Expanding Contraceptive Options in South Africa: Knowledge, Attitudes, and Practices Surrounding the Intrauterine Device (IUD)

By

Sarah Anne Gutin
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Supervisor: Dr. Chelsea Morroni
School of Public Health and Family Medicine
University of Cape Town

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PROJECT TITLE

Expanding Contraceptive Options in South Africa: Knowledge, Attitudes, and Practices Surrounding the Intrauterine Device (IUD)

Principle Investigator

Dr. Chelsea Morroni, Senior Researcher
Women's Health Research Unit
School of Public Health and Family Medicine
University of Cape Town, South Africa

Co-Investigators

Sarah Gutin, MPH Candidate
Women's Health Research Unit
School of Public Health and Family Medicine
University of Cape Town, South Africa

Regina Mlobeli, Researcher
Women's Health Research Unit
School of Public Health and Family Medicine
University of Cape Town, South Africa

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ABSTRACT

The intrauterine device (IUD) is a safe, effective, convenient, reliable, inexpensive, and cost effective form of reversible contraception. It rivals female sterilization, injectables, and implants with respect to effectiveness in pregnancy prevention. Once inserted, IUDs are nearly maintenance free; some IUDs can even be used for over a decade. In many settings however, the utilization of this form of contraception is poor and a number of barriers to usage exist. These barriers often relate to lack of knowledge and misperceptions among both potential users and healthcare providers.

The IUD is a reliable option that may be an ideal form of contraception for many women in South Africa. In order to make this method available on a wider scale, it is necessary to provide correct information to women and health care professionals and to increase the availability and use of this highly effective method.

We conducted a cross-sectional descriptive study designed to assess the current knowledge, attitudes, and practices of potential users and health care providers with respect to the IUD. We recruited 205 women between 15 to 49 years of age who were attending family planning and STI care services at four primary level public clinics (two in the more urban Western Cape Province and two in the rural Eastern Cape Province in South Africa). In addition, we interviewed 32 providers from 12 clinics (six clinics per province). Ethical approval for this research was obtained from both the University of Cape Town and Walter Sisulu University (formerly the University of the Transkei). Permission was also given by the local and provincial health services.

Among clients, knowledge of the IUD was poor. About 26% of women had heard of the IUD. After the method was explained to them, 89.7% of women believed that there were advantages to using the IUD and 72.7% of women said that they would consider using the IUD in the future. Also, women thought the IUD was an easier contraceptive method to use than oral contraceptive pills, injectables, male and female condoms, and female sterilization.

Logistic regression modeling showed that, after adjusting for level of education, being from the Western Cape, older age, and having heard of emergency contraception all independently predicted awareness of the IUD method.

For the most part, providers knew how the IUD worked to prevent pregnancy; however providers were lacking in more detailed knowledge about the method and had misinformation about the IUD. Almost all (93.6%) of providers recognized their need for more information and training about the IUD. Providers reported that barriers to IUD usage in South Africa were lack of knowledge of the method on the part of providers (84.4%), a lack of trained providers to insert or remove the IUD (62.5%), limited availability of the device at health facilities (56.3%), and a lack of knowledge on the part of potential users (46.9%). Despite these barriers, 81% of providers believed women would be interested in the IUD if they knew about it and 73.3% believed the IUD should be promoted in South Africa.

Our results suggest that the IUD would be a welcome addition to the contraceptive method mix in South Africa and that both clients and providers would be interested in this method. It is clear that awareness campaigns among women seeking contraception

would be necessary for building support and publicizing the IUD. It will also be necessary to train and educate providers, focusing on up to date information, dispelling myths, and proper insertion and removal techniques. South Africa could re-introduce the IUD into the contraceptive method mix and increase women's choice by adding this valuable, viable, and sustainable option to the contraceptive method mix. The findings of this study, which was requested by the provincial health services, will be used to inform policy and as a starting point for assessing the feasibility and acceptability of a greater role for the IUD in the contraceptive method mix in South Africa.

BACKGROUND

Types of IUDs

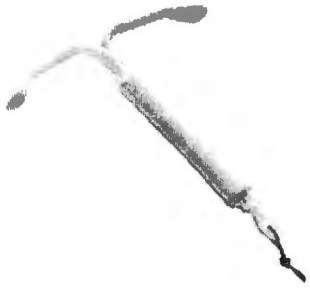
IUDs can be classified as being either inert and unmedicated, or medicated, with either copper or hormones added. The first modern IUDs appeared in the 1960s and were made of polyethylene, an inert plastic. At that time, models such as the Lippes Loop, Marguiles Spiral, Saf-T-Coil, and others were on the market [1]. The Lippes Loop was the most widely used unmedicated IUD at the time [2].

It was later found that adding copper to the plastic produced an IUD that was more effective at preventing pregnancy and caused fewer bleeding problems [1]. The first generation of Copper IUDs, the Cu-7 and the TCu-200 had fewer side effects, less bleeding and were just as effective as earlier models at preventing pregnancy. These IUDs were only effective for two to three years and so the second generation of copper IUDs was developed to provide longer pregnancy protection than their predecessors. The vertical and horizontal arms of these second generation IUDs contain copper. Some currently available copper IUDs are the Copper T380A (TCu 380A), Multiload-375, TCu-220C, and the Nova-T. The TCu 380A is the most frequently used IUD in the world (See Figure 1) [3]. A variation on the tradition copper T model is the frameless IUD (FlexiGard), which is a single monofilament polypropylene string, knotted at both ends, with six copper bands surrounding the thread [4]. Although this design may be better suited to nulliparous women and those with a smaller uterine cavity, the cumulative expulsion rate for the FlexiGard is significantly higher at all intervals when compared to the Copper T380A [5]. This model is not widely used.

Figure 1: Copper T380A (TCu 380A).

Hormone-releasing IUDs constantly release small amounts of steroid hormone into the uterus. The levonorgestrel-releasing IUD, marketed under the name Mirena, was first available in 1990 and delivers 20 ug of the progestin levonorgestrel per day over 5 years although data support its effectiveness for as long as 7 years (see Figure 2) [3,6].

Figure 2: The levonorgestrel-releasing IUD (Mirena).



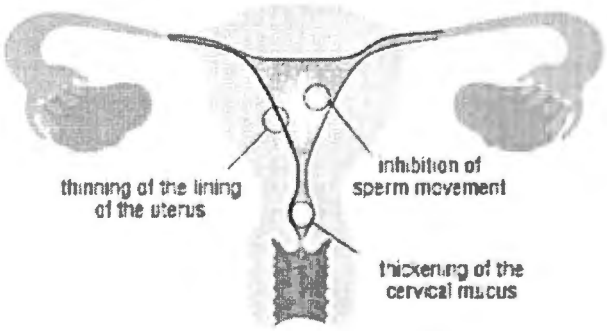
Mechanisms of Action

The IUD is a small device that is inserted by a trained health care provider. It is inserted via the cervix into a woman's uterine cavity to prevent pregnancy. Different IUDs work as a contraceptive through varied mechanisms yet all IUDs make fertilisation very unlikely.

The older and more commonly available copper containing IUDs are spermicidal and inhibit sperm transport, mobility, and viability. These IUDs work by preventing fertilization rather than interfering with implantation. The copper ions released from the device are toxic to sperm and interfere with sperm movement, inhibit sperm penetration into the egg, change the transport speed of the ovum and damage it, and create a foreign body inflammatory reaction that results in a spermicidal endometrium [7]. The contraceptive efficacy of copper IUDs is directly correlated to the surface area of copper in the endometrial cavity [8]. These prefertilisation effects constitute the primary mechanism of action for pregnancy prevention in the copper IUD. In this way, copper IUDs are mainly contraceptive and not abortifacient.

The main mechanisms of action of the newer and less commonly available progesterone-releasing IUD (Levonorgestrel) is to change and thicken the cervical mucus and render it impenetrable to sperm while the plastic IUD frame induces a foreign body inflammatory response in the endometrium, although to a lesser degree than the copper IUD (see Figure 3). The endometrium is converted to be insensitive to ovarian estradiol and there are only limited effects on the pituitary [9]. The levels of progesterone in the device are insufficient to affect ovulation [10].

Figure 3: An internal view of the Mirena IUD and how it works as a contraceptive.



Source: Berlex-Mirena US, www.mirena-us.com

For all IUD types, the return to full fertility is rapid after the removal of the device. The median time to planned pregnancy following removal of the copper IUD is about three months [10]. In a study of 810 women who requested IUD removal for planned

pregnancy, 361 (44%) conceived within 5 months and 671 (86%) conceived within one year of removal [11]. Younger women have been found to have a faster and more complete return to fertility, but after controlling for age, the duration of use has not been found to have an impact on the time to return to fertility [10].

Efficacy of the IUD

IUDs are very efficacious with respect to pregnancy prevention. The pregnancy rate for all major IUD types is less than one per 100 women per year [2]. IUDs are just as effective as hormone implants, injectable contraceptives, and voluntary male and female sterilization [2]. The TCu 380A and the levonorgestrel-releasing IUD have been shown respectively, in clinical trials, to be 99.2% and 98% effective at preventing pregnancy in one year of typical use [12]. Another study found that after tubal ligation, the levonorgestrel IUD and the TCu 380A were the second and third most effective contraceptive options [13]. Modern IUDs prevent pregnancy so well that they avert deaths that would have been due to pregnancy-related causes [2].

Studies have consistently shown copper IUDs to be very efficacious. In a large study, less than one woman per 100 became pregnant in the first year of use and in another study only 2.1 per 100 became pregnant in ten years of use [2]. In a large randomized trial, the copper IUD was found to have a failure rate of 1.26 per 100 woman-years and was associated with a rate of ectopic pregnancy of 0.25 per 100 woman-years. Although the device is approved for use up to ten years, data support high efficacy rates as long as 12 years [3]. In a recent study, no pregnancy was observed in 366 woman-years of observation beyond ten years of use and the authors found no evidence that the TCu 380A IUD loses its effectiveness after 10 years of use [14].

The levonorgestrel releasing IUD may be the most effective IUD with just 0.3 pregnancies per 100 women after five years of use [2, 10, 15]. However, another study has shown that levonorgestrel IUDs are no more effective than copper IUDs, such as the TCu 380A, which use more than $250mm^2$ of copper. For the levonorgestrel system, the failure rate has been found to be 0.09 and the ectopic pregnancy rate is 0.02 per 100 woman-years [16].

Due to their high efficacy rates, IUDs tend to be used longer than any other reversible contraceptive method [2, 17]. Women who use the IUD report high levels of satisfaction across many settings [18, 10, 20, 21, 22]. Continuation rates for both the copper and levonorgestrel IUDs are similar. At one year, continuation rates for the IUD are high at around 80% while they are between 38 to 50% after five years of use [20, 23]. One study in Kenya comparing the IUD, the injectable, and oral contraceptive pills found that the IUD had the lowest rate of discontinuation with 20% of users as compared to 80% for pills and 39% for the injectable after one year [19]. A study in Turkey found that mean duration of use was 5.8 years [17].

After IUD insertion, uterine contractions can sometimes push the IUD downwards leading to either partial or complete expulsions of the device. Most expulsions occur in the first year and especially within the first three months after insertion [2, 9, 23]. Expulsion rates vary from less than one to more than 7 per 100 women in the first year of use [2]. Another study found that between 2% and 10% of IUD users spontaneously expels their IUD within the first year [16]. However, failure rates for the IUD shortly after insertion also seem to decrease with the experience of the provider. One study showed that doctors with limited experience had twice the failure rate of experienced doctors and those doctors who were inexperienced had three times

the failure rate [24]. Partial or complete expulsions can lead to unplanned pregnancies. Among copper IUD users, partial expulsions outnumber complete expulsions by more than a factor of three [10]. Younger women, women who have never given birth before, and women with heavy periods or severe dysmenorrhoea are more likely to expel their IUDs [12, 16]. Correct insertion of the IUD placed high up in the fundus is thought to reduce the chance or expulsion [10, 12, 25].

Major and Minor Side Effects

In general, women report fewer side effects with the IUD than with oral, implantable, or injectable contraceptives [23]. However, as with most other methods of contraception, the most commonly cited reason for discontinuation of both the copper and hormone-releasing IUDs are side effects [17, 19, 23]. Most of these side effects relate to changes in bleeding patterns or menstrual problems such as amenorrhoea, spotting or irregular bleeding, or increased menstrual bleeding [9]. The cumulative 5-year termination rate because of bleeding problems is up to 20% for the copper IUD, which can increase blood loss by about 50 to 75%, and up to 14% for the levonorgestrel system [9, 16]. For copper IUDs, commonly reported side effects are heavier and increased menstrual bleeding for the first 3 to 6 months after insertion, dysmenorrhoea, and cramping, pain, or spotting after insertion [22, 26].

For the levonorgestrel IUD, the side effects are similar to those of other hormonal contraceptives. These include acne, dizziness, headaches, nausea, depression, breast tenderness, vomiting, weight gain and ovarian cysts [15]. As compared to copper containing IUDs, hormone releasing IUDs are more likely to induce amenorrhoea or irregular spotting [10, 12, 15]. Most women with the levonorgestrel IUD ovulate normally but experience diminished menstrual bleeding because the levonorgestrel released by the IUD concentrates in the endometrium, decreases the thickness of the endometrium, and reduces the amount of endometrial shedding [9, 25, 27]. In a large trial comparing the levonorgestrel system with the copper IUD, one third of women using the levonorgestrel system immediately, and 70% of women by the end of two years, developed oligomenorrhea (no more than one episode of bleeding in a 90 day period) or amenorrhoea [27]. The number of bleeding days as well as the amount of bleeding decreases compared to a normal menstrual flow with use of the levonorgestrel IUD and so the device has been used successfully to treat menorrhagia (excessive menstrual flow) [3, 9, 27].

Safety Issues

The IUD is one of the safest and best tolerated methods of contraception available [1]. Serious morbidity from IUD use is rare but there are certain risks related to the method such as intrauterine pregnancy or spontaneous abortion, uterine perforation, pelvic inflammatory disease and related infertility, ectopic pregnancy, and mortality [28]. Some risks also relate to insertion and removal. Please see the insertion and removal section for more detail.

- *The Risk of Intrauterine Pregnancy While an IUD is Inserted*

Although it is a very rare occurrence given the high efficacy of the IUD method, spontaneous abortion is the most frequent complication of pregnancy with an IUD in place. Greater than 50% of uterine pregnancies spontaneously abort if the IUD is not removed and more than half of those occur in the second trimester [2, 8]. If pregnancy is confirmed in an IUD user, the IUD should be removed as soon as possible.

Removing the IUD immediately reduces the risk of spontaneous and septic abortions to the same level faced by other women [2]. An IUD that is left in place however during pregnancy increases the risk of premature delivery by about four–fold although it does not increase the chance of other complications such as birth defects, genetic abnormalities, or molar pregnancy [2, 8].

- *The Risk of Uterine Perforation*

In a very small proportion of cases, an IUD, particularly if not correctly inserted, can perforate the wall of the uterus. Perforation of the uterus happens when the IUD, the inserter tube, the uterine sound (a tool used to determine the depth of the uterine cavity), or another gynaecologic instrument used during insertion, pierces the uterine muscle wall. Perforations can be partial, with just part of the IUD piercing the uterine wall or cervix, or complete, with the IUD passing through the uterine wall into the abdominal cavity [2]. A partial perforation of the uterus often heals quickly with no treatment required. By using careful and contemporary insertion techniques, in which the IUD is placed high in the fundus, the risk of uterine perforation approaches zero [10]. In large clinical trials, perforations have been rare with no more than 1.3 per 1000 insertions [2]. However, perforations may go unnoticed at the time of insertion.

- *The Risk of Pelvic Inflammatory Disease (PID) Associated with the IUD*

Early studies on the IUD suggested a causal association between use of the method and an increased risk of PID. This association has subsequently been disproved. Concern about a causal association between IUDs and PID has been a major barrier to the increased use of the method.

PID is a broad term for any infection ascending from the cervix into the uterus, fallopian tubes, and ovaries. PID can be caused by either sexually transmitted infections or the introduction into the uterus of bacteria from the vagina or outside contamination [29]. Among women who have active STIs, it is hypothesized that when an IUD is inserted, sexually transmitted microorganisms that may be present in the endocervical canal could be transported into the uterine cavity [30]. For all women, not just IUD users, the complications of PID can be severe with a single episode permanently damaging the lining of the fallopian tubes. This can partially or totally block one or both tubes and lead to a higher risk of ectopic pregnancy or infertility [2]. PID, and not the IUD, is the cause of infertility. In a case control study, the odds ratio for tubal occlusion associated with previous use of a copper IUD was 1.0 showing that there was no association between IUD use and infertility [31]. Tubal infertility was also not associated with the duration of IUD use.

The risk of upper genital tract infection associated with IUDs is temporarily linked to insertion. Research has shown that the risk of PID after the first month following insertion of an IUD is small [32]. The first large cohort study done in the USA in the 1960's found that the risk of PID was inversely related to the time since IUD insertion [32]. PID infections due to IUD use are concentrated in the 20 days following insertion and are caused by poor infection prevention techniques at insertion [2]. The absolute risk for PID in the 20 days following insertion has been found to be about 1% [10]. Additionally, in 22,908 IUD insertions, investigators found a risk of PID after 20 days of 1.4 cases per 1,000 woman-years of use, compared with 9.7 cases per 1,000 woman-years in the first 20 days following IUD insertion [27]. Therefore, PID is an uncommon event in IUD users both before and after the first 20 days following insertion.

The risk of infection with IUD use is related to a woman's underlying risk of acquiring sexually transmitted infections. In settings where STIs are uncommon, IUD related PID is rare. In a large WHO report, 4031 women in China had IUDs inserted but no participant developed PID during 9197 woman years of observation. However, in Africa, where STIs are more prevalent, there were eight cases of PID that occurred during 1292 woman-years of follow-up [27, 32]. Any woman with a cervical infection, particularly gonorrhoea or chlamydia, is at a greater risk for developing PID than an uninfected woman [33, 34]. If an IUD is inserted in the presence of gonorrhoea or chlamydia, the risk of symptomatic PID ranges from 3.1 to 5.3% [33]. Even HIV infection does not increase the risk of PID related to the IUD while gonorrhoea and chlamydia do [32]. If no sexually transmitted bacteria are present at the time of IUD insertion, none can be pushed up into the uterus and there is no risk of IUD-related PID. Therefore, the IUD is very safe in situations where it is possible to determine if women are free of infection at the time of insertion [29]. The greatest risk factor then for PID in IUD users is multiple sexual partners and the associated higher exposure to STIs [10]. In another study, among a population with an STI prevalence of 10%, the risk of PID attributable to IUD insertion was 0.15%, less than 1 in 600 women [33]. The absolute risk of PID among women with STIs at the time of IUD insertion is low [30].

It has also been established that copper IUD use is not associated with an increased risk of infertility due to PID in nulliparous women at low risk of STIs [27]. To counter the effect of possible STIs and related PID, it has been suggested that using antibiotic prophylaxis before IUD insertion might decrease the subsequent risk of PID but meta-analyses have concluded that such prophylactic antibiotics confer little benefit [27]. If a woman does develop an STI or PID while using an IUD, the WHO has determined that it is possible for the woman to continue using the IUD while the infection is treated with appropriate antibiotics since removal of the IUD does not affect the clinical course of PID [35, 36].

The risk of PID among IUD users is low and any increased risk among IUD users relates to a higher background prevalence of STIs. Thus, health care providers need to have the ability to identify pre-existing cervical infections, treat them, and insure aseptic conditions for insertion. When these criteria are met, IUD users are not at a greater risk for PID related infertility than non-users [29, 30].

