- United Nations. 2015. *Trends in Contraceptive Use Worldwide*. New York: UN.
- Whitaker, Amy K., Lisa M. Johnson, Bryna Harwood, Laurel Chiappetta, Mitchell D. Creinind, and Melanie A. Gold. 2008. "Adolescent and Young Adult Women's Knowledge of and Attitudes toward the Intrauterine Device." *Contraception* 78:211–7.