- *The Risk of Ectopic Pregnancies*

A recent meta-analysis of 16 case-control studies concluded that IUDs do not increase the risk of ectopic pregnancy compared to non-IUD users [27]. The copper IUD has been shown to reduce the risk of ectopic pregnancy significantly when compared with the risk in women using no method [10, 25]. Although the IUD reduces a woman's baseline risk of tubal pregnancy, it does not protect against ectopic pregnancy as well as it protects against intrauterine pregnancy [10]. If pregnancy does occur while an IUD is in place, it is more likely to be ectopic and such an implantation must be ruled out [27, 37]. Studies have suggested that in the rare event of a woman becoming pregnant while using the IUD, the risk of ectopic pregnancy ranges from 5 to 20% [10, 16]. US cohort data with both the TCu 380A and the levonorgestrel intrauterine system have shown an ectopic pregnancy rate of 0 to 0.5 per 1000 woman years, compared with an ectopic pregnancy rate of 3.25 to 5.25 per 1000 woman-years among women who do not use contraception [27]. Due to this low risk, concerns about ectopic pregnancy should not be a reason for discouraging IUD use.

- *Mortality Rate*

With respect to mortality, use of a contraceptive method is generally far safer than pregnancy. Although it ranges, one in 8,700 women die due to pregnancy yearly while it is estimated that there are about one to two deaths per 100,000 IUD users per year [38]. When they occur, these deaths are usually as a result of infection, ectopic pregnancy, or second trimester septic abortions [2, 4]. In every 5-year age group, from 15 to 44, the IUD has the lowest estimated mortality rates of any contraceptive except for vasectomy [2].

Advantages and Disadvantages of the IUD

The IUD has many advantages over other contraceptive methods. It is safe, highly effective, long-acting, convenient, and private. The method is especially easy to use because no constant re-supply is necessary for compliance. For that reason, few women using the IUD present with unintended pregnancy [39]. It can be inserted at any time in a woman's menstrual cycle, immediately after delivery or following an abortion. It does not interfere with sexual intercourse or any type of medication and women report that the IUD has a positive impact on their sex life [1, 7, 22]. It has a long life span and requires fewer visits to health providers than other methods, which means less expenditure of money, time, and effort for users and the health service.

Once the IUD is inserted, it is immediately effective and no additional contraceptive protection is needed [1]. In addition, it requires little maintenance or action on the part of the user. The IUD has fewer adherence issues than other methods since women need not adhere to a daily regimen of pills or intermittent injections. Once the IUD is in place, the user does not have to do anything to maintain contraceptive protection for 1 to 10 years unless the device is expelled, which is a rare occurrence.

The IUD is an ideal option for certain groups of women for whom other long-term methods may not be fully appropriate or desirable. The IUD is a method that can be used by breastfeeding women since the copper IUD has no known effects on breastfeeding or the volume or composition of breast milk as hormonal contraceptives do. Once an IUD is removed, full fertility returns quickly and so it is a good method for those who want to space births. Women who use IUDs for long periods of time conceive just as rapidly as short-term users of the method [2].

As a reversible contraceptive method, the IUD is an appropriate option for women who do not want to have more children but who do not want to opt for sterilization. Some women who undergo sterilization later express regret. One study found that in 14 years post-sterilization, the characteristics most associated with regret were being 30 years of age or younger (20.3%), African American (21.7%), or unmarried (20.4%) [40]. The IUD would be a much better idea than sterilization for certain women who still might want to have children in the future.

The levonorgestrel device has particular advantages for women with heavy menstrual flow because it tends to reduce the amount and duration of bleeding. Hormone releasing IUDs can be used as part of hormone replacement therapy and can be used to treat menorrhagia, anaemia, and can even be used as an alternative to hysterectomy for women with bleeding problems [3]. Progestin-releasing devices also reduce the amount of bleeding from uterine fibroids but do not reduce the size of fibroids.

The IUD can be used as a form of emergency contraception and can be retained for continued long-term contraception. Insertion of an IUD as a form of emergency contraception within 5 days of intercourse has been shown to be safe and effective at preventing pregnancy 98 to 99% of the time [1, 37]. A recent study of 1013 women who underwent insertion of a copper IUD for postcoital contraception, including 170 nulliparous women, found a pregnancy rate of 0.2% [27].

The IUD also has many non-contraceptive health benefits. For example, six out of seven studies suggest that the copper IUD has a protective effect against endometrial cancer [2, 3, 34]. Although the evidence was not strong, two studies have also suggested modest protection against cervical cancer [2, 32].

There are also disadvantages to IUD use. IUDs offer no protection from STIs and so women must always be counselled about condoms and dual protection if they use this method. IUDs can occasionally be expelled without the knowledge of the user. With copper IUDs, the number of bleeding days is slightly higher than normal and there may be somewhat increased menstrual cramping, especially during the first 3 to 6 months of use [1]. Also, since copper IUDs can increase menstrual blood loss and since excessive menstrual blood loss is the most common cause of anaemia in fertile women, this may be a concern for women in developing countries where poor nutrition or diseases may contribute to iron-deficiency [9]. For users of the levonorgestrel IUD, amenorrhoea may also be a concern. IUD users may be more likely to develop non-specific vaginitis [2]. Lastly, the device must be inserted and removed by a trained provider and this has financial and resource implications for its users. Also, since women who have an IUD inserted do not have to come in regularly for check-ups, it is possible that some clients may lose contact with the health care system.

- *Long Term Cost effectiveness of the IUD*

Contraceptives save health care resources by preventing the substantial costs related to unintended pregnancies. Over time, the IUD is a cost effective option for both family planning programmes and users. It is a very economical option for the health care system since government procurement and service delivery costs of the IUD are low compared to other contraceptive options and it is inexpensive to produce [1]. The average annual cost of the IUD decreases over time when compared to other methods. After about 3 years, the IUD works out to be cheaper than 39 cycles of oral contraceptives [16]. The levonorgestrel intrauterine system was shown to be the most cost-effective reversible method of contraception after 5 years of continuous use while the copper IUD has been shown to be the most cost-effective method after just two years of use [27]. Another study showed that after accounting for all costs, the least expensive contraceptive methods were the levonorgestrel IUD and then the CopperT 380A IUD at a five-year cost of $1646 and $1678 respectively [13]. Another study showed that over 5 years, the Copper-T IUD saved $14,122 in medical costs when compared to using no method [41]. In just two years of use, the Copper-T IUD is less costly than the injectable [41]. Although IUDs can have high costs for the actual device, they have lower total method costs and better effectiveness when compared with hormonal and barrier contraceptive methods [13]. Overall, when all program costs are taken into account (staff time, follow-up visits) the IUD is the most cost effective method a health care system can offer [42]. However, although the long-term costs of the IUD are low, the up front costs of the device and its insertion may be prohibitive for clients living in countries where healthcare services are not free. In the South African public sector however, clients are not charged for

contraceptives and so this barrier would not exist. Therefore, in South Africa, making the IUD available would increase contraceptive choice without any financial burden to the client.

IUD Candidate Selection: Indications and Contraindications

Women of any reproductive age or parity can use an IUD as long as they have no health conditions that preclude IUD use [2, 10]. Women who have an active STI, unexplained abnormal vaginal bleeding that may suggest a serious medical problem, a severely distorted uterine cavity that precludes proper IUD insertion, cervical, endometrial, or ovarian cancer that is awaiting treatment, are currently pregnant, or have pelvic tuberculosis should not use IUDs [43].

- *Parity*

Both parous and nulliparous women can use the IUD method. The ideal candidate for IUD insertion is a parous woman with no history of PID who desires long-term reversible contraception and who is in a stable, mutually monogamous relationship (therefore putting her at low risk for STIs). Women who are nulliparous can also safely use the IUD. However, IUD insertion through a cervix that has not been previously dilated may be more challenging and expulsion and failure rates are slightly higher for nulliparous women because the uterine cavity is smaller in women who have not had a vaginal delivery [24].

- *STI Risk*

Having an active STI, or having had an STI within the last three months, is a contraindication for IUD insertion. Women who have had PID more than three months ago, with or without a subsequent pregnancy, may use IUDs. IUDs should not be used in women who have an active case of PID or in women who have had PID within the last three months [27, 43].

- *HIV Infection*

HIV-positive women have a critical need for safe and effective contraception to avoid unwanted pregnancy and vertical transmission of the virus. Recent research has suggested that the IUD is a safe and acceptable contraceptive method for appropriately selected HIV-infected women with continuing access to medical services [34]. The IUD is not associated with any increase in the risk of HIV infection [36, 44]. Although hormonal contraceptives have been associated with an increased prevalence of cervical shedding of HIV-1 DNA among infected women, no evidence exists that suggests that IUD use increases an HIV-positive woman's risk of transmitting the virus to a sexual partner [35, 36]. In one study, the insertion of an IUD did not significantly alter the prevalence of cervical shedding of HIV-1 infected cells [45]. A recent study also found no relationship between HIV-infection status and risk of overall IUD complications or infection-related complications [46]. Yet another study found that HIV-infected and non-infected women were at similar risk for overall IUD complications [47]. Although cervical infections may be more common among HIV-infected women as compared to non-infected individuals, it should be cervical infection, rather than HIV status, that precludes use of the IUD method. In the face of this new data, the WHO medical eligibility criteria for the IUD states that women at high risk of HIV and women infected with HIV can safely initiate and continue use of the IUD. They further recommend that should a woman who is HIV-

positive develop AIDS, an already inserted IUD need not be removed. However, they suggest that women who did not have an IUD prior to developing AIDS should not initiate use. Women who are taking ARV therapy and are clinically stable can either initiate IUD use or continue using the method [35].

Use of the IUD may be acceptable in addition to condoms as an appropriate method of contraception for HIV infected women from the potential infectivity to the male partner [45]. Although the IUD may be an appropriate contraceptive option for HIV-infected women, it does not protect women from contracting or passing along STIs and so it is necessary to promote this method within the context of dual protection where the importance of condoms will continue to be stressed.

Insertion and Removal Issues

- *Insertion*

Inserting an IUD is a simple outpatient procedure that can be preformed by appropriately trained primary health care providers. The IUD can be inserted any time in a woman's menstrual cycle when it is reasonably certain that she is not pregnant [26]. However, expulsion rates for the first three post-insertion cycles were reduced by more than 30% when insertion was delayed until the end of menses [10]. The optimal time for insertion is at the time of ovulation when the cervical canal is maximally dilated. Proper IUD insertion reduces the risks of pregnancy and of all major side effects such as expulsion, bleeding, pain, perforation, and infection. Access to a sterile environment and proper equipment are necessary.

Although IUDs require only one office visit for insertion, a follow-up visit should be planned for 3 to 6 weeks after insertion (after the next menses) to address any adverse events such as expulsion or insertion related infection. Further routine visits are not required and are not effective at reducing the risk of method related side effects [48]. Women should be encouraged however to return any time they have problems, questions, concerns, cannot feel their strings, or wish to have the device removed.

Complications at the time of IUD insertion are very rare. However, difficulties that may occur at the time of insertion include vasovagal reaction, the need for cervical dilation, severe pain, inability to insert the IUD, and uterine perforation [27]. Uterine perforation, the complication of greatest concern, is estimated to occur in approximately 1 in 1000 insertions although this risk appears to decrease with the increasing experience of the practitioner [10, 24, 27].

- *A special case: Postpartum / Post-abortion insertion*

Since the 1960's, it has become popular to insert IUDs in the postpartum period. Most data that is currently available suggests that insertion immediately postpartum has better outcomes than delayed insertions. One study found that the six-month cumulative expulsion rates were lower in immediate insertions (those within 10 minutes of delivery of the placenta) as opposed to delayed insertions (within 72 hours of placental expulsion) [49]. In one study by Çelen et al., it was found that the Copper T380A IUD, when inserted within 10 minutes of placental expulsion in both vaginal and caesarean deliveries, had a one year cumulative expulsion rate of 12.3% [50]. This was regarded as a standard expulsion rate for immediate post-placental insertion. Immediate postpartum insertions are associated with a low risk of uterine perforation and expulsion.

The major disadvantage of postpartum insertion is the chance of a higher expulsion rate following delivery as opposed to any other time for insertion [50]. The IUD is more easily expelled if inserted soon after childbirth because the uterus is contracting and the cervix is dilated [2]. Expulsion rates are lowest when the IUD is inserted within 10 minutes of placental delivery, when a copper IUD is used rather than other models, and when the provider is skilled and experienced and places the IUD high in the fundus [2]. The difference in expulsion levels may be due to the fact that immediate placement of the IUD high in the fundus after placental expulsion is easier than at a later time [49]. Insertions can also take place after a caesarean delivery and this procedure has also been found to be safe and expulsion rates are low [2].

There are many advantages to postpartum IUD insertion. Women are known not to be pregnant at the time of insertion. The cervix is already dilated, therefore making insertion of the device easier and potentially less painful. Also, women receive immediate protection against pregnancy that does not interfere with breastfeeding. This is a good option for women with limited access to medical care where deliveries provide an important chance to address the need for contraception. Also, providing family planning at the time of childbirth as opposed to at a subsequent clinic visits, makes postpartum IUD insertion a cost saving opportunity for both clients and the health care system.

IUDs can also be safely inserted in women who have had a spontaneous or induced abortion except when they have pelvic infections or septic abortions [2].

- *Removal*

IUD removal is normally a routine and uncomplicated process that can be done by an appropriately trained health care provider in an outpatient setting at any point in the menstrual cycle. To remove an IUD, the clinician grasps the strings close to the cervical os with forceps and pulls slowly and gently. An IUD should be removed when it expires, when a woman no longer qualifies for IUD use, or when the woman requests removal. Reasons for removal are often side effects related to IUD use and the desire to become pregnant [17].

An international multicentre study found that less than 2% of attempted IUD removals prove to be difficult [2]. One common reason for difficult removal of an IUD can be if the strings are "missing". In most cases, the strings have slipped into the cervical canal and can be drawn out using forceps. A less common reason for a difficult removal is when an IUD has partially or completely perforated the uterus or become embedded in the uterine wall [2].

Although a great deal of information does not exist, research suggests that women who do not return to have their IUDs removed do not become pregnant. There is no evidence that the method loses its effectiveness over 10 years of use [14].

Common Myths and Misperceptions

Around the world, many women and health care providers hold incorrect notions or negative impressions of the IUD that are based on fear or motivated by rumours and myths. One common misperception is that the IUD can travel from the woman's uterus to distant parts of her body such as the heart or brain [2, 34]. In general, the IUD stays in the uterus and only if there is a perforation can the IUD enter the

abdominal cavity. However, the IUD will never go any further or travel to remote parts of the body.

A number of common myths surround the IUD as it relates to sex, pregnancy, and fertility. Some believe that the IUD string can become hooked onto or wrapped around a man's penis during intercourse or that having sex can dislodge the IUD [2, 18, 51]. Others believe that if a woman gets pregnant, the baby will be born with the IUD in its head or that the strings of the IUD will strangle the fetus [18, 52]. It is also a common belief that the IUD will delay or impair fertility or that it may cause infections [52]. Although misguided concerns that the IUD works as an abortifacient have been disproved and shown to be erroneous, such ideas have seriously limited IUD use by many women and have prevented many providers from offering IUDs [4, 18, 25]. In the past, IUDs have also been linked to any number of negative health outcomes. These associations have been disproved. A common belief is that the IUD causes cancer although there is no evidence to suggest this [18]. It is paradoxical that most women who do not use the IUD have negative perceptions of it while women who are users tend to view the method positively [18]. Despite the many myths and misperceptions, the IUD has been proven to be a safe contraceptive method.

What is the current use of the IUD around the world?

Worldwide, over 160 million women in 100 countries use the IUD making it the most frequently used method of reversible contraception [10, 16, 34, 53]. However, the method's prevalence varies greatly around the globe with some countries reporting high usage while others have almost none. The highest IUD prevalence is in China where 40% of women using contraception use the IUD [27]. In China, many women accept and like the IUD for its long life span, reversibility, high effectiveness, and because insertion is free. However, this high prevalence of IUD usage in China could be due to a limited range contraceptive method choices and the governments' "one child" policy. In Vietnam, the IUD accounts for almost two-thirds of all contraceptive use [2]. It is also a widely used method in Indonesia and Taiwan.

IUD use is also common in parts of Europe and the Middle East. In Scandinavia, the IUD accounts for 18.2% of contraceptive usage. In Norway, 40% of women of reproductive age use the IUD [2, 25, 27]. In the United Kingdom, the prevalence of IUD use is 5%, in Switzerland and Germany it is 6%, and in France it is 21% [28, 54]. In Western Europe, rates range from 7% to 19% while in Eastern Europe, rates are as high as 23% [17, 54]. The prevalence of IUD use is 11.6% in the Middle East and North Africa. In Egypt, Jordan, and Tunisia, 15%, 17%, and 18% of women prefer the IUD respectively [17]. It is the most widely used modern contraceptive in Turkey [17].

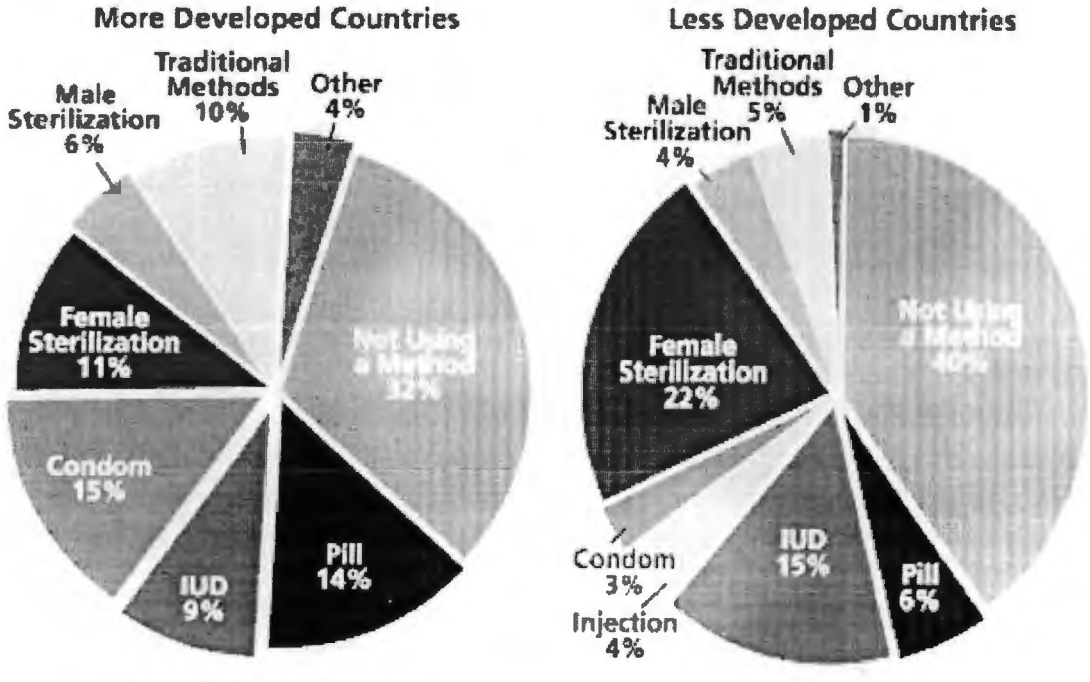
In Latin America and the Caribbean, the IUD is used by 8% of contraceptive users [54]. In Mexico, where the contraceptive prevalence rate is 70%, IUDs account for about 20% of the contraceptive method mix over the last 15 years [34]. Of the women using IUDs in Mexico, 55% adopted the method postpartum and the continuation rate at 1 year was 75% [34]. High acceptance of the IUD in Mexico has also been part of a concerted effort to reduce medical barriers to service delivery in family planning.

In the United States and Canada, the IUD is used by a very small proportion of women [16]. Although approximately 11% of women using contraception in the United States were IUD users at the height of its popularity in the 1970's, now, less that 1% of married women currently using contraceptives use the IUD [10, 27]. Much

of this is due to negative publicity relating to one particular IUD, the Dalkon Shield, which raised many questions about the safety of IUDs in the 1970's. Despite the fact that modern IUDs are shown to be safe and effective in studies, US physicians tend not to recommend the method because of remaining liability concerns, lack of knowledge about the device, and lack of IUD insertion skills.

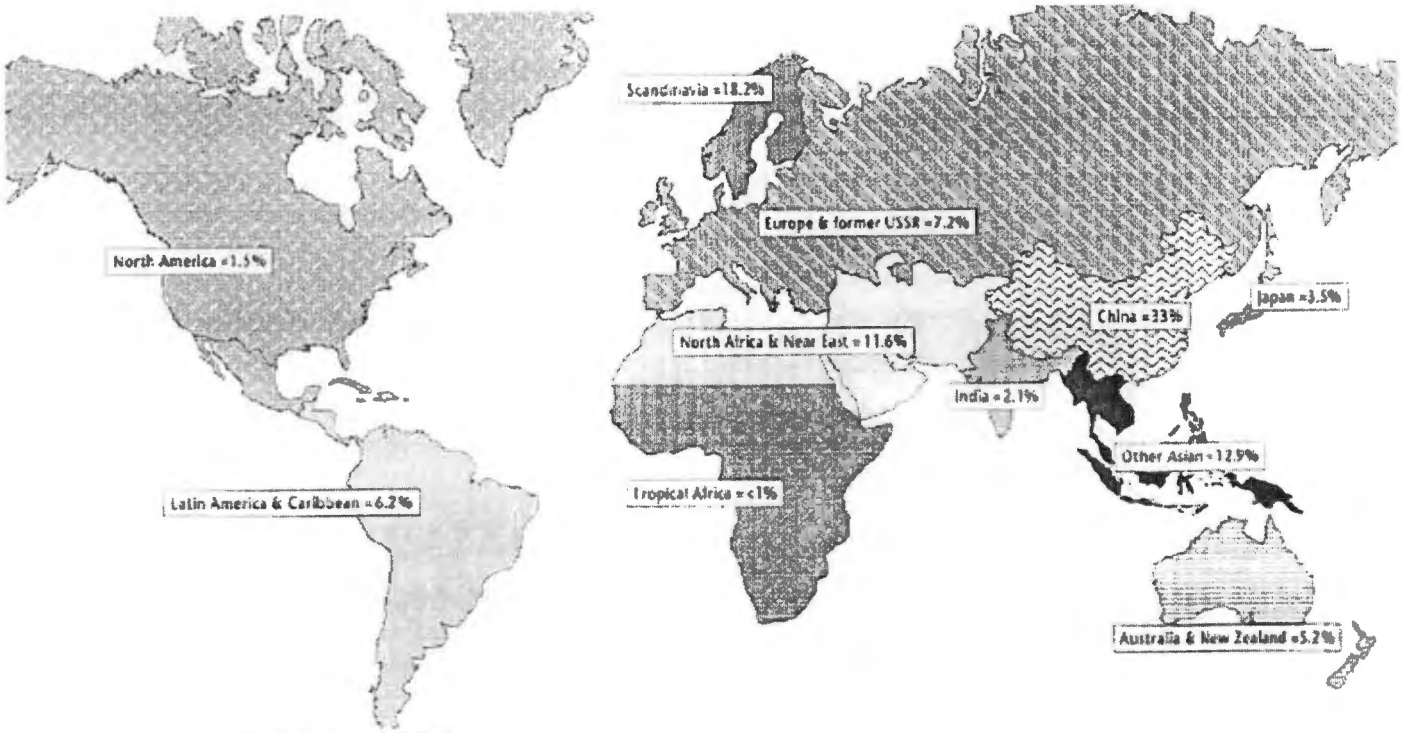
In sub-Saharan Africa, where access to all forms of contraception is generally low and there are a limited number of trained providers, levels of IUD use are generally the lowest in the world, with only about 1% of married women using the method [2, 54]. In Kenya, where government facilities provide reproductive health services to over half of the population, staff lack the training that is necessary to insert an IUD and few functional referral services are in place. The wide variation of IUD use reflects different patterns of availability, health care provider and client perceptions, and cultural values.

Figure 4: Contraceptive use among married women, late 1990s



Source: Population Reference Bureau 2002

Figure 5: Estimated percentage of all married women of reproductive age using the IUD for contraception (1995)



Source: Treiman et al. 1995

Barriers to Use

A number of barriers may limit the expanded use of the IUD; some of these relate to potential users and some to providers. Misinformation and myths can be one of the biggest barriers to IUD promotion. Many unfavourable attitudes towards the IUD are due to a lack of accurate knowledge among providers and potential users. To help make the IUD more acceptable, providers will need training and clarification on misperceptions. Only then will providers be able to counsel women appropriately to help combat and dispel rumours and myths about the IUD.

A study in Kenya found that barriers to IUD use included poor product image, difficulty in shifting client preferences for particular methods, poor quality of care, provider bias or preference for particular methods, and most health providers saw the IUD as time-consuming to provide and requiring a high level of skill, concentration, and cleanliness [51]. There is also fear of HIV acquisition and transmission. Overall, not enough attention is given to the IUD method because most healthcare providers do not take the time to fully explain contraceptive options to patients and instead, promote the method that is the quickest and easiest to dispense. Since the IUD method is sensitive to variations in quality of care, when providers are misinformed, poorly motivated, and overworked, the IUD method suffers. A US study found that one of the top reasons that providers did not recommend the IUD was the belief that the IUD was not medically safe and they restricted IUD candidates very tightly on the basis of monogamy and history of PID [55].

If IUD use is to increase, program planners will need to understand the factors influencing client's motivations to use the method as well provider's motivations to encourage the method [18]. A study in Nicaragua found that provider education programs are not enough to generate interest amongst clients [56]. Since health care providers are inserting few IUDs, educational programs need to highlight the safety of

the IUD and how it is possible to expand IUD use, perhaps through less restrictive and conservative criteria for selecting IUD candidates. Mass communication efforts may be needed to raise awareness among providers, clients, and the general public [57].

- *Health Systems Barriers*

When considering a more prominent role for the IUD in the contraceptive method mix, it is necessary to address the obstacles within the health system which may preclude its expanded use. Especially in developing countries, many providers lack sufficient training, equipment, and supplies to insert IUDs.

One key barrier is that insertion and removal of the IUD requires that providers have a greater level of training and skill as compared to providing other contraceptive methods. Relatively few health care providers have learned proper IUD insertion and removal techniques and there is currently a deficit of health care providers who are trained to offer this primary care service [16]. In a study that looked at provider and client attitudes towards the IUD, many providers reported that although they have preformed IUD insertions, they did not feel that they had enough practical experience [18]. A study in the United States among 811 practicing obstetricians-gynaecologists found that although 80% of respondents reported inserting IUDs in the past year, 79% had only inserted 10 or less [55]. The WHO recommends that health care providers need to perform at least 50 to 60 pelvic examinations and 10 to 15 IUD insertions under supervision before they have the skill and self-confidence to do the procedure alone [2]. Therefore, practical clinical training for healthcare providers is necessary and providers need to insert and remove IUDs regularly to maintain this skill. The healthcare providers' training and experience, particularly with insertion technique, are especially important and may make more of a difference to IUD performance than the design of the IUD [2].

The health systems ability to provide the IUD is also affected by the amount of counselling that women require before the device can be inserted. The IUD is meant to be a long term method that stays in place and provides pregnancy protection for a number of years. Women need to be counselled before the IUD can be inserted. First, in terms of patient load, providers and facilities may not feel that they can devote the necessary time to counselling potential users about the method. Ideally, a full reproductive history should be taken, women should be asked about their sexual practices, and the IUD method, including the insertion process, how it works, and possible side effects, should be discussed. When women are well informed about the method, they may be less likely to return for early removal.

Another issue complicating IUD provision within health services is that it requires more stringent screening before insertion as compared to other methods. If a woman comes to a clinic for oral contraceptive pills or the injectable, the provider can quickly assess if the woman is able to use that method and can provide it without trouble. Providing the IUD is more involved since a gynaecologic exam needs to be preformed prior to insertion. The provider needs to be sure that the woman is not pregnant and also needs to rule out the possibility of any STI infections that might cause a problem if the IUD was to be inserted. This whole IUD screening process takes more time than that of other methods and requires a greater degree of skill on the part of the provider.

If insertion or removal of the IUD is to take place, the facility needs to have the correct equipment and supplies for such procedures and needs to be able to ensure

that the insertion or removal process will take place within a sterile environment. Not all health facilities have the correct equipment and may struggle, especially in rural areas, to create sterile conditions for insertion. Therefore, if health services were to offer the IUD, many facilities would need to be upgraded so that they could offer the IUD in a clean and responsible way. Also, facilities would need to have the IUD in stock and this would mean that health systems need to spend money procuring the IUD. The IUD has a higher product cost than other contraceptive methods that are available but in the long term, it turns out to be more cost effective than shorter term family planning methods since there are no re-supply issues and this translates into fewer health centre visits [13, 27, 42].

The Prevalence of IUD Usage in South Africa

Compared to the rest of sub-Saharan Africa where contraceptive prevalence is low with less than 20% of women of childbearing age practicing family planning, South Africa has a high level of availability and use of contraceptive methods [19]. The state is the main provider of contraceptive services and contraceptives are provided free of charge in the public sector. At the national level, three-quarters of all women of reproductive age in South Africa have used contraception [58]. The Western Cape Province records the highest current use of contraceptive methods with a prevalence of 74% while only 60% prevalence was recorded for the Eastern Cape [58]. However, the range of methods offered by public sector health services remains limited.

Contraceptive knowledge and use in South Africa is generally high but only two methods, the injectable and the pill, tend to be promoted at public clinics, with far more African women using injectables. Seventy-five percent of women report having used a contraceptive method and the injectable was the most commonly used method [58].

Current usage of the IUD in South Africa is low. Although the IUD is a valuable and important component of a sustainable contraceptive method mix, IUDs are under-utilised. This is mostly because there is a lack of trained staff to insert the IUD and a lack of suitable facilities. In the public sector health services, where 80% of contraception in South Africa is provided, IUDs are usually only offered in urban centres as a referral method (i.e., they are not available at all clinics and require a referral to a clinic that can provide them). Only the Copper T IUD is available at public sector clinics while other IUDs, including the Mirena, are available in the private sector. The South African Demographic and Health Survey (SADHS) found that over 75% of married and sexually active women in South Africa reported knowing about the IUD while only 8.5% reported ever using it. Older age groups reported the highest use of the method with 15.2% among 35-39 year olds, 20.6% among 40-44 year olds, and 17.4% among 45-49 year olds [58]. Only 1.2% said they were currently using the method and of that number, the private sector was the supply source for almost half (46%) of IUD users. Also, only 4% of women who had ever used the IUD reported using the IUD as their first contraceptive method [58].

The Case for Expanding Use of the IUD in South Africa

The IUD has the potential to fill an important niche in South Africa because it may be a method that suits the needs of women better than what is currently available. Almost 44% of currently married women in South Africa do not want more children. More than half of the currently married women would like to stop childbearing altogether or delay the next birth for two years or more [58]. The SADHS also reported that

sterilization is the most popular method of contraception for women over the age of 35 [58]. Some of these women may not have wanted to be sterilised but other forms of highly effective long-term contraception were not available. There is specifically a great deal of unmet family planning need among women under 25 and also in the 45-49 age group. These are women who want family planning for spacing or stopping and are in need of more options. In South Africa, women also reported that 53-75% of their pregnancies were mistimed, unplanned, or unwanted [58]. Use of the IUD could help to decrease this unintended pregnancy rate. The IUD can be appropriate for young women who are not ready to have children yet and is also a good option for women who are HIV-positive since it provides high quality contraceptive coverage with only a 1% pregnancy rate per year, it does not have any interactions with medications, and it has been shown that IUD use does not increase an HIV-positive woman's risk of transmitting the virus to a sexual partner [2, 35, 36].

In South Africa, the most commonly used contraceptive option is the injectable. Although this method is quick and easy to supply to clients, many women do not return for follow-up injections on time. As a result, there are times at which women have no protection against pregnancies. With the IUD, unless it has been expelled, there are no unintentional discontinuation issues and women do not need to adhere to any daily regimen in order to protect themselves from unintended pregnancies.

The IUD also has few side effects as compared to common hormonal methods of contraception, such as the injectable. The injectable often leads to less frequent menstruation, a side effect of the method which not all women are fond of. Perceptions of menstruation vary according to culture and religion and women's attitudes towards changes in bleeding patterns due to contraceptives vary widely. A study which examined patient choices and perceptions surrounding menstruation, found that among all the women surveyed, only black women in Africa (South Africa and Nigeria) liked having periods [59]. This is an important issue to consider when recommending the IUD in the South African setting since the copper IUD will allow women to continue to have regular periods while hormone releasing IUDs often induce oligomenorrhea.

Another benefit is that since the IUD can be used safely and effectively for a long time, clients need not return for regular clinic visits for the device to be effective. Clients do not need to return to the clinic unless there is a problem or they want their IUD removed. This puts less stress and strain on the healthcare system and also makes the IUD a less expensive option for clients than pills or the injectable since, in the long run, less time and money will be spent on returning to doctors for refills or injections. Also, for women who live far away from health services, the IUD can be a good contraceptive choice since the need for frequent clinic visits for family planning can be a barrier to effective use. The IUD itself is also an incredibly cost effective option, as was discussed earlier. When this quality method is delivered with good services, it is an important option for many women.

Although the IUD does not offer protection against STIs, this is no different from other commonly used contraceptive methods such as the injectable, oral contraceptives, or sterilization. It will always be necessary, when providing the IUD in South Africa, to also counsel for dual protection and current National Contraceptive Service Delivery Guidelines stipulate this [7]. Since the STI rate in parts of South Africa are high, it will also be necessary to carefully screen patients for STIs before IUD insertion so that PID can be avoided. The integration of family planning and STI services will help facilitate this process.

Providers will need to be trained to insert the IUD but also to encourage clients to consider it as an option [18]. Providers will need to be regularly updated and receive accurate IUD information. They will also need to do better counselling and managing of side effects while addressing myths and fears. To promote the IUD among potential users, it will be necessary to identify key positive messages about the method and to disseminate information (through pamphlets, billboards, newspapers, and radio) about where IUDs are available for potential users. When women come for IUDs, they will need to be correctly informed about the method, the possible side effects, including menstrual changes, and the need for dual method use. Services will also need to be improved by making IUDs available at more clinics (including mobile clinics) and making referrals to skilled providers easier. Lastly, if clients request the removal of an IUD, whether for personal or medical reasons, providers must not delay or refuse removal [7].

STUDY AIMS

Although the IUD may be a particularly good method for South African women, current use of the IUD in South Africa is low. In order to increase IUD usage, it is necessary to understand the current knowledge, attitudes, and practices of potential users and healthcare providers so that it will be possible to increase both the availability and use of the IUD in South Africa.

Therefore, the primary aim of this study was to assess the knowledge, attitudes, and practices of women attending sexual health, family planning, and STI care services as well as health care providers working at these facilities.

The specific objectives of this study were:

1. To describe the IUD related knowledge of female clients attending public sector healthcare services.

2. To describe the IUD related attitudes of female clients attending public sector healthcare services.

3. To describe the IUD related practices of female clients attending public sector healthcare services

4. To identify factors associated with IUD knowledge, use, and positive attitudes towards future IUD use.

5. To describe the knowledge, attitudes, and practices of health care providers with regard to IUD use, feasibility of introduction, and service delivery.

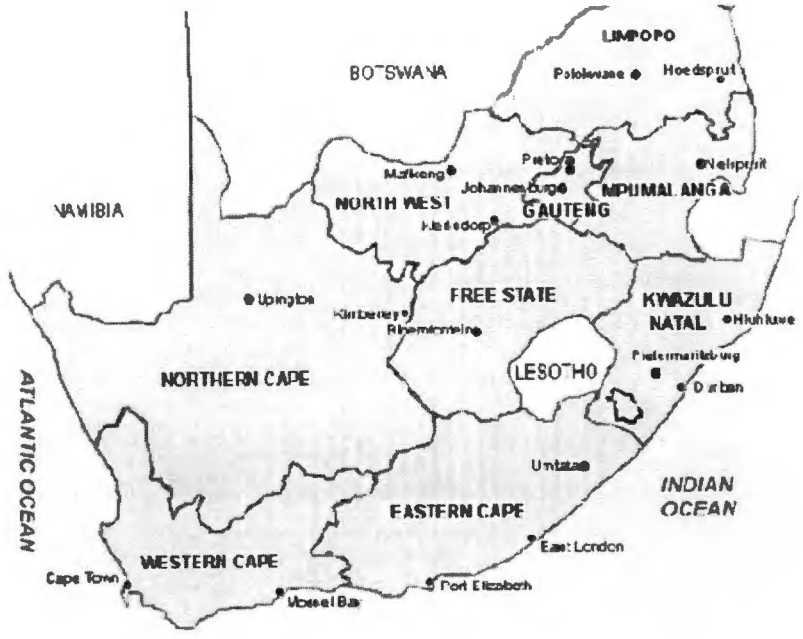
6. To describe the basic socio-demographic, reproductive, contraceptive, sexual and partnership characteristics of those surveyed.

SETTING

This research study took place in two separate areas in South Africa: an urban setting in Cape Town, Western Cape, and a rural setting near Umtata (Mthatha) in the former Transkei region of the Eastern Cape (see Figure 6 below).

South Africa is divided into 9 provinces, each with its own provincial Department of Health. The Western Cape Province has a fairly well-developed health infrastructure compared to much of the rest of sub-Saharan Africa, especially in the coloured and white communities of the Cape Town area. The Eastern Cape, a neighbouring province, is widely regarded as South Africa's poorest province and most of the Eastern Cape's population lives in scattered rural communities. The Eastern Cape has the least developed health infrastructure in South Africa, with very poor reproductive health indicators [58]. In order to gain a more complete understanding of the possibility for a reintroduction of the IUD into the contraceptive method mix in South Africa, sites in both the Western Cape and Eastern Cape Provinces were selected. This approach allowed for an exploration of the key research questions in two very different health care systems, each facing unique challenges.

Figure 6: Map of South Africa showing all provinces including the Western and Eastern Cape.



The majority of family planning clients in South Africa utilise public sector facilities and therefore study sites at public clinics and health centres in the Western Cape and Eastern Cape were selected. In each region, two primary level public sector clinics were selected for client interviews. Six clinics were selected for provider interviews. The clinics provided a range of primary care services, including STI diagnosis and treatment, HIV care, and family planning. For this research, participants were recruited from the family planning and STI care services.

In the Western Cape (the greater Cape Town area), the study clinics were the Langa, Weltevreden, Phumlani, Vuyani, Guguletu, and Matthew Goniwe Clinics (operated by the local health authority). Client interviews were conducted at Langa and Weltevreden.

In the Eastern Cape (the greater Umtata area), the study clinics were the Gateway, Mhlakulo, Ngangelizwe, Mbekweni, Sidwadwni, and Gungululu Clinics (operated by the local health authority). Client interviews were conducted at Mhlakulo and Mbekweni.

These facilities were selected in consultation with provincial and local health care officials based on the following criteria: (a) the degree to which they were typical of primary care clinics in the area, (b) the preference of provincial officials to avoid over-researched facilities, and (c) adequate client volumes to ensure efficient data collection.

STUDY DESIGN AND METHODOLOGY

This was a cross-sectional descriptive study with an analytic component. This research was a sub-study couched within a larger study on contraception and reproductive decision-making.

Study population

Clients: The study population was women between the ages of 15-49 years attending public sector clinics and primary level family planning and STI care services in Cape Town, Western Cape and in and around Umtata (Mthatha) in the Eastern Cape.

Providers: Those providers who participated in the study were all providing family planning services at one of the 12 participating public clinics in either the Eastern or Western Cape.

Sampling strategy

Clients: Structured quantitative interviews were conducted with women attending family planning and STI care services at four of the participating clinics. In total we had 205 participants (105 participants in the Western Cape and 100 participants in the Eastern Cape). Participants were selected consecutively as they exited the clinic and a log was used to record the proportion of participants who did not participate. Participants recruited from HIV care services included those receiving antiretroviral therapy as well as individuals not receiving treatment.

All men, and women who were younger than 14 years and older than 50 years, were excluded from the study.

Providers: Semi-structured interviews were conducted with health care providers working at six clinics in each province. Within each facility, a minimum of two health care providers who provide any family planning services were selected to participate. At some facilities, more than three providers were eligible for this and all were selected to participate. In this survey, "providers" include doctors as well as both senior and junior nursing grades and enrolled nursing assistants. Across all the facilities, a total of 32 health care providers, 15 in the Western Cape and 17 in the Eastern Cape, took part in the study.

Data Collection

Client interviews were structured and lasted approximately 30 minutes. The interviews were conducted by one of two trained female interviewers. All interviews took place in the participant's preferred language in private rooms at the facility. Participants were reimbursed for the cost of transport to attend the interview (R15.00 per participant).

The instruments used for the client interviews with underwent pilot-testing prior to finalisation (see Appendix 1 for final Client Questionnaire).

Health care provider interviews lasted approximately 45 minutes and were administered in a private room at each facility by the study coordinator in the provider's preferred language. An interview guide was used to ensure that key research questions were investigated with appropriate probing (see Appendix 2 for final Provider Questionnaire).

Summary of data collection methods

Quantitative interviews with female clients from FP/STI services	
Cape Town	
Langa Clinic	52 interviews
Weltevreden Clinic	53 interviews
Umtata	
Mhlakulo Clinic	50 interviews
Mbekweni Clinic	50 interviews
Total client interviews	**205**
Semi-structured interviews with health care providers	
Cape Town	
Langa Clinic	3 interviews
Weltevreden Clinic	3 interviews
Phumlani Clinic	2 interviews
Vuyani Clinic	3 interviews
Guguletu Clinic	2 interviews
Matthew Goniwe Clinic	2 interviews
Umtata	
Gateway Clinic	3 interviews
Mhlakulo Clinic	3 interviews
Ngangelizwe Clinic	3 interviews
Mbekweni Clinic	3 interviews
Sidwadwni Clinic	2 interviews
Gungululu Clinic	3 interviews
Total provider interviews	**32**

DATA MANAGEMENT AND ANALYSIS

All the data was entered into a custom-designed Microsoft Access database by a data entry clerk.

All quantitative data analysis was conducted using the statistical programme STATA9 (Stata Corporation, College Station, TX, USA). Descriptive statistics were employed for basic characterization of variables and to assist in data cleaning. Data analysis began with univariate inspection of the data.

Our variables of interest were as follows: having heard of the IUD, having ever used the IUD, having positive attitudes about the IUD, and considering use of the IUD in the future. Bivariate associations between participant characteristics and these variables were described using student's T-tests (for means), chi-square tests (for proportions), and Wilcoxon rank-sum tests (for medians), as appropriate. Variables that demonstrated significant bivariate associations (defined as $p<0.05$) were entered into logistic regression models to assess independent effects. One model was developed for having heard of the IUD, one for having positive attitudes about the IUD, and one for considering use of the IUD in the future. Variables were retained in the final logistic regression models if they demonstrated significant independent associations with the outcomes of interest, or if their removal altered the association between other covariates and the outcomes of interest [60].

ETHICAL CONSIDERATIONS

Institutional approvals

Institutional ethical approvals were obtained from the research ethics committees of the University of Cape Town, Walter Sisulu University, and UNITRA. Approval was also obtained from the Western Cape Provincial Reproductive Health Programme, the

City of Cape Town, the KSD health district in the Eastern Cape, and provincial and local Departments of Health in the Western and Eastern Cape Provinces.

Consent procedures

Study personnel obtained individual written informed consent from both clients and health care providers prior to their involvement in data collection. The informed consent explained:

- the purpose of the study;
- the voluntary nature of participation;
- what was involved in participation, including the duration of the interview;
- the risks and benefits of participation;
- protection of participant privacy (ie: that all information provided will be completely confidential and will only be viewed and used by the researchers on this project, and that participants' names will not be recorded to ensure anonymity); and,
- the participant's right to decide not to participate, to refuse to answer any question, or to withdraw from the interview at any time without any penalty.

These informed consent documents were also translated into isiXhosa (with back-translations to ensure appropriate phrasing) prior to the initiation of research (See Appendix 3A and 3B for consent forms).

Data Collection/Interview procedure

Data was obtained from clients and health care providers via an anonymous interviewer-administered structured questionnaire and semi-structured interviews.

Protection of privacy and confidentiality

All data was identified only by a unique participant number and kept in confidential files. No individual identifying information is or will be disclosed in reports, publications, or presentations.

Risks and benefits of participation

The only risk of participation was some risk of loss of privacy; however, procedures for the protection of confidentiality were observed to minimize this possibility. There were no guaranteed benefits to individual participants from participation, but participation in this study may help to improve family planning services in the Western and Eastern Cape provinces.

TIMEFRAME

The project took place over a 7-month period. A timeline for project activities can be found in the appendix (Appendix 4).

RESULTS – CLIENT DATA

Client Characteristics

A total of 205 clients at four clinics (two in the Western and two in the Eastern Cape) were interviewed (Table 5.1 in Appendix 5). There were 105 participants in the Western Cape and 100 participants in the Eastern Cape.

- *Socio Demographic Characteristics*

The mean age of participants was 25.9 years. Participants were older in the Western Cape (mean: 27.8 years) than in the Eastern Cape (mean: 24.0 years) (Table 1.1 below or summary table 5.2 in Appendix 5). Most participants (50.7%) were between the ages of 20 and 29 years. Most participants (82.0%) had at least some secondary school education. Only about half of the participants (42.1%) were employed and about one-quarter of participants were school children (24.9%). Almost all (99.5%) participants spoke isiXhosa as their main language.

Table 1.1: Socio-demographic characteristics of clients.

Characteristic	*Western Cape Total N=105*	*Eastern Cape Total N=100*	*Total N=205*
Mean age in years (SD)	27.8 (8.0)	24.0 (7.6)	25.9 (8.0)
Age categories, n (%)			
15-19	15 (14.3)	32 (32.0)	47 (22.9)
20-29	56 (53.3)	48 (48.0)	104 (50.7)
30-39	22 (21.0)	12 (12.0)	34 (16.6)
40-49	12 (11.4)	8 (8.0)	20 (9.8)
Employment status - currently working, n (%)	47 (44.8)	38 (39.2)	85 (42.1)
Type of work			
Scholar	21 (20.0)	30.0 (30.0)	51 (24.9)
Homemaker	4 (3.8)	9 (9.0)	13 (6.3)
Unemployed or seeking work	22 (20.1)	24 (24.0)	46 (22.4)
Employed	19 (18.1)	3 (3.0)	22 (10.7)
Main language spoken, n (%)			
Xhosa	105 (100.0)	99 (99.0)	204 (99.5)
Level of education, n (%)			
Grade 1-Grade 7 (primary)	14 (13.3)	12 (12.0)	26 (12.7)
Grade 8-Grade 12 (secondary)	82 (78.1)	86 (86.0)	168 (82.0)
Tertiary	9 (8.6)	2 (2.0)	11 (5.4)

- *Reproductive and Sexual History*

The mean number of biological children was 1.9. Women in the Western Cape had a lower mean number of children (1.7) than women in the Eastern Cape (2.2). The mean age at first pregnancy was 19.3 years with the age at first pregnancy being older for women in the Western Cape (20.1) as compared to the Eastern Cape (18.4). The mean time since last pregnancy was 3.8 years for the whole sample but Western Cape participants reported a longer duration since last pregnancy (4.6 years) than women from the Eastern Cape (2.9 years). Fifty-seven percent of participants reported having ever had an unplanned pregnancy. Overall, about 35% reported that their most recent pregnancy was mistimed (33% in the Western Cape and 36% in the Eastern Cape) and 16% said their most recent pregnancy was not wanted at all (14% in the Western Cape and 18% in the Eastern Cape).

Most women reported that they were in a current sexual relationship (95.1%) (Table 1.2 below or summary Table 5.3 in Appendix 5). Just more than half (52.7%) were in a stable non-cohabitating relationship. Eighteen percent were currently married and cohabitating. The mean number of sexual partners within the last year was 1.2 with most (94.6%) reporting 2 or fewer partners in the last year.

Table 1.2: Reproductive and sexual history characteristics of clients.

Characteristic	*Western Cape Total N=105*	*Eastern Cape Total N=100*	*Total N=205*
Mean number of biological children among those reporting children – mean (SD)	1.7 (0.8)	2.2 (1.7)	1.9 (1.3)
Currently in a sexual relationship, n (%)	97 (92.4)	98 (98.0)	195 (95.1)
Relationship Status, n (%)			
Married cohabiting	21 (20.0)	16 (16.0)	37 (18.1)
Single: in stable relationship, cohabiting	13 (12.4)	6 (6.0)	19 (9.3)
Single: in stable relationship, not cohabiting	52 (49.5)	56 (56.0)	108 (52.7)
Single: casual relationship	9 (8.6)	14 (14.0)	23 (11.2)
Mean number of sexual partners in last 12 months (SD)	1.2 (0.6)	1.25 (0.6)	1.2 (0.6)
0-2 sexual partners	101 (96.2)	93 (93.0)	194 (94.6)
>2 sexual partners	4 (3.8)	7 (7.0)	11 (5.4)
Mean number of total pregnancies (SD)	1.9 (1.2)	2.4 (2.0)	2.1 (1.6)
Mean age at first pregnancy (SD)	20.1 (3.7)	18.4 (2.8)	19.3 (3.4)
Mean time elapsed since last pregnancy – in months (SD)	55.2 (59.6)	35.6 (34.1)	45.7 (49.7)
Feelings towards last pregnancy – timing, n (%)			
Wanted child then	33 (33.3)	20 (20.0)	53 (26.6)
Wanted child later	33 (33.3)	36 (36.0)	69 (34.7)
Did not want more children	14 (14.1)	18 (18.0)	32 (16.1)
Ever had unplanned pregnancy, n (%)	58 (55.2)	59 (59.0)	117 (57.1)

- *Contraceptive use and knowledge*

Almost all (98.5%) of the respondents had ever used a contraceptive method (Table 1.3 below or summary Table 5.4 in Appendix 5). The most commonly ever used methods were the 2-month injectable (76.1%), male condom (63.9%), the 3-month injectable (63.4%), and the pill (41.0%). At the time of the interview, 92.7% of clients were using a modern method of contraception. The most commonly used method was the injectable (81.5%). A greater proportion of women in the Western Cape were using a method of contraception than in the Eastern Cape (97% vs. 88%). Twenty-six percent of women had heard of emergency contraception (EC) but only 2% had ever used EC. Twenty-eight percent had intercourse in the last twelve months without using any method of contraception and 63.4% had sex without using a condom within the last twelve months.

Table 1.3: Contraceptive characteristics of clients.

Characteristic %	*Western Cape Total N=105*	*Eastern Cape Total N=100*	*Total N=205*
Currently using contraception, n (%)	102 (97.1)	88 (88.0)	190 (92.7)
Type of Method, n (%)			
Oral contraceptive pill	9 (8.6)	6 (6.0)	15 (7.3)
Injectable	93 (88.6)	74 (74.0)	167 (81.5)
Male condom	65 (61.9)	41 (41.0)	106 (51.7)
Ever used a contraceptive method, n (%)	105 (100.0)	97 (97.0)	202 (98.5)
Oral contraceptive pill	48 (45.7)	36 (36.0)	84 (41.0)
Injectable	79 (75.2)	51 (51.0)	130 (63.4)
3-month	85 (81.0)	71 (71.0)	156 (76.1)
2-month	79 (75.2)	52 (52.0)	131 (63.9)
Male condom	5 (4.8)	0	5 (2.4)
IUD	43 (41.0)	11 (11.0)	54 (26.3)
Ever heard of emergency contraception, n (%)	26 (24.8)	31 (31.0)	57 (27.8)
Sex in last 12 months without a contraceptive method, n (%)	63 (60.0)	65 (67.0)	128 (63.4)
Sex in last 12 months without a condom, n (%)			

Awareness, Knowledge, and Use of the IUD

About 26% of participants had ever heard of the IUD method. More women in the Western Cape (36.2%) than in the Eastern Cape (15%) had heard of the IUD.

Of the 53 (25.8%) women who had heard of the IUD, most said they had heard of the method through a friend (34%), through their school (26.4%), or through a family member (11.3%). Of those who had heard of the IUD, 20.8% said that a health care provider had ever discussed the method with them and 11.3% reported that a health care provider had ever recommended the IUD as an appropriate contraceptive method. Thus 5.4% of the total sample had ever discussed the IUD with a health care provider and 2.9% had ever had an IUD recommended to them by a healthcare provider.

Among women who had heard of the IUD, specific knowledge about the method was poor. Only 8% reported that they knew how the IUD worked. When asked to describe an IUD, only 22% were able to give any correct information (ie: correct information about how the IUD works to prevent pregnancy, its duration of use, what it looks like, etc). In regards to the length of time that an IUD can be used for, none of the study participants knew that the IUD could be used for over 5 years (Table 5.5 in Appendix 5).

No respondent had seen information about the IUD in the clinic on the day of interview

Only 3 women (6%) had ever used an IUD. All three were in the Western Cape. None were using it currently.

Only 10.2% of women reported knowing a woman who had ever used an IUD and 96.1% think that most women do not know about the IUD method.

Attitudes towards and Perceptions of the IUD method

After questions regarding IUD awareness and knowledge were asked, all participants were given a brief, standardised description of the IUD method (see Client

Questionnaire, Appendix 1 for description). Overall, 72.7% of women said that they would consider using the IUD. Most women (89.7%) reported that they thought there were advantages to using the IUD. More women in the Western Cape (94.3%) than in the Eastern Cape (84.9%) reported that they thought there were advantages. Participants could mention multiple advantages. The most commonly mentioned advantage was that the IUD could be used for a long time (63.9%). Other commonly mentioned advantages were that the IUD is effective at preventing pregnancy (47.8%) and that once the IUD is removed, fertility returns quickly (39%).

Only 14% of respondents said they thought there may be disadvantages to using the IUD, with more women from the Eastern Cape (21%) reporting disadvantages than women from the Western Cape (7.6%). The main disadvantages cited were that the IUD might cause unspecified health problems (7.8%), that the method was not familiar to women yet (6.3%), and that it might be painful to use (5.4%).

Eighty-six percent reported that they thought the IUD was safe and 87.8% reported that they thought the IUD was effective at preventing pregnancy. Forty-two percent believed that their partners would think that the IUD was an acceptable contraceptive method. Slightly more women in the Western Cape (45.2%) compared to the Eastern Cape (38%) thought the method would be acceptable to their partners.

Women were asked their opinions about how the IUD compared to other methods of contraception with respect to ease of use. Eighty-seven percent of women thought that the IUD was easier to use than oral contraceptive pills; 84.9% thought that it was easier to use than female sterilization; 78.5% thought it was easier to use than the injectable; and 58.5% and 47.3% thought it was easier to use than the male and female condom, respectively. Importantly, many women said that male (26.3%) and female condoms (14.2%) were easier to use than the IUD because condoms would protect women from both pregnancy and STIs, while the IUD would only stop pregnancy.

Participants were asked if they thought various categories of women were appropriate candidates for IUD use. Almost all (95.1%) women said that they believed women who already had a child could use an IUD, but only 53.7% thought a nulliparous woman could use an IUD. Almost 73% said that teenagers could use an IUD; 31.9% said that women with HIV could use the IUD; and 29.8% said women with STIs could use the IUD.

Overall, women seemed to have generally positive attitudes and perceptions about the IUD. A little less than one-quarter thought having an IUD could increase a woman's chance of contracting STIs, and only 2% thought the IUD could causes infertility.

After having the method explained to them, almost all participants (87.3%) thought that women would be interested in the IUD, and 74.5% said that they would consider using the IUD if it was offered to them. (See summary Table 5.6 in Appendix 5).

Factors associated with awareness of the IUD method

Overall, less than one-quarter of women in this sample had heard of the IUD. (See Table 2 below for factors associated with awareness of the IUD or summary Table 5.8 in Appendix 5).

Women in the Western Cape were significantly more likely to know about the IUD method (36%) than women in the Eastern Cape (15%) (p=0.001). Older women (women 30 to 39 at 47.1% and women 40 to 49 at 60.0%) were more likely than younger women to know about the IUD (women aged 20 to 29 at 19% and women 15 to 19 at 10.6%, p=0.000. Although it was not statistically significant, more women with a higher level of education (45% tertiary level) know about the IUD than women who only had a secondary or primary level education (25% secondary and 23% primary). Single women or women in a casual relationship were more likely to know about the IUD (18.5%) than married women and women in stable relationships (6.8%), p=0.02. Women who had ever heard of emergency contraception were significantly more likely to have heard of the IUD than women who had never heard of EC (50 vs. 17.2%, p=0.000).

Table 2: Characteristics associated with awareness of the IUD.

Characteristic	*Aware of IUD N (%)*	*Not Aware of IUD N (%)*	*P-value*
Overall, n (%)	53 (25.9)	152 (74.1)	
Province, n (%)			0.001
Western Cape	38 (36.2)	67 (63.8)	
Eastern Cape	15 (15.0)	85 (85.0)	
Age in years, n (%)			0.000
15-19	5 (10.6)	42 (89.4)	
20-29	20 (19.2)	84 (80.8)	
30-39	16 (47.1)	18 (52.9)	
40-49	12 (60.0)	8 (40.0)	
Education, n (%)			0.3
Primary school only	6 (23.1)	20 (76.9)	
Secondary school only	42 (25.0)	126 (75.0)	
Tertiary	5 (45.5)	6 (54.6)	
Relationship Status, n (%)			0.02
Married / Stable relationship	14 (6.8)	31 (15.1)	
Single / Casual relationship	38 (18.5)	115 (56.1)	
Ever heard of emergency contraception, n (%)			0.000
Yes	27 (50.0)	27 (50.0)	
No	26 (17.2)	125 (82.8)	

Factors associated with ever using the IUD

Only three women in our sample of 205 had ever used the IUD. Due to this very small number, bivariate analysis to identify factors associated with IUD use was inappropriate and, thus, not conducted.

Factors associated with positive attitudes towards the IUD

After being read a standardised description of the IUD, participants were asked what they thought about the method. Interviewers probed to see whether respondents thought the method was generally good or bad and all responses were recorded. These responses were then post coded and broken up into what were considered to be positive responses about the IUD (such as "Needs less routine maintenance" or "You won't get pregnant even if you are raped") and negative ones (such as "It might be painful to insert" or "It might cause health problems"). Overall, most (91%) of the participants expressed positive attitudes towards the IUD.

Bivariate analysis showed that ever use of a contraceptive method was the only variable significantly associated with having positive attitudes about the IUD.

However, given that there was no significant variation with respect to ever use of a contraceptive in the sample, this finding is not meaningful.

Factors associated with considering use of the IUD

The characteristics associated with considering use of the IUD, should women require contraception in the future, were living in the Western Cape and currently using contraception (see Table 3 below or summary Table 5.11 in Appendix 5). Women in the Western Cape (83%) were significantly more likely to consider use of the IUD in the future than women in the Eastern Cape (62%) (p=0.000). Almost three-quarters of women who were currently using contraception said that they would consider the IUD in the future compared to 41.7% of those who were not currently using contraception (p=0.02). Again there are several factors that while not statistically significant are worth mentioning with respect to considering IUD use: being single or in a casual relationship (76.5%) vs. being married or in a stable relationship (20%) (p=0.2) and higher level of education (women with tertiary level education (91%) were far more likely to consider use of the IUD than women with only secondary (73%) or primary (65.4%) level education, p=0.4).

Table 3: Characteristics associated with considering use of the IUD in the future.

Characteristic	*Considering Use of IUD n (%)*	*Not Considering Use of IUD n (%)*	*P-value*
Overall, n (%)	149 (72.7)	41 (20.0)	
Province, n (%)			0.000
Western Cape	87 (82.9)	9 (8.6)	
Eastern Cape	62 (62.0)	32 (32.0)	
Age (years), n (%)			0.4
15-19	30 (63.8)	11 (23.4)	
20-29	79 (76.0)	20 (19.2)	
30-39	24 (70.6)	6 (17.7)	
40-49	16 (80.0)	4 (20.0)	
Education, n (%)			0.4
Primary school only	17 (65.4)	8 (30.8)	
Secondary school only	122 (72.6)	32 (19.1)	
Tertiary	10 (90.9)	1 (9.1)	
Relationship Status, n (%)			0.2
Married / Stable relationship	30 (20.1)	13 (31.7)	
Single / Casual relationship	114 (76.5)	27 (65.9)	
Currently using contraception, n (%)			0.02
Yes	142 (74.7)	37 (19.5)	
No	5 (41.7)	4 (33.3)	
Current Method, n (%)			0.13
Oral contraceptive pill	4 (66.7)	2 (33.3)	
Injectable	56 (73.7)	16 (21.1)	
3-month	36 (78.3)	8 (17.4)	
2-month	20 (66.7)	8 (26.7)	
Female sterilization	0	0	
Male sterilization	2 (100.0)	0	
Condom (Male + Female)	5 (62.5)	2 (25.0)	
Dual Method	77 (77.0)	17 (17.0)	
Ever used a contraceptive method, n (%)			0.000
Yes	149 (73.8)	40 (20.0)	
No	0	1 (33.3)	
Ever used emergency contraception, n (%)			0.13
Yes	3 (75.0)	1 (25.0)	
No	66 (82.5)	11 (13.8)	

Logistic Regression Models

- *Awareness of the IUD method*

After adjusting for level of education, being from the Western Cape, one's age, and having heard of emergency contraception (EC) all independently predicted awareness of the IUD method. Women from the Western Cape were two times more likely to have heard of the IUD than women from the Eastern Cape (OR=2.13; 95% CI 0.99 – 4.58). Women who were between the ages of 30 to 39 years were three times more likely to have heard of the IUD than women between the ages of 15 to 29 years (OR=3.05; 95% CI 1.29 – 7.20) and women who were between the ages of 40 to 49 years were almost eight times more likely to have heard of the IUD than women between the ages of 15 to 29 years (OR=7.75; 95% CI 2.68 – 22.42). Also, women who had heard of EC were 3 times more likely to have heard of the IUD than women who had not heard of EC (OR=3.22; 95% CI 1.46 – 7.11). The difference in awareness of the IUD between women who had a tertiary education and those who did not was non-significant (OR=1.23; 95% CI 0.32 - 4.79). (See summary Table 5.13 in Appendix 5).

- *Considering use of the IUD in the future*

After adjusting for age and level of education, being from the Western Cape was the only characteristic that independently predicted whether a woman would consider use of the IUD in the future. Women from the Western Cape were four times more likely to consider the IUD use than women from the Eastern Cape (OR=4.76; 95% CI 2.07 – 10.91). (See summary Table 5.15 in Appendix 5).

RESULTS – PROVIDER DATA

Thirty-two providers were interviewed in total; fifteen from the Western Cape and 17 from the Eastern Cape.

Provider Characteristics

Although a total of 32 providers took part in the survey, background characteristics were only available for 27 providers because that section of the questionnaire was added after 5 interviews had been completed. Of those, 55.6% were professional nurses, 33% were chief or senior professional nurses, and 4% were enrolled or staff nurses. Fourteen of the providers (52%) were the manager or supervisor of the facility. The mean number of years that the providers had been working at the facility was 4.3 and the mean number of years since completion of basic training was 13. Fifty-nine percent of providers had completed a family planning course. In the last six months, 96.3% of providers had provided family planning, but all were expected to provide family planning in the future (See Table 4 below or summary Table 5.16 in Appendix 5).

Table 4: Characteristics of providers.

Characteristic	*Western Cape n (%) n=11*	*Eastern Cape n (%) n=16*	*Total n (%) n=27*
Rank			
Chief / Senior professional nurse	2 (18.2)	7 (43.8)	9 (33.3)
Professional nurse	7 (63.6)	8 (50.0)	15 (55.6)
Enrolled nurse/staff nurse	1 (9.1)	0	1 (3.7)
Other	1 (9.1))	1 (6.3)	2 (7.4)
Manager or supervisor for the facility	4 (36.4)	10 (62.5)	14 (51.9)
Years working at the facility – mean (SD)	4.2 (2.0)	4.2 (4.3)	4.3 (3.1)
Years since finishing basic training – mean (SD)	15.9 (7.7)	11.3 (6.2)	13.2 (7.1)
Completed a family planning course	10 (90.9)	6 (37.5)	16 (59.3)
Trained to provide HIV care services	11 (100.0)	16 (100.0)	27 (100.0)
Trained to provide STI care services	9 (81.8)	13 (81.3)	22 (81.5)
Has provided family planning in last 6 mo.	11 (100.0)	15 (93.8)	26 (96.3)
Has provided HIV care services in last 6 mo.	10 (90.9)	14 (87.5)	24 (88.9)
Has provided STI diagnosis and treatment in last 6 mo.	10 (90.9)	16 (100.0)	26 (96.3)

IUD Knowledge

- *Method Specifications*

Overall, provider knowledge of the IUD method was inadequate (see summary Table 5.17 in Appendix 5). All providers had heard of the IUD. However, when asked to describe the IUD, only 78.1% described the method correctly with regards to insertion and removal issues, who can insert an IUD, its proper duration of use, how it works to prevent pregnancy, and what the device looks like. Only 53.3% knew that there were different types of IUDs. When asked about the correct duration of use, only 12.5% of providers said that the IUD could be used for up to ten years, and although the IUD is over 99% effective at preventing pregnancy, only 18.8% of providers thought that the IUD was very effective at preventing pregnancy. However, 84.4% could correctly explain how the IUD works to prevent pregnancy, meaning they said it that the IUD works by creating a spermicidal endometrium or that it inhibits sperm transport, mobility, and viability.

- *Knowledge and Perceptions of Efficacy, Safety, Contraindications, and Side Effects*

Providers were asked basic questions about the effectiveness, safety, contraindications to use, side effects, and risks of the IUD. Providers were asked to compare the effectiveness and safety of the IUD to other contraceptive methods. With respect to IUD effectiveness, 87.5% of providers said that the IUD was better than the rhythm method, 87.1% said that it was better than the withdrawal method, 71.9% said that it was better than the pill, 65.6% thought that it was better than spermicides, and 59.4% thought it was better than the male condom. About 63% thought that the injectable was better than the IUD at preventing pregnancy. When asked to compare the safety of the IUD to other methods, 81.3% reported that the IUD was safer than the pill, but for most other methods only 30 to 50% reported that the IUD was safer. Three-quarters of providers believed that there are contraindications to IUD use. The most commonly mentioned contraindication was cervical, endometrial, or ovarian cancer awaiting treatment (28.1%). Other contraindications that were mentioned were having an active STI (22%), unexplained and/or abnormal vaginal bleeding (18.8%), being pregnant (12.5%), and having PID (12.5%). About 63% of providers said the IUD

causes side effects and the most commonly reported side effect was increased menstrual blood (28.1%). This is a correct response for copper-bearing IUDs. Finally, 65.5% of providers believed that the IUD had health risks related to it. The most commonly mentioned health risk was ectopic pregnancy (28.1%), followed by developing PID (22%), uterine perforation (15.6%), and developing an STI (9.4%).

Only 31.3% said the IUD could be used as a form of emergency contraception. Fifty-nine percent said that the IUD increases one's risk of contracting STIs and 51.6% did not think that nulliparous women could use an IUD.

Only 28% of providers correctly stated that the time to first check-up after IUD insertion was 3 to 6 weeks or after the first menstrual period and half of the providers believed that women needed either monthly or six-monthly follow-up visits for their IUD throughout the duration of use, which is incorrect as long as women are experiencing no problems with the method. When asked what type of information they would give women about the IUD, providers most commonly said that they would give women information about when to return for follow-up visits (40.6%), side effects (37.5%), the duration of use for the method (28.1%), and how to prevent STIs (28.1%). When asked whom the IUD was not appropriate for, providers said that the IUD was not an appropriate method for women with a history of STIs (46.9%), HIV-positive women (28.1%), and teenage women (25.0%). (See summary Table 5.17 in Appendix 5).

IUD Practices

When providers were asked to spontaneously mention which methods of family planning they routinely suggested to clients, only one provider in the Western Cape and one in the Eastern Cape mentioned the IUD. All providers stated that they suggest the 3 and 2-month injectables as well as the male condom and 96.6% said they suggest the oral contraceptive.

Of the 32 providers interviewed, 18.8% had ever counselled a woman about the IUD, and only 15.6% had ever suggested the IUD to a potential client.

About 22% of providers reported that they were trained to insert the IUD, and only 13.3% had ever inserted an IUD. Of those insertions, all of them had been over a year ago. Only 28.1% had ever referred a woman to another site for an IUD. (See summary Table 5.18 in Appendix 5).

IUD Attitudes and Perceptions

Most providers believed there were advantages to increasing the availability of the IUD. Fifty percent stated that IUDs would help reduce unplanned and unwanted pregnancies. However, providers also believed there were disadvantages to the IUD method. The most commonly cited disadvantage was side effects (34.4%), followed by concern that the IUD does not offer protection from STIs (31.3%). Eight providers (25%) said that the IUD increases the risk of developing PID. When asked whether they would recommend the IUD to certain groups of women, the following responses were given: 78.1% of providers said they would recommend the IUD to women who desired more children in the future, 75% said they would recommend the IUD to unmarried women, and 56% said they would recommend the IUD to women who have not had any children yet. The mean age below which providers said they would not provide the IUD was 17.5 years. Finally, when asked if they had any concerns

about the IUD, the most commonly cited concern (40.6%) was side effects related to the method. Other concerns that were cited were a concern regarding the medical safety of the IUD (including concern about PID) (22%), concern regarding the fact that a trained provider must insert the IUD (18.8%), and concern that the IUD offers no protection from HIV or STIs (11.6%).

When asked about the three main barriers to client access and use of the IUD, providers highlighted the lack of knowledge on the part of the provider (84.4%), a lack of trained providers to insert and remove the device (62.5%), the fact that IUDs are not available at facilities (56.3%), and a lack of knowledge on the part of potential users (46.9%).

Eighty-one percent of providers believed that women would be interested in the IUD if they knew about it but only 37.5% of providers believed that women's partners would support the use of the IUD as a contraceptive method.

When asked why they thought IUD use was low in South Africa, the greatest number of providers said that it was because of a lack of knowledge on the part of the provider and user (50.0%). Just over half (51.6%) believed that the IUD would be a good method for South Africa, 73.3% believed that IUD use should be promoted in South Africa. Among providers who thought that the IUD should be promoted in South Africa, the most commonly reported reasons for this were that it would increase women's contraceptive choice (25.0%) and it would help prevent unwanted pregnancies (21.9%). Among the 29% of providers who believed the IUD would not be a good method for South Africa, the most commonly cited reasons for this were that women are either misinformed or lack information about the IUD (55.6%) and that South Africa has a high prevalence of HIV and STIs (33.3%). Among the 26.7% of providers who believed the IUD should not be promoted in South Africa, the most common objection was that there is a high prevalence of STIs and HIV in South Africa (37.5%). Other objections listed were that women will be afraid to use the IUD, women will think the IUD is too invasive, using IUDs will make women ignore condoms, and that people will think that their babies will be born with IUDs in their heads (12.5% each) (see summary Tables 5.19 and 5.20 in Appendix 5).

Training needs

With regards to training, providers recognized that they needed more information. When providers were asked if they had sufficient training with regards to nine IUD related issues, no more than 10 providers (32.3%) said that they had enough training in any given area relating to providing the IUD. Almost all (93.6%) providers believed that they needed more training and information about the IUD. (See summary Table 5.17 in Appendix 5). The issues that providers most often cited as areas in which they needed more training and information were how to insert and remove the IUD (72.4%), general knowledge about the method (48.3%), the advantages and disadvantages of the method (20.7%), the types of IUDs that are available (17.2%), and recommendations about whom the IUD is appropriate for (17.2%) (See summary Table 5.20 in Appendix 5). Less than 20% of providers felt that they had enough knowledge to counsel a woman on the IUD and only 6.5% thought they could insert one.

DISCUSSION

This cross-sectional knowledge, attitudes, and practices study was undertaken at the request of the Reproductive Health Programme of the Provincial Government of the Western Cape Province. The purpose of the study was to learn more about client and provider knowledge, attitudes and practices with respect to the IUD in order to inform strategies relating to the reintroduction of the IUD into the contraceptive method mix in South African public health services.

Among clients, awareness and knowledge about the IUD was poor. Only about a quarter of women had ever heard of the IUD and very few knew how the IUD worked or its possible duration of use. This is not surprising considering that women reported that health care providers, on the whole, had never discussed the method with them, the method was never offered at the clinics, and information about the IUD was not available at health facilities. Use of the IUD was extremely low with only 3 women (6%), having ever used the method. There were also substantial regional differences with women in the urban Western Cape having more knowledge about the IUD method than women in the rural Eastern Cape. All of the past IUD users were from the Western Cape.

Despite having little knowledge or exposure to the IUD in the past, women had positive attitudes towards the IUD once they learned more about the method. Women cited far more advantages than disadvantages to the IUD. Some key advantages that women highlighted were the IUDs long duration of use, its effectiveness at preventing pregnancy, and the quick return to full fertility after the removal of the device. The majority of women believed the IUD to be a safe and effective method and very few reported the common yet unfounded misconceptions and myths that tend to plague the IUD. For example, very few women thought that the IUD caused infertility, caused health problems for the women who use them, or increased one's chances of contracting an STI. Furthermore, when women were asked to compare the IUD to other contraceptive methods, women thought the IUD was an easier contraceptive method to use than oral contraceptive pills, injectables, male and female condoms, and female sterilization. An overwhelming 96% of respondents said that they believed that most women do not know about the IUD, 87% believed that women would be interested in the method, and almost 75% of the respondents said that they themselves would consider the method if it was offered to them.

These results would suggest that the IUD appears to be an acceptable method of contraception to the women we sampled. However, hypothetical acceptability of the IUD does not necessarily translate into long-term use. Although our results suggest that women are interested in the method and had positive attitudes towards it, these conclusions were drawn from participants' reported feelings following the presentation of a short description of the IUD. We therefore have an indication that women might like the IUD method but a woman's decision to choose a particular method is complex and the glowing responses we received may not be an accurate representation of potential usage or acceptability.

There were a number of factors that were most likely to dispose women towards awareness of the IUD method and considering use of the IUD in the future. The characteristics associated with awareness of the IUD were living in the Western Cape, older age, being single or in casual relationship, and having used emergency contraception. The characteristics associated with considering use of the IUD in the

future were living in the Western Cape and currently using contraception. Originally, we had hoped to report on the characteristics associated with ever using the IUD but unfortunately, only three women in the study had ever used the IUD, making bivariate analysis inappropriate.

Our logistic regression modelling showed that after adjusting for level of education, being from the Western Cape, older age, and having heard of emergency contraception all independently predicted awareness of the IUD method. After adjusting for age and level of education, being from the Western Cape was the only characteristic that independently predicted whether a woman would consider use of the IUD in the future.

The results of the logistic regression modelling showed that women from the Western Cape were more likely to know about the IUD method and more likely to consider using it in the future than women from the Eastern Cape. This is not surprising since women from the Western Cape are likely to have had a higher degree of reproductive education or access to reproductive services than women from the Eastern Cape. The Western Cape also has a more developed reproductive health infrastructure than the Eastern Cape. In addition, the Western Cape has done more than the Eastern Cape to provincially promote the development of contraceptive projects and there have been some attempts in the past to generate interest in the IUD in the Western Cape. It seems logical that women in older age groups would have been more likely to be aware of the IUD and having heard of emergency contraception would suggest that these women had access to a greater degree of reproductive health services or information. It is therefore not surprising that women who knew about EC were also aware of the IUD method.

Our results differ from what the most recent SADHS found regarding the IUD. The SADHS found that over 75% of married and sexually active women in South Africa reported knowing about the IUD while only 8.5% reported ever using it, and only 1.2% were currently using the method [58]. In contrast, in our sample, we found that only about 26% of women had ever heard of the IUD, that only 6% had ever used it, and none of the women were currently using the method. It is likely that our results differ from the SADHS since the SADHS is drawn from women in the general South African population rather than women specifically attending clinics for family planning services.

The SADHS also found that older age groups reported the highest use of the method with 15.2% among 35-39 year olds, 20.6% among 40-44 year olds, and 17.4% among 45-49 year olds [58]. Since a very small number of women in our study ever used the IUD, it was not possible to make a meaningful breakdown of method use compared to age. However, when we look at the characteristics associated with awareness of the method, older age was a predictor of awareness with 60% of women who knew of the IUD being between 40-49 years and 47% being 30-39 years old. One would expect that women attending family planning services would have a greater knowledge of contraceptive methods due to their exposure to family planning. We may have found a much lower knowledge level in our study compared to the SADHS because our sample included women who were younger and not necessarily married. This could account for the decrease in method knowledge since younger age groups were less likely to know about the IUD than older age groups. Furthermore, since the SADHS samples from the general population, it includes women from a broader range of socio-economic backgrounds as compared to this study, which only sampled from women attending public sector clinics. It is not surprising that older women and

women of a higher socio-economic status than those sampled would have greater knowledge about the IUD. Therefore, it seems as if the difference in knowledge levels that we observed between this study as compared to the DHS can be explained by the socio-demographics of this sample.

One would expect that the percentage of women who have ever used the IUD in the general population (from which the SADHS is drawn) would be fairly similar to the women who had ever used the IUD in this study and who were sampled from those attending family planning services. Indeed, the percentage of women in this study who had ever used the IUD (6%) was similar to the percentage (8.5%) of women that the SADHS reported as ever having used the IUD method [58].

However, the SADHS found that 1.2% of women in South Africa were currently using the IUD, while in this study, no women were currently using the method [58]. This result is not surprising since our sample was drawn from women attending family planning clinics. Certainly, women who are happily using the IUD in the community would not be at family planning clinics unless they had a problem and so this can explain the lack of current IUD users in our sample.

Providers also have poor knowledge of the IUD method. All the providers had heard of the IUD yet about 20% of those interviewed could not describe the method correctly and about 15% could not describe how the IUD works to prevent pregnancy. In addition, most providers were unaware of the correct duration of use for the method or its effectiveness at preventing pregnancy. Most providers (63%) believed that the injectable was better than the IUD at preventing pregnancies. This belief could mostly be due to the greater availability and familiarity of providers with the injectable and its preference as a contraceptive method in South Africa. In 1998, the injectable was being used by 49% of all women in South Africa between the ages of 15 to 49 who were using contraception, making it the most commonly used method in the country [61].

When providers were asked about the risks of the IUD method, the most commonly cited risk was that of ectopic pregnancy followed by the belief that the IUD increases a woman's chance of contracting an STI. It is interesting to note that these perceived risks, which are most likely tied to a fear of PID, were mentioned by providers, but not by clients. Twenty-five percent of providers said that the IUD increases the risk of developing PID, even though this has been disproved. Providers were also lacking knowledge about who was an appropriate candidate for the method. Providers said that the IUD was not appropriate for women with a history of STIs, HIV-positive women, and teenage women, despite the fact all of these groups of women are capable of successfully using the IUD [7, 35, 62]. These responses suggest a need for far more training about the contraindications to use and the current recommendations about who is eligible for the IUD. Almost all the providers (94%) recognised that they needed more information and training before they could either counsel women or insert or remove the IUD.

When asked about the three main barriers to client access and use of the IUD, providers highlighted issues relating to a lack of knowledge on the part of providers and potential users, as well as supply and training issues. Similarly, providers believed that IUD use was low in South Africa because of a lack of knowledge on the part of the provider and user. Overall, about half of the providers believed that the IUD would be a good method for South Africa and the majority believed that IUD use should be promoted in South Africa.

Among women in this study, the IUD method was relatively unknown, but attitudes towards the IUD were positive once women were given information about the method. This means that in South Africa there is an opportunity to educate women who have not been inundated with misinformation about the IUD method. The main obstacle to clients' use of the IUD in South Africa appears to be a lack of knowledge, not misperceptions. In contrast to other studies that have showed that a main barrier to the increased use of the IUD method has been due to myths and misinformation among potential users, this study found that South African women had very few misconceptions about the IUD and had very positive attitudes towards the method and its increased use [18, 52]. The data presented here suggest that if the IUD were introduced in South Africa, it would be well accepted [17, 18, 19, 63].

Providers do have some misinformation about the IUD method and this will require correction. The results of this study are consistent with the findings of other studies that show that despite evidence to the contrary, many providers still believe that a relationship existed between IUDs and PID [55]. Providers in our study listed developing PID, ectopic pregnancy, and an increased chance of developing STIs as risks of the IUD method. Also, the results of this study are consistent with others that have found that a provider fear of side effects, which are often unfounded, along with incorrect candidate selection criteria is often a barrier to increased use. Providers in this study were either misinformed or not up to date on current contraindications to IUD use. In other recent studies, it has also been found that providers too narrowly defined appropriate IUD candidates and it has been suggested that unless educated correctly, providers could become a barrier to the increased use of the method through unwarranted and restrictive candidate selection [20, 55]. As others have suggested, it will be necessary to educate providers and emphasize the medical safety and acceptability of current IUDs so that provider misperceptions are not a barrier to increased use [20].

Like other studies, our study found that providers need far more training and knowledge about the IUD before they will feel competent and be able to accurately counsel women about the method and successfully provide it [18]. A 1997 systematic review of 18 randomised trials suggested that educational outreach programs have a positive impact overall on clinical practice [64]. Education and training for providers is critical to the increased uptake of the IUD method since providers are often the gatekeepers through whom women access family planning. In South Africa, providers are especially influential when it comes to women's contraceptive decision making.

It is important to note however, that education of providers alone may not be enough to create sustained interest in increasing use of the IUD. A recent study in Nicaragua found that while medical education about the IUD was indispensable for health care providers, it was not adequate to stimulate interest on the part of the potential users [56]. Therefore, it will be necessary to simultaneously educate both providers and potential users of the method. Knowledge and training for providers will need to focus on areas of misinformation and building clinical competence. Results from other studies have showed that once countries make the decision to include the IUD in the method mix, they need to do more than just train providers to insert it [18, 56]. Having health department commitment helps facilitate IUD reintroduction and overcomes barriers, as does training for providers and education for women, strong partnerships with NGOs, and systematic monitoring and evaluation of programmes [65].

In South Africa, there is a need for long-term family planning methods among many different groups of women due to high levels of unintended and teenage pregnancy, a high prevalence of HIV, and high levels of antiretroviral treatment which can have potentially teratogenic effects on a developing embryo [58, 66]. The IUD could fill an important role and provide a good option for women who would prefer not to be sterilized or for women who want family planning for spacing births. The IUD is also a good method for young women who want a trustworthy contraceptive method and who are not ready to have children. In light of South Africa's HIV epidemic, the IUD is even a good method for HIV-positive women. The IUD has not been shown to increase transmission of the virus or to increase the amount of the virus in vaginal secretions [32, 45]. The IUD is a very good option for HIV-positive women and especially good for HIV-positive women who are taking potentially teratogenic ARVs since the method is extremely effective at preventing pregnancy.

The IUD may be a method that suits the needs of South African women better than what is currently available. The most commonly used contraceptive method in South Africa, the injectable, is fast and easy to provide and minimal counselling is necessary, but the method is not the best choice for all women. Many women complain about the side effects of the injectable, particularly sporadic menstruation or amenorrhoea and the delay in return to full fertility [67]. These are common side effects of hormonal methods. As a non-hormonal method, the IUD offers women another contraceptive choice without the common hormonal side effects. For example, with the copper IUD, women continue to have normal periods. This is especially attractive to many African women [59]. Also, the return to fertility with hormonal methods may take a number of months while return to fertility with the IUD is more rapid because it is non-hormonal. Another attractive aspect of the IUD is that it has few compliance issues. Unlike the injectable, where women have to return for injections every two or three months, the IUD will work and will continue to work as long as it is inserted. Women in our study echoed this issue when they said that the IUD was an easier contraceptive method to use than the injectable.

It has been argued that the IUD may be too time consuming for some clinicians to provide and that the necessary sterile environment and lack of basic materials and equipment for insertion in some developing country settings leads to poor uptake of the method [56, 65]. Although the IUD may be more time consuming to provide, it decreases the number of visits by women to the health service in the long run and reduces the stress on health centres. Since the IUD can be used safely and effectively for a long time, this also means that clients do not need to return for visits unless there is a problem or they want their IUD to be removed. This also puts less financial strain on women in terms of saving transport costs, taking fewer days off from work, and not having to find child care. Overall, the IUD is an incredibly cost effective option that can be provided so as to benefit both health care systems and clients [13].

Our findings have important implications and can help the provincial and national health services in planning for the reintroduction of the IUD. It is clear that there is a need for awareness campaigns among women seeking contraception. Study participants overwhelmingly did not know about the IUD method and 96% of respondents believed that women did not know about the IUD. This shows that in South Africa, public education programs about the method would be necessary for building public support and interest in the IUD. Also, the results showed that there are regional differences between the Western and Eastern Capes and that women have had more exposure to the IUD in the Western Cape. Therefore, education approaches need to recognize these regional differences. The advantages of the method that

women mentioned most often were the efficacy of the IUD, its long duration of use, and the quick return to fertility after its removal. Education campaigns could focus on these key advantages with only minimal attention given to dispelling the myths that were not especially prevalent among those surveyed. Some opponents of the IUD say that the method is not practical because it does not protect women from STIs but that is no different from many other methods. Even the injectable, which is the most commonly used contraceptive method in South Africa, needs to be used with a condom to prevent the spread of STIs. Therefore, like other methods, any IUD education program would need to highlight the method within a dual protection framework and still promote condoms as the key way to prevent STIs.

If the IUD is to be promoted as part of the contraceptive method mix in South Africa, it will also be necessary to train providers. Training and education among providers will need to focus on up to date information, dispelling myths, and proper insertion and removal techniques. Providers will need to be regularly updated with accurate IUD information and guidelines and checklists, such as recent guides from the Provincial Government of the Western Cape Reproductive Health Programme, are helpful aides in determining who is eligible for an IUD [62, 68]. With a concerted effort from government along with education and training for providers and clients, the IUD could be successfully reintroduced into the contraceptive method mix.

This study had several limitations. This was a sample of women attending clinics in two areas of South Africa. Since the study was focused in the Western and Eastern Capes, the results may not be generalisable to the general South African population but the sites that were chosen were in both urban and rural settings so as to decrease this possibility. Also, 84% of women get their contraception in public sector clinics so the findings should be fairly generalisable to the overall population of women accessing contraceptive services [58]. Given that our participants were women attending family planning and STI care services, it seems logical that their level of knowledge about the IUD might be higher than the general population. However, most of the women that we sampled did not know about the IUD method and none of the study participants was currently using an IUD. It can be argued then that our results are not generalisable to all women in South Africa but may be specific to women attending public sector family planning services. Conversely, these are the women who would potentially become users of the IUD, since these women are seeking or using contraception. Therefore, documenting their level of knowledge and attitudes is important since they are the group of South African women we are most interested in.

In addition, the 32 providers we interviewed may not be have been a representative sample of providers in the Western and Eastern Capes but they were drawn from 12 clinics in 2 provinces. However, these providers have undergone similar family planning training to all other public sector providers.

Our results suggest that the IUD appears to be an acceptable method of contraception to the women we sampled. However, these women were only read a short description about the method before they were asked about their feelings. Although most of the women had positive responses, hypothetical acceptability of the IUD does not necessarily translate into long term use. A woman's decision to choose a particular method is complex and the glowing responses we received may not be an accurate representation of potential usage. Also, after being read the short description of the IUD method, women may have given more positive responses about the method in order to please the interviewers. This would have created a bias within the study.

However, it seems that women felt comfortable with giving negative responses about the IUD since 30% of the women interviewed noted disadvantages about the IUD, 22% said they thought IUDs increased one's chance of acquiring an STI, and 27% said that they would not consider using an IUD.

Lastly, the small sample size of 205 participants may have limited our ability to find statistically significant associations between IUD knowledge and attitudes and various client factors. However, since we were most concerned with description, this was not the main objective of the study. Further research could be conducted with a larger sample size so as to be able to detect potentially significant associations.

This study was meant as a starting point for gathering further information about the possible re-introduction of the IUD into the contraceptive method mix in South Africa and is the first of its kind in South Africa. The research was requested by the Reproductive Health Director of the Provincial Government of the Western Cape so as to inform decisions relating to health services and family planning. This work is a valuable tool for understanding the current knowledge, attitudes, and practices surrounding the IUD among both clients and providers. These results can be used to identify possible interventions for promoting the use of the IUD. With these results, we are now better equipped to plan for a rollout of the IUD and address issues such as the need for provider training and education and awareness campaigns among women seeking contraception. The results of this research will be presented to policy makers in provincial and local health departments, in both the Western and Easter Cape, in the form of a research brief to help educate and raise awareness about the IUD. The specific outputs of the project will also be tailored to meet the needs of Government, and may include technical reports, policy briefs, and/or scientific publications.

Intrauterine contraception is a safe, effective, reliable method that has few risks, many advantages and is particularly suited to a wide range of women. The method itself is cost-effective and is an especially useful addition to the contraceptive method mix where medical resources are scarce. Many women desire to use long acting, non-hormonal methods of contraception to either stop or space births and the IUD can help stop unintended pregnancies which are expensive to both women and society. IUD use is low in South Africa because women are unaware of the method and providers lack skill and training to insert and remove it and lack knowledge to correctly counsel women about the IUD. However, despite these gaps, South African women are interested in learning more about the IUD and possibly using the method. South Africa could easily re-introduce the IUD into the contraceptive method mix, thereby increasing women's choice and adding a valuable and viable option to the contraceptive method mix.

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APPENDICES

Appendix 1 – Client Questionnaire

Client Questionnaire: Increasing the Contraceptive Method Mix in South Africa: Knowledge, Attitudes, and Practices Surrounding the Intrauterine Device (IUD)

Qs. #	Item	Responses	Code for DE
	Interviewer Initials		
	Date of Interview	DD/MM/YYYY	
	Participant ID Number		
	Has the Participant completed the informed consent process?	Yes=1 No=2 ***If No, complete consent before proceeding***	
Demographic & socioeconomic characteristics			
100	How old are you?	Age in years	
101	Are you currently working?	1=Yes 2=No (Proceed to Qs.#103)	
102	What work do you do?	1= Scholar 2= Student 3= Homemaker 4= Unemployed or seeking work 5= Employed 6= Government grant/pension 7=Other, Specify:	
103	What language do you speak at home?	1=isiXhosa 2=isiZulu 3=Afrikaans 4=English 5=Other, Specify:	
104	What is the highest level of schooling/education that you have completed?	0= No formal schooling 1= Grade 1/Sub A 2= Grade 2/Sub 2 3= Grade 3/Std 1 4= Grade 4/Std 2 5= Grade 5/Std 3 6= Grade 6/Std 4 7= Grade 7/Std 5 8= Grade 8/Std 6 9= Grade 9/Std 7 10=Grade 10/Std 8 11=Grade 11/Std 9 12=Grade 12/Std 10 without matric 13=Grade 12/Std 10 with matric 14=Some tertiary (Univ/Technikon/College, degree, diploma, or certificate)	
105	A. How many biological children of your own do you have?	Enter number	
	B. How many boys do you have? How many girls do you have?	Enter number Boys:	
		Girls:	
106	How many children in total are you financially	Enter number	

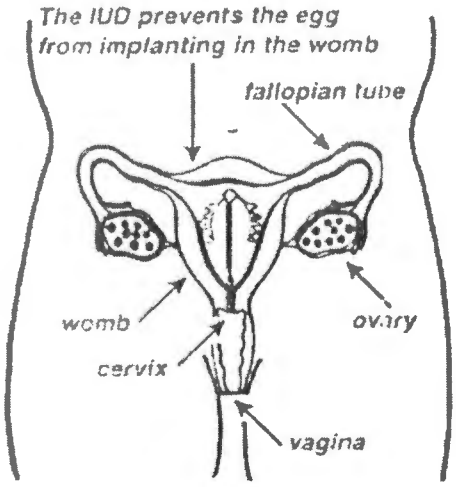
Qs. #	Item	Responses	Code for DE
	responsible for?		
107	Are you currently in a sexual relationship with someone?	1=Yes 2=No **If No, skip to Contraceptive Qs**	
108	A. What is your current relationship status? • Are you married? • Are you staying with your husband now? • If you are not married, are you in a relationship with a man now? • If you are in a relationship, do you see it as a long-term/stable/permanent relationship or short-term/casual relationship?	1=Married cohabiting 2=Married, not cohabiting 3=Single: in stable relationship, cohabiting 4=Single: in stable relationship, not cohabiting 5=Single: casual relationship 6=Single: no relationship now 7=Client chose not to answer 8=Other, specify:	
	B. If long-term/stable, are you staying with your partner now?	1=Yes 2=No 3=Other, specify:	
Contraceptives			
109	Are you <u>currently using</u> any form of contraception/ anything to prevent pregnancy when you have sex?	1=Yes 2=No (Proceed to Qs.# 112)	
110	If yes, which of the following methods of contraception/methods to prevent pregnancy are you (or your partner) <u>using currently</u>? ***(Interviewer read each one)***		
	A Oral contraceptive pill *Women take a pill everyday*	1=Yes 2=No 9=Not Sure	
	B 3-month injectable ('depo') *Women have an injection every 3 months, by a nurse or a doctor which stops them from getting pregnant*	1=Yes 2=No 9=Not Sure	
	C 2-month injectable ('nuristerate') *Women have an injection every 2 months, by a nurse or a doctor which stops them from getting pregnant*	1=Yes 2=No 9=Not Sure	
	D Female sterilization *Women have an operation that stops them from having any more children. In this operation, women have their tubes tied*	1=Yes 2=No 9=Not Sure	
	E Male sterilization *Men have an operation that stops them from having any more children*	1=Yes 2=No 9=Not Sure	
	F Male condom *Men put a rubber sheath on their penis before sexual intercourse*	1=Yes 2=No 9=Not Sure	
	G Female condom *Women put a rubber sheath inside themselves/their vagina before sexual intercourse*	1=Yes 2=No 9=Not Sure	
	H Any other methods that we have not talked about?	1=Yes 2=No *If Yes, specify:*	

Qs. #	Item	Responses	Code for DE
111	Please tell me why you have chosen the method(s) that you are currently using? INTERVIEWER: Probe for all reasons!!! Method #1 (type: _____) duration (Interviewer: For type, enter type # from above) Method #2 (type: _____) duration (Interviewer: For type, enter type # from above)		
112	If no contraception is currently being used, why are you <u>not</u> using any contraception? ***(INTERVIEWER: PROBE FOR ALL REASONS)***		
113	Please tell me all of the methods of contraception you have **<u>ever used</u>** in your life:		
	A — Oral contraceptive pill *Women take a pill everyday*	1=Yes 2=No 9=Not Sure	
	B — 3-month injectable ('depo') *Women have an injection every 3 months, by a nurse or a doctor which stops them from getting pregnant*	1=Yes 2=No 9=Not Sure	
	C — 2-month injectable ('nuristerate') *Women have an injection every 2 months, by a nurse or a doctor which stops them from getting pregnant*	1=Yes 2=No 9=Not Sure	
	D — Male condom *Men put a rubber sheath on their penis before sexual intercourse*	1=Yes 2=No 9=Not Sure	
	E — Female condom *Women put a rubber sheath inside themselves/their vagina before sexual intercourse*	1=Yes 2=No 9=Not Sure	
	F — Emergency Contraception *Also known as the morning after pill. Women can take these pills up to 72 hours after unprotected intercourse to prevent pregnancy*	1=Yes 2=No 9=Not Sure	
	G — IUD (Intrauterine Device) *Women have an IUD (copper T or Loop) inserted by a health care provider and it prevents pregnancy*	1=Yes 2=No 9=Not Sure	
	H — Any other methods that we have not talked about?	1=Yes 2=No 3= Never have used any method of contraception *If Yes, specify:*	
114	Have you ever heard of Emergency Contraception (EC / Morning after pill) before?	1=Yes 2=No (Proceed to Qs.# 115) 3=Not sure	

Qs. #	Item	Responses	Code for DE
	Have you ever used EC?	1=Yes 2=No 3=Not sure	
115	In the last 12 months have you had sex without using any method of contraception at all?	1=Yes 2=No (Proceed to Qs.# 117) 7=INAP (no sex in 12 months) –Proceed to Qs.# 124	
116	If so, why? Why did you not use any contraception?		
117	In the last 12 months have you had sex without using a condom?	Yes=1 No=0 (Proceed to Qs.# 118) INAP (no sex in 12 months)=7 – Proceed to Qs.# 124	
118	If so, why? Why did you not use a condom?		
119	In the last 12 months, have you ever used emergency contraception (the 'morning after pill')?	Yes=1 No=0 Never heard of emergency contraception=2 INAP (no sex in 12 months)=7 Don't know=9	
120	In the last 12 months, have you ever had an abortion provided by a doctor or nurse?	1=Yes 2=No 9=Not Sure	
121	In the last 12 months, have you ever had an abortion provided by someone who was not a doctor or nurse?	1=Yes 2=No 9=Not Sure	
Sexual Activity and Pregnancies			
122	How many different sexual partners have you had in the last 12 months?	Enter number	
123	In the past month, about how many times have you had sex?	1=About 1 time 2=About 2-10 times (about 1 time per week) 3=About 11-20 times 4=More than 20-30 times (about 1 time per day)	
124	A. How many pregnancies have you had in total?	Enter Number *(if answer is 0, proceed to Qs.# 126)*	
	B. How old were you when you first got pregnant?	Enter number	
125	When was your last pregnancy?	Enter months or years	
126	Do you plan to have children/more children in the future?	1=Yes 2=No (Proceed to Qs.# 128) 9=Not Sure	
127	If yes, when?		
128	The last time you became pregnant, did you want to become pregnant then, did you want to wait until later, or did you want no (more) children at all?	0=Never been pregnant 1=Then 2=Later 3=No (more) 4=Don't know	
129	Have you ever had an unplanned pregnancy?	0=Never been pregnant 1=Yes 2=No	
130	How would you feel if you became pregnant in the next few months? (read all options)	1=Very happy 2=Somewhat happy 3=Mixed feelings 4=Somewhat sad 5=Very sad/upset	

Qs. #	Item	Responses	Code for DE
		6=Don't know	
131	How would your partner feel if you became pregnant in the next few months? (read all options)	1=Very happy 2=Somewhat happy 3=Mixed feelings 4=Somewhat sad 5=Very sad/upset 6=Don't know 7=No partner	
Client Questions			
1.	Have you ever heard of the intrauterine device, which is also called the IUD or the Loop, and which is something that is inserted by a nurse or doctor and sits in your womb to prevent pregnancy?	1=Yes (if yes, proceed to next question) 2=No (if no, proceed to Qs.#21 - Explanation of IUD) 3=Not sure	
2.	What do you think the IUD is? Can you please tell me about it?		
3.	Where did you first hear about the IUD?	1=Health service provider at this facility 2=Health service provider at another facility 3=Pamphlet/poster at health facility 4=GP/Private doctor 5=Newspaper/radio/television 6=Husband/partner 7=Mother 8=Other family member 9=Friend 10=School 11=Church 12=Other – specify 13=Unsure	
4.	Has a health care provider ever discussed the possibility of using an IUD with you?	1=Yes 2=No 3=Don't think so/ Not sure	
5.	Has a health care provider ever suggested the IUD as an appropriate method of pregnancy prevention for you?	1=Yes 2=No 3=Don't think so/ Not sure	
6.	Before this interview, did you hear or see anything about IUDs while you were here today?	1=Yes 2=No 3=Can't remember /Unsure	
7.	Do you think you could get an IUD at this clinic if you wanted one?	1=Yes 2=No 3=Not sure	
8.	Do you know how an IUD works?	1=Yes (if yes, explain)_____ _____ _____ _____ _____ 2=No 3=I think so 4=Not really	
9.	How long can a woman keep an IUD in for?	1=1 month 2=1-3 months	

Qs. #	Item	Responses	Code for DE
		3=1 year 4=1-5 years 5=10 years	
10	Have you ever used an IUD?	1=Yes (Go on to next question) 2=No (Go to Qs.# 21-Explanation of IUD)	
11	When did you last use an IUD?	1=Using currently 2=Used within the last year 3=Used within last 5 years 4=Used more than 5 years ago	
12	How long have you been using/did you use the IUD for? How long was the IUD inserted for? (Answer in number of months)		
13	Where was your IUD inserted?	1=At a clinic in South Africa 2=At a private doctor in South Africa 3=In another country	
14	When your IUD was inserted, had you requested it or did a health care provider suggest the method?	1=Client requested method 2=Health care provider suggested method 3=Do not remember / Unsure	
15	When you started using the IUD, were you given information about this method?	1=Yes (Proceed to next question) 2=No (Proceed to Qs.# 17) 3=Do not remember/ Unsure	
16	What information were you given? (probe)		
17	Do you know which type of IUD you use/used?	1=Yes (if yes, please describe) _____ _____ _____ 2=Don't know	
18	What kind of experience did you have with the IUD? Was your experience...(read all choices)	1=Very good 2=Somewhat good 3=Somewhat bad 4=Very bad	
19	Why did you start using the IUD? (probe)		
20	If you have stopped using the IUD, why did you stop?	1=Wanted to get pregnant 2=Experienced side effects 3=No longer wanted it 4=Partner did not like it 5=Other (specify)_____ _____ _____ _____	
21	**Explanation of IUD**: Just to make sure we are all on the same meaning of the IUD, I would like to now give you a short summary of the IUD method. IUD stands for intrauterine device. It is a small device which is usually made of plastic and copper and which is inserted into a woman's womb (uterus) to prevent pregnancy. A trained provider uses a special tube to insert an IUD into the womb. When the IUD is in		

Qs. #	Item	Responses	Code for DE
	place, it sits in the womb and short strings hang out of the cervix. These strings do not irritate the woman but rather they help the woman to make sure that the IUD is still in place in the womb. Also, the strings make it possible for health providers to remove the IUD at a later time. It is only possible for a health provider to remove an IUD. Women cannot remove them on their own. The IUD works by making it harder for sperm to fertilize an egg and by making it hard for a fertilized egg to implant in the womb. The IUD is 99% effective at preventing pregnancy and some IUDs can stay in place and prevent pregnancy for up to ten years. The IUD is a very good method for women who want to prevent pregnancy for a number of years. Once the IUD is in place, it does not require routine maintenance to work correctly. Once the IUD is removed, it is possible to become pregnant again very quickly. Some common side effects of the IUD are pain or discomfort upon insertion, heavier periods and cramps. IUDs do not offer any protection from HIV and other STIs. Although IUDs are used a great deal in other countries around the world, they are not used very frequently in South Africa.  		
22	What do you think about this method? (Probe for whether respondent thinks the method is generally good or generally bad, any concerns the respondent may have about the IUD and why. Record exact response!)		
23	Do you see any advantages to using this method?	1=Yes (Proceed to Qs.# 24) 2=No (Proceed to Qs.# 25) 3=Maybe (Proceed to Qs.#24)	
24	What do you think the advantages are?	1=It is not yet familiar to me/I don't know enough 2=It is a safe method 3=It is an effective method/Very good at preventing pregnancy 4=It can be used for a long time 5=Once inserted, the IUD does not require routine maintenance 6=The side effects are not serious 7=Once the IUD is removed, fertility quickly returns 8=Partner does not have to know about it 9=It cannot be felt during intercourse 10=Men will approve of this method 11=Other	
25	Would you see any problems with this method?	1=Yes (Proceed to Qs.# 26) 2=No (Proceed to Qs.# 27) 3=Maybe (Proceed to Qs.#26)	
26	If you see problems, what are they? (Probe and write details)	1=It is not yet familiar to me/I don't know enough 2=It might cause health problems	

Qs. #	Item	Responses	Code for DE
		3=It will harm the baby if it does not work 4=Women might not be able to have babies properly later 5=It is abortion 6=It is immoral/against my religion 7=It will cause women to get more STDs and maybe HIV 8=Men may not approve of the method 9=It will make women promiscuous/women will misbehave 10=Women will become lazy and forget they have an IUD if they do not have to worry about contraception for a long time 11=My partner won't allow me to use it 12=It could be painful 13=It could move to another place 14=Don't know / Unsure 15=Other / Specify _____ _____ _____	
27	Based on what you know, do you think you would consider using an IUD?	1=Yes 2=No 3=Not sure/maybe	
28	Why or why not? (Record response)		
29	Do you think that IUDs are safe to use?	1=Yes 2=No 3=Don't know/ Unsure	
30	Do you think that IUDs are a good method to use for preventing pregnancy?	1=Yes 2=No 3=Don't know/ Unsure	
31	Do you think the IUD is an easier or harder method to use than the.... (list all that apply)	A. Pill / oral contraceptives, why? 1. Easier 2. Harder 3. Not sure _____ _____ _____ B. Injectable, why? 1. Easier 2. Harder 3. Not sure _____ _____ _____ C. Male condom, why? 1. Easier 2. Harder 3. Not sure _____ _____ _____ D. Female condom, why? 1. Easier 2. Harder 3. Not sure	

Qs. #	Item	Responses	Code for DE
		_____ _____ _____ E. Female sterilization, why? 1. Easier 2. Harder 3. Not sure _____ _____ _____	
32.	Do you think that the following women could use an IUD?	A. A teenage woman 1. Yes 2. No 3. Maybe/ Unsure B. A woman who has never had children 1. Yes 2. No 3. Maybe/ Unsure C. A woman who has had a baby 1. Yes 2. No 3. Maybe/ Unsure D. A woman who is breastfeeding 1. Yes 2. No 3. Maybe/ Unsure E. A woman who has an STI currently 1. Yes 2. No 3. Maybe/ Unsure F. A woman who has had an STI in the past 1. Yes 2. No 3. Maybe/ Unsure G. A woman who has AIDS 1. Yes 2. No 3. Maybe/ Unsure	
33.	Do you think that IUDs cause problems for the women who use them?	1=Yes, explain: _____ _____ _____ _____ 2=No 3=Don't know/ Unsure	
34.	Do you think that IUDs cause infertility / a woman to be unable to get pregnant after using the method?	1=Yes 2=No 3=Don't know/ Unsure	
35.	Do you think that using an IUD increases a woman's chance of getting an STI?	1=Yes 2=No 3=Don't know/ Unsure	
36.	Do you think that using an IUD protects against STIs?	1=Yes 2=No 3=Don't know/ Unsure	
37.	If a woman was using an IUD, do you think that her sexual partner (your partner) would think it was an acceptable method?	1=Yes – why? _____ _____ _____	

Qs. #	Item	Responses	Code for DE
		2=No – Why? _____ _____ _____ 3=Unsure	
38	Do you think that the woman can feel the IUD during intercourse?	1=Yes 2=No 3=Maybe/Unsure	
39	Do you think that the man can feel his partners' IUD during intercourse?	1=Yes 2=No 3=Maybe/Unsure	
40	Do you know anyone who is using or has used an IUD in the past?	1=Yes (Proceed to Qs.# 41) 2=No (Proceed to Qs.# 43) 3=Maybe/Unsure (Proceed to Qs.# 43)	
41	If yes, who? (Probe for relationship)		
42	What kind of experience did that person have using the IUD?	1=Very good 2=Somewhat good 3=Somewhat bad 4=Very bad	
43	Do you think that most people know about IUDs?	1=Yes 2=No 3=Unsure	
44	Do you think that more people would be interested in using the IUD if they had more information about it and it was offered more regularly at family planning services?	1=Yes 2=No 3=Unsure	
45	Would you consider using the IUD if it was offered to you?	1=Yes 2=No 3=Unsure/Maybe	
46	Is there anything else you would like to know about the IUD?		

Thank you for your time.

Appendix 2 – Provider Questionnaire

Provider Questionnaire: Increasing the Contraceptive Method Mix in South Africa: Knowledge, Attitudes, and Practices Surrounding the Intrauterine Device (IUD)

Qs. #	Item	Responses	Code for DE
	Interviewer Initials		
	Date of Interview		
	Participant ID Number		
	Has the Participant completed the informed consent process?		
Knowledge			
1.	Please name all of the methods of family planning you suggest to clients at this clinic.	1=The pill 2=The IUD 3=3 month injection 4=2 month injection 5=Male condom 6=Female condom 7=Spermicide 8=Diaphragm 9=Female sterilization 10=Male sterilization 11=Rhythm, calendar method 12=Withdrawal 13=Herbs 14=Other (specify) _____ _____	
2.	Have you ever heard of the IUD?	1=Yes (Proceed to Qs.# 3) 2=No (Proceed to explanation of the IUD and read. Then go to Qs.# 36) 3=Maybe / Unsure (Proceed to explanation of IUD and read. Then go to Qs.# 36).	
3.	Please tell me what you know about the IUD. (probe)		
4.	A. Do you know about different types of IUDs?	1=Yes (Proceed to Qs.# 4B) 2=No (Proceed to Qs.# 4E)	
	B. If yes, what types? (probe for types)	1. 2.	
	C. How does the first type that you mentioned work to prevent pregnancy?	1=It creates a spermicidal endometrium 2=It inhibits sperm transport, mobility and viability 3=It contains hormones that make getting pregnant difficult 4=As an abortifacient 5=Unsure 6= Other (explain) _____ _____ _____	

Qs. #	Item	Responses	Code for DE
	D. How does the second type that you mentioned work to prevent pregnancy? (list all that are said)	1=It creates a spermicidal endometrium 2=It inhibits sperm transport, mobility and viability 3=It contains hormones that make getting pregnant difficult 4=As an abortifacient 5=Unsure 6= Other (explain) _____ _____ _____	
	E. (Only read if the provider did not know about different types of IUDs) How does an IUD work to prevent pregnancy? (list all that are said)	1=It creates a spermicidal endometrium 2=It inhibits sperm transport, mobility and viability 3=It contains hormones that make getting pregnant difficult 4=As an abortifacient 5=Unsure 6= Other (explain) _____ _____ _____	
5.	***If respondent knows about different types of IUDs, ask this question for each type, if not, ask it generally!***		
	A. How long can an IUD be used for / kept in for? (type 1)	1=A few months 2=A year 3=1-5 years 4=10 years 5= Unsure 6= Other (specify)	
	B. How long can an IUD be used for / kept in for? (type 2)	1=A few months 2=A year 3=1-5 years 4=10 years 5= Unsure 6= Other (specify)	
6.	How well do you think the IUD works to prevent pregnancy? (read option)	1=Almost 100% 2=Over 75%, but less than 95% 3=75% 4=50%-74% 5=25%-49% 6=Less than 25% 7=Unsure	
7.	Do you think the IUD is better than or worse than the following methods at preventing pregnancy?	A. Pill / oral contraceptives 1. Better 2. Worse 3. Not sure	
		B. Injectable 1. Better 2. Worse 3. Not sure	
		C. Male condom 1. Better 2. Worse 3. Not sure	
		D. Female condom 1. Better 2. Worse 3. Not sure	
		E. Spermicide 1. Better 2. Worse 3. Not sure	

Qs. #	Item	Responses	Code for DE
		F. Diaphragm 1. Better 2. Worse 3. Not sure	
		G. Female sterilization 1. Better 2. Worse 3. Not sure	
		H. Male sterilization 1. Better 2. Worse 3. Not sure	
		I. Rhythm, calendar method 1. Better 2. Worse 3. Not sure	
		J. Withdrawal 1. Better 2. Worse 3. Not sure	
8.	Do you think the IUD is safer or less safe than the following methods?	A. Pill / oral contraceptives a. Safer b. Less safe c. Unsure	
		B. Injectable 1. Safer 2. Less safe 3. Unsure	
		C. Male condom 1. Safer 2. Less safe 3. Unsure	
		D. Female condom 1. Safer 2. Less safe 3. Unsure	
		E. Spermicide 1. Safer 2. Less safe 3. Unsure	
		F. Diaphragm 1. Safer 2. Less safe 3. Unsure	
		G. Female sterilization 1. Safer 2. Less safe 3. Unsure	
		H. Male sterilization 1. Safer 2. Less safe 3. Unsure	
9.	Are there any medical reasons why women shouldn't use the IUD?	1=Yes (Proceed to Qs.# 10) 2=No (Proceed to Qs.# 11) 3=Unsure (Proceed to Qs.# 11)	
10	What are those reasons? (list all that are mentioned)	1=Pregnancy 2=Having PID 3=Having PID within the last three months 4=Having an active STI 5=Having an STI within the last three months 6=Unexplained and/or abnormal vaginal bleeding 7=A severely distorted uterine cavity 8=Cervical, endometrial, or ovarian cancer that is awaiting treatment 9=Allergy to any component of the IUD (ie. Copper)	

Qs. #	Item	Responses	Code for DE
		10=Pelvic tuberculosis 11=Unsure 12=Other (specify)	
11	Are there any side effects associated with IUD use?	1=Yes (Proceed to Qs.# 12) 2=No (Proceed to Qs.# 13) 3=Unsure ((Proceed to Qs.# 13)	
12	What are the common side effects?	1=Nausea 2=Vomiting 3=Headaches 4=Cramping / abdominal pain 5=Change in menstrual cycle 6=More menstrual blood 7=Less menstrual blood 8=Pain during insertion 9=Breast tenderness 10=Depression 11= Pelvic Inflammatory Disease (PID) 12=Unsure 13= Other (specify) _____ _____	
13	Do you think there are any risks or problems associated with IUD use for the woman?	1=Yes (Proceed to Qs.# 14) 2=No (Proceed to Qs.# 15) 3=Not sure (Proceed to Qs.# 15)	
14	What are the risks?	1=Developing PID 2=Infertility 3=Ectopic pregnancy 4=Developing STIs 5=Uterine perforation 6=Other (specify) _____ _____	
15	Can the IUD be used as a form of emergency contraception after unprotected intercourse?	1=Yes 2=No 3=Unsure	
16	Do IUDs offer any protection from STIs?	1=Yes 2=No 3=Unsure	
17	Do IUDs increase ones risk of getting an STI?	1=Yes 2=No 3=Unsure	
18	Can the IUD be used by a woman who has never given birth before?	1=Yes 2=No 3=Unsure	
19	Do you feel that you have received sufficient training/ have sufficient knowledge about the IUD with respect to	A. Length of use 1. Yes 2. No	
		B. How it works to prevent pregnancy d. Yes e. No	
		C. Medical reasons why certain women shouldn't use it 1. Yes 2. No	
		D. Side effects 1. Yes 2. No	
		E. Types of IUDs 1. Yes 2. No	
		F. Safety 1. Yes 2. No	

Qs. #	Item	Responses	Code for DE
		G. Efficacy / How well is works 1. Yes 2. No	
		H. How to insert it 1. Yes 2. No	
		I. How to remove it 1. Yes 2. No	
		J. Other (specify) _____ _____	
Practices			
20	Does this clinic offer the IUD?	1=Yes 2=No 3=Unsure	
21	Are there guidelines for IUD usage in this clinic?	1=Yes 2=No 3=Unsure	
22	Have you ever counselled a woman about the IUD method?	1=Yes 2=No 3=Unsure	
23	Have you ever suggested that a client use an IUD?	1=Yes (Proceed to Qs.# 24) 2=No (Proceed to Qs.#25) 3=Unsure	
24	How often do you suggest the IUD to clients?	1=At least once a week 2=At least once a month 3=At least once a year 4=Never	
25	Have you ever been trained to insert the IUD?	1=Yes 2=No	
26	Have you ever inserted an IUD before?	1=Yes (Proceed to Qs.# 27) 2=No (Proceed to Qs.# 28)	
27	If yes, when did you last insert an IUD?	1=This week 2=This month 3=Within the last six months 4=Within the last year 5=More than a year ago	
28	Have you ever referred a woman to another site for an IUD?	1=Yes (Proceed to Qs.# 29) 2=No (Proceed to Qs.# 30) 3=Unsure (Proceed to Qs.# 30)	
29	Where or to whom did you refer her?	1=Another provider in this facility 2=Another facility 3=GP/Private doctor 4=Other (specify) _____ _____	
30	If you were to insert an IUD, how long after insertion would you tell a client to come back for their first check-up?	1=One week 2=Three to six weeks 3=Six months 4=One year 5=Other (specify) _____ _____ _____	
31	If a client has an IUD, how often should they return for check-ups?	1=Monthly 2=Every six months 3=Yearly	

Qs. #	Item	Responses	Code for DE
		4=Other	
32	If you had a client that was starting the IUD method, what information would you give to her about the method?	1=How long IUD can be used for 2=Safety 3=Efficacy -- how well it works 4=Side effects -- such as cramps or heavier periods 5=When to return for follow up visits 6=Preventing STIs 7=How to make sure the IUD is in place 8=Other (specify) _____ _____ _____ _____ _____	
33	Who is the IUD appropriate for? (list all that apply)	1=Women who desire to have more children in the future 2=Women who have never had children before 3=Women who are done having children 4=Women who are married 5=Women who are not married 6=Teenage women 7=Women who are breastfeeding 8=Women who are HIV-positive 9=Women with a history of STIs 10=Women with no history of STIs 11=Other (specify) _____ _____	
34	Who is the IUD NOT appropriate for? (Circle all the are mentioned)	1=Women who desire to have more children in the future 2=Women who have never had children before 3=Women who are done having children 4=Women who are married 5=Women who are not married 6=Women who are breastfeeding 7=Women who are HIV-positive 8=Women with a history of STIs 9=Women with no history of STIs 10=Teenage women 11=Other (specify) _____ _____	

Qs. #	Item	Responses	Code for DE
35	**ONLY READ THIS EXPLANATION TO PROVIDERS WHO DON'T KNOW ABOUT THE IUD!!!** **Explanation of IUD**: Just to make sure we are all on the same meaning of the IUD, I would like to now give you a short summary of the IUD method. IUD stands for intrauterine device. It is a small device which is usually made of plastic and copper and which is inserted into a woman's womb (uterus) to prevent pregnancy. A trained provider uses a special tube to insert an IUD into the womb. When the IUD is in place, it sits in the womb and short strings hang out of the cervix. The strings help the woman to make sure that the IUD is still in place in the womb and make it possible for health providers to remove the IUD at a later time. The IUD works by making it harder for sperm to fertilize an egg and by making it hard for a fertilized egg to implant in the womb. The IUD is 99% effective at preventing pregnancy and some IUDs can stay in place and prevent pregnancy for up to ten years. The IUD is a very good method for women who want to prevent pregnancy for a number of years. Once the IUD is in place, it does not require routine maintenance to work correctly. Once the IUD is removed, it is possible to become pregnant again very quickly. Some common side effects of the IUD are pain or discomfort upon insertion, heavier periods and cramps. IUDs do not offer any protection from HIV and other STIs. 		
Attitudes About the IUD			
36	Do you feel like you know enough about the IUD to counsel women about this method?	1=Yes 2=No 3=Maybe/Unsure	
37	Do you feel like you know enough about the IUD to be able to insert one?	1=Yes 2=No 3=Need more training 4=Unsure	
38	What do you see as the advantages of IUD use? (Do not read. Probe and record all options mentioned. If option not supplied in list, record under Other)	1=Reduce unplanned/unwanted pregnancy 2=Reduce teenage pregnancy 3=Can be used as a form of emergency contraception (EC) 4=Expand's women's choice 5=Effective 6=Safe 7=Private 8=Can be used by all women 9=Can be used by HIV-positive women 10=Cost-effective 11=Quick return to fertility upon removal 12=The copper IUD is a non-hormonal method 13=Don't see any advantages 14=Unsure 15=Other (specify)	

Qs. #	Item	Responses	Code for DE
		_____ _____	
39	What do you see as the disadvantages of the IUD? (Do not read. Probe and record all options mentioned. If option not supplied in list, record under Other)	1=Doesn't protect against STIs / HIV 2=It is an abortifacient 3=It increases the risk of developing PID 4=It has side effects 5=Women may forget they have it 6=Initial costs for the device are high 7=It requires training for insertion 8=Don't see any disadvantages 9=Unsure 10=Other (specify) _____ _____ _____ _____	
40	As a health care provider, would you personally recommend the IUD to ...	A woman who desires to have more children in the future? 1. Yes 2. No 3. Unsure	
		An unmarried woman? 1. Yes 2. No 3. Unsure	
		A woman who has never had a child? 1. Yes 2. No 3. Unsure	
		A woman who is HIV-positive? 1. Yes 2. No 3. Unsure	
		A woman who has AIDS? 1. Yes 2. No 3. Unsure	
		A woman who has had an STI in the past? 1. Yes 2. No 3. Unsure	
		A woman who has a current STI? 1. Yes 2. No 3. Unsure	
		A woman who doesn't use condoms? 1. Yes 2. No 3. Unsure	
		A teenage woman? f. Yes g. No h. Unsure	
41	Is there a minimum age below which you yourself would not provide an IUD to a woman? In other words, is there an age that you consider too young for a girl or woman to be given an IUD? (list age in years)		
42	Do you have any concerns about the IUD? Explain. (Do not read. Probe and record all options mentioned. If option not supplied in list, record under Other)	1=Concern regarding medical safety (including risk of PID) 2=Risk of infertility 3=Concerns about side effects (such as excessive bleeding and uterine cramping) 4=Offers no protection from STIs and HIV 5=Concern regarding efficacy 6=Cost of the method	

Qs. #	Item	Responses	Code for DE
		7=Requires trained provider to insert 8=Other (specify) _____ _____ _____ _____ _____	
Provider Perceptions			
43	What do you see as the three main obstacles or barriers to clients' access to and use of the IUD?	1=Lack of knowledge on the part of the provider 2=Lack of knowledge on the part of the potential user 3=Lack of trained providers to insert or remove the device 4=Moral/religious worries of potential users 5=Moral/religious worries of potential providers 6=Providers belief that IUD is an abortifacient 7=IUD is never available at this facility 8=IUD is often out of stock 9=IUD does not offer protection from STIs 10=Many myths and misperceptions 11=Other (specify) _____ _____ _____ _____	
44	Do you think that women would use the IUD method if they knew about it? Why or why not?		
45	Do you think that women's partners would support their use of the IUD as a method for preventing pregnancy?	1=Yes 2=No 3=Unsure/Maybe 4=Other (specify) _____ _____	
46	Why do you think use of the IUD is low in South Africa?		
47	Do you think the IUD is a good family planning method for South Africa? Why or why not? Explain.	1=Yes, _____ _____ 2=No, _____ _____ 3=Maybe/unsure	
48	Do you think that greater IUD use should be promoted in South Africa? Why or why not?	1=Yes, _____ _____ 2=No,	

Qs. #	Item	Responses	Code for DE
		_____ _____	
General Information / Moving Forward			
49	Do you think you need to know more about the IUD in order to counsel women on this method?	1=Yes 2=No	
50	What aspect of the IUD would you like to know more about? (Record response)		

Thank you for your time.

Appendix 3A – Participant consent form

University of Cape Town
Women's Health Research Unit
School of Public Health and Family Medicine

PARTICIPANT CONSENT FORM

Increasing the Contraceptive Method Mix in South Africa: Knowledge, Attitudes, and Practices Surrounding the Intrauterine Device (IUD)

We are from the Women's Health Research Unit at the University of Cape Town and the Department of Obstetrics & Gynaecology at Walter Sisulu University. We are gathering some information on what women know about a contraceptive method called the intrauterine device, also known as the IUD. Your participation in this interview is completely voluntary. Whether or not you decide to participate in this interview will not affect your health care at this or any other clinic now or in the future.

If you decide to participate:

- This will involve you answering short questions for about 20 minutes.
- All of the information that you provide will be completely confidential and will only be viewed and used by the researchers on this project. The health care providers at this clinic will not see this information.
- We will record the information on a form so that we know what you have said, but we will never record your name or anything that could be used to identify you anywhere on the study form so your participation is completely anonymous.
- You have the right to decide not to participate in the study, to refuse to answer any question, or to withdraw from the study at any time without any penalty.
- All information gathered will be identified only by a clinic and unique participant number and kept in confidential files. No individual identifying information will be obtained and no identifying information will be disclosed in reports, publications, or presentations.
- The information you provide may help us to improve reproductive health services for all women in the Western Cape Province.
- If there is anything that is unclear or if you need further information, please ask us and we will provide it. Do you have any questions?

Participant Volunteer Declaration:

I have read the above information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a subject in this study and understand that I have the right to withdraw from the study at any time

without in any way affecting my medical care at this or any other clinic now or in the future.

Please indicate your consent with your name.

_____

Thank you.

Appendix 3B – Provider consent form

University of Cape Town
Women's Health Research Unit
School of Public Health and Family Medicine

PROVIDER CONSENT FORM

Increasing the Contraceptive Method Mix in South Africa: Knowledge, Attitudes, and Practices Surrounding the Intrauterine Device (IUD)

We are from the Women's Health Research Unit at the University of Cape Town and the Department of Obstetrics & Gynaecology at Walter Sisulu University. We are gathering some information on what women know about a contraceptive method called the intrauterine device, also known as the IUD. Specifically we are going to ask you for information about the services that you provide, your experience with the IUD, and your experiences as a provider of health care services in this clinic. Your participation in this interview is completely voluntary.

If you decide to participate:

- This will involve you answering short questions for about 20 minutes.
- All of the information that you provide will be completely confidential and will only be viewed and used by the researchers on this project.
- We will record the information you give us on a form so that we know what you have said, but we will never record your name or anything that could be used to identify you anywhere on the study form. Your participation is completely anonymous.
- You have the right to decide not to participate in the study, to refuse to answer any question, or to withdraw from the study at any time without any penalty.
- All information gathered will be identified only by a clinic and unique participant number and kept in confidential files. No individual identifying information will be obtained and no identifying information will be disclosed in reports, publications, or presentations.
- The information you provide may help us to improve reproductive health services for all women in the Western Cape Province.
- If there is anything that is unclear or if you need further information, please ask us and we will provide it. Do you have any questions?

Provider declaration

- I have understood that the purpose of the study is to gain information on what women know about the intrauterine device, as well as the contraceptive services that I provide, my experiences as a provider of the IUD, and my experiences as a provider of health care services in this clinic.

- I have read the above information. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate in this study and understand that I have the right to withdraw from the study at any time without penalty.

Please indicate your consent with your signature.

_____

Signature of Volunteer Date

_____

Signature of Investigator Date

Thank you.

Appendix 4 – Project Timeline

Project timeline of activities over 7 months.

	Month						
	1	2	3	4	5	6	7
Start-up							
Finalise study instruments	XX						
Institutional approvals *	XX						
Cape Town fieldwork							
Site set-up	XX						
Client interviews		XXXX	XX				
Provider interviews		XX	X				
Umtata fieldwork							
Site set-up				XX			
Client interviews				XX	XXXX		
Provider interviews				X	XX		
Data analysis						XXXX	
Reporting							XXXX

Appendix 5 – Tables of Results

Table 5.1: Total number of clinics and participants

A total of 205 women from 4 clinics participated in this survey. The number of women surveyed at each clinic is presented in Table 5.1.

Table 5.1. Number of participants per clinic

Province	Facility Name	Number of participants per facility, n (%)	Number of participants Total
Western Cape	Langa Clinic	52 (25.4)	n=205
	Weltevreden Clinic	53 (25.9)	
Eastern Cape	Mhlakulo Clinic	50 (24.4)	
	Mbekweni Clinic	50 (24.4)	

Table 5.2: Client Socio-demographic characteristics

The socio-demographic characteristics of participants in the Western and Eastern Cape and at each of the four clinics surveyed are summarized in Table 5.2. The mean age of women participating in this survey was 25.9 years and the mean age of participants was a bit older in the Western Cape (27.8) as opposed to the Eastern Cape (24.0). Most of the participants (50.7%) were between the ages of 20 and 29 years. Most participants (82.0%) had at least some secondary school education. Only about half of the participants (42.1%) said that they were employed at the time of the interview and about one-quarter of participants were scholars (24.9%). Almost 100% (99.5%) of participants spoke isiXhosa as their main language.

Table 5.2. Socio-demographic characteristics of clients

Characteristic	*Western Cape*		*W.C. Total n=105*	*Eastern Cape*		*E.C. Total n=100*	*Total n=205*
	Langa Clinic n=52	*Weltevreden Clinic n=53*		*Mhlakulo Clinic n=50*	*Mbekweni Clinic n=50*		
Mean age in years (SD)	28.9 (9.1)	26.6 (6.7)	27.8 (8.0)	24.8 (8.3)	23.1 (6.7)	24.0 (7.6)	25.9 (8.0)
Age categories, n (%)							
15-19	7 (13.5)	8 (15.1)	15 (14.3)	16 (32.0)	16 (32.0)	32 (32.0)	47 (22.9)
20-29	28 (53.9)	28 (52.8)	56 (53.3)	21 (42.0)	27 (54.0)	48 (48.0)	104 (50.7)
30-39	8 (15.4)	14 (26.4)	22 (21.0)	9 (18.0)	3 (6.0)	12 (12.0)	34 (16.6)
40-49	9 (17.3)	3 (5.7)	12 (11.4)	4 (8.0)	4 (8.0)	8 (8.0)	20 (9.8)
Employment status-currently working, n (%)	23 (44.2)	24 (45.3)	47 (44.8)	20 (40.0)	18 (38.3)	38 (39.2)	85 (42.1)
Type of work, n (%)							
Scholar	14 (26.9)	7 (13.2)	21 (20.0)	14 (28.0)	16 (32.0)	30.0 (30.0)	51 (24.9)
Student	0	0	0	1 (2.0)	1 (2.0)	2 (2.0)	2 (1.0)
Homemaker	4 (7.7)	0	4 (3.8)	0	9 (18.0)	9 (9.0)	13 (6.3)
Unemployed or seeking work	22 (42.3)	0	22 (20.1)	0	24 (48.0)	24 (24.0)	46 (22.4)
Employed	9 (17.3)	10 (18.9)	19 (18.1)	3 (6.0)	0	3 (3.0)	22 (10.7)
Government grant/pension	1 (1.9)	0	1 (1.0)	0	0	0	1 (0.5)
Other	0	6 (11.3)	6 (5.7)	2 (4.0)	0	2 (2.0)	8 (3.9)
Main language spoken, n (%)							
Xhosa	52 (100.0)	53 (100.0)	105 (100.0)	49 (98.0)	50 (100.0)	99 (99.0)	204 (99.5)
Zulu	0	0	0	1 (2.0)	0	1 (1.0)	1 (0.5)
Level of education, n (%)							
No formal schooling	0	0	0	0	0	0	0
Grade 1-Grade 7 (primary)	6 (11.5)	8 (15.1)	14 (13.3)	2 (4.0)	10 (20.0)	12 (12.0)	26 (12.7)
Grade 8-Grade 12 (secondary)	41 (78.9)	41 (77.4)	82 (78.1)	46 (92.0)	40 (80.0)	86 (86.0)	168 (82.0)
Tertiary	5 (9.62)	4 (7.6)	9 (8.6)	2 (4.0)	0	2 (2.0)	11 (5.4)

Table 5.3: Sexual and Reproductive characteristics of Clients

The sexual and reproductive characteristics of clients are presented in table 5.3. The mean number of biological children was 1.9 with the average being higher in the Eastern Cape with 2.2 children compared with 1.7 in the Western Cape. Most women reported that they were in a current sexual relationship (95.1%) and just more than half (52.7%) stated that they were single but in a stable non-cohabitating relationship. Only 18% reported being married and cohabitating. The mean number of sexual partners within the last year was 1.2 with the overwhelming majority (94.6%) reporting 0 to2 partners in the last year. Of those reporting sexual intercourse within the last month, 60% said they had sex 2 to 10 times (about once a week) in the last month with women in the Western Cape more frequently reporting 2 to 10 sexual encounters (73.3%) as compared to women from the Eastern Cape (46.0%). The mean age at first pregnancy was 19.3 years with the age at first pregnancy being older for women in the Western Cape (20.1) as compared to the Eastern Cape (18.4). The mean number of pregnancies was 2.1 with women in the Western Cape having a lower mean number of pregnancies (1.9) than women in the Eastern Cape (2.4). Also, the mean number of time since last pregnancy was 3.8 years for the whole sample but again, the Western Cape participants reported a larger space (4.6 years) than women from the Eastern Cape (2.9 years). Fifty-seven percent of participants reported having had an unplanned pregnancy (with the amount being similar between the Western and Eastern Capes – 55.2% vs. 59.0%) and 34.7% reported that their pregnancy was mistimed while another 16.1% said their most recent pregnancies were not wanted at all. In addition, although 45.9% said they planned to have children in the future, 78% said that they would be somewhat sad or very sad if they became pregnant within the next few months. Participants were also asked about how they believed their partners would feel about a pregnancy in the next few months. Women were split in their responses and 34.1% said that their partners would be happy or somewhat happy if they became pregnant, 35.6% said their partners would be somewhat sad or very upset if they became pregnant, and 20% said they did not know how their partners would react.

Table 5.3. Sexual and reproductive history of clients

Characteristic	*Western Cape*		*W.C. Total n=105*	*Eastern Cape*		*E.C. Total n=100*	*Total n=205*
	Langa Clinic n=52	*Weltevreden Clinic n=53*		*Mhlakulo Clinic = 8 n=50*	*Mbekweni Clinic = 8 n=50*		
Mean number of biological children in total sample– mean (SD)	1.2 (0.9)	1.4 (1.0)	1.3 (1.0)	1.8 (1.8)	1.4 (1.7)	1.6 (1.8)	1.4 (1.4)
Mean number of biological children among those with children– mean (SD)	1.6 (0.7)	1.8 (0.8)	1.7 (0.8)	2.3 (1.8)	2.0 (1.7)	2.2 (1.7)	1.9 (1.3)
Sex breakdown of children – mean (SD)							
Boys	1.2 (0.4)	1.5 (0.6)	1.3 (0.6)	1.6 (0.0.8)	1.5 (0.5)	1.6 (0.7)	1.4 (0.6)
Female	1.3 (0.6)	1.3 (0.5)	1.3 (0.5)	1.6 (1.0)	1.7 ((1.4)	1.6 (1.2)	1.5 (0.9)
Mean number of children for whom financially responsible (SD)	1.2 (0.9)	1.9 (1.8)	1.6 (1.5)	2.2 (2.1)	1.5 (1.5)	1.8 (2.1)	1.7 (1.8)
Currently in a sexual relationship, n (%)	48 (92.3)	49 (92.5)	97 (92.4)	49 (98.0)	49 (98.0)	98 (98.0)	195 (95.1)
Relationship Status, n (%)							
Married cohabiting	4 (7.7)	17 (32.1)	21 (20.0)	11 (22.0)	5 (10.0)	16 (16.0)	37 (18.1)

Married, not cohabiting	2 (3.9)	0	2 (1.9)	2 (4.0)	4 (8.0)	6 (6.0)	8 (3.9)
Single: in stable relationship, cohabiting	8 (15.4)	5 (9.4)	13 (12.4)	3 (6.0)	3 (6.0)	6 (6.0)	19 (9.3)
Single: in stable relationship, not cohabiting	34 (65.4)	18 (34.0)	52 (49.5)	19 (38.0)	37 (74.0)	56 (56.0)	108 (52.7)
Single: casual relationship	0	9 (17.0)	9 (8.6)	14 (28.0)	0	14 (14.0)	23 (11.2)
Single: no relationship now	3 (5.8)	0	3 (2.9)	0	0	0	3 (1.5)
Living with current partner, n (%)	12 (23.1)	20 (37.7)	32 (30.5)	9 (18.0)	8 (16.0)	17 (17.0)	49 (23.9)
Mean number of sexual partners in last 12 months (SD)	1.1 (0.4)	1.2 (0.6)	1.2 (0.6)	1.3 (0.6)	1.2 (0.5)	1.25 (0.6)	1.2 (0.6)
0-2 sexual partners	52 (100.0)	49 (92.5)	101 (96.2)	43 (86.0)	50 (100.0)	93 (93.0)	194 (94.6)
>2 sexual partners	0	4 (7.6)	4 (3.8)	7 (14.0)	0	7 (7.0)	11 (5.4)
Amount of intercourse in last month, n (%)							
1 time	2 (3.9)	8 (15.1)	10 (9.5)	2 (4.0)	6 (12.0)	8 (8.0)	18 (8.8)
2-10 times	38 (73.1)	39 (73.6)	77 (73.3)	24 (48.0)	22 (44.0)	46 (46.0)	123 (60.0)
11-20 times	2 (3.9)	0	2 (1.9)	9 (18.0)	5 (10.0)	14 (14.0)	16 (7.8)
Mean number of total pregnancies (SD)	1.8 (1.0)	2.0 (1.4)	1.9 (1.2)	2.6 (2.1)	2.2 (1.9)	2.4 (2.0)	2.1 (1.6)
Mean age at first pregnancy, (SD)	20.1 (3.2)	20.1 (4.1)	20.1 (3.7)	18.4 (3.1)	18.5 (2.4)	18.4 (2.8)	19.3 (3.4)
Mean time elapsed since last pregnancy – in months (SD)	69.3 (70.5)	42.4 (44.9)	55.2 (59.6)	35.3 (31.0)	36.0 (37.9)	35.6 (34.1)	45.7 (49.7)
Planning to have children in the future, n (%) – Yes	25 (48.1)	20 (37.7)	45 (42.9)	16 (32.0)	33 (66.0)	49 (49.0)	94 (45.9)
Timing of future children, n (%)							
When employed	12 (23.1)	1 (1.9)	13 (12.4)	2 (4.0)	4 (8.0)	5 (4.8)	19 (9.3)
When older / in the future	1 (1.9)	12 (22.6)	13 (12.4)	13 (26.0)	19 (38.0)	32 (32.0)	45 (22.0)
When married	1 (1.9)	4 (7.6)	5 (4.8)	3 (6.0)	8 (16.0)	11 (11.0)	16 (7.8)
Feelings towards last pregnancy – timing, n (%)							
Wanted child then	14 (29.8)	19 (36.5)	33 (33.3)	11 (22.0)	9 (18.0)	20 (20.0)	53 (26.6)
Wanted child later	22 (46.8)	11 (21.2)	33 (33.3)	14 (28.0)	22 (44.0)	36 (36.0)	69 (34.7)
Did not want more children	3 (6.4)	11 (21.2)	14 (14.1)	15 (30.0)	3 (6.0)	18 (18.0)	32 (16.1)
Ever had unplanned pregnancy, n (%)	30 (57.7)	28 (52.8)	58 (55.2)	30 (60.0)	29 (58.0)	59 (59.0)	117 (57.1)
Feelings towards a pregnancy in next few months, n (%)							
Very happy	0	1 (1.9)	1 (1.0)	0	1 (2.0)	1 (1.0)	2 (1.0)
Somewhat happy	11 (21.2)	3 (5.7)	14 (13.3)	0	7 (14.0)	7 (7.0)	21 (10.2)
Mixed feelings	2 (3.9)	8 (15.1)	10 (9.5)	3 (6.0)	1 (2.0)	4 (4.0)	14 (6.8)
Somewhat sad	2 (3.9)	4 (7.6)	6 (5.7)	7 (14.0)	12 (24.0)	19 (19.0)	25 (12.2)
Very sad/upset	37 (71.2)	34 (64.2)	71 (67.6)	35 (70.0)	29 (58.0)	64 (64.0)	135 (65.9)
Don't know	0	3 (5.7)	3 (2.9)	5 (10.0)	0	5 (5.0)	8 (3.9)

Feelings of partner towards a pregnancy in next few months, n (%)							
Very happy	11 (21.2)	18 (34.0)	29 (27.6)	10 (20.0)	4 (8.0)	14 (14.0)	43 (21.0)
Somewhat happy	7 (13.5)	1 (2.0)	8 (7.6)	4 (8.0)	15 (30.0)	19 (19.0)	27 (13.2)
Mixed feelings	5 (9.6)	6 (11.3)	11 (10.5)	2 (4.0)	0	2 (2.0)	13 (6.3)
Somewhat sad	6 (11.5)	3 (5.7)	9 (8.6)	5 (10.0)	8 (16.0)	13 (13.0)	22 (10.7)
Very sad/upset	17 (32.7)	8 (15.1)	25 (23.8)	14 (28.0)	12 (24.0)	26 (26.0)	51 (24.9)
Don't know	4 (7.7)	13 (24.5)	17 (16.2)	13 (26.0)	11 (22.0)	24 (24.0)	41 (20.0)
No partner	2 (3.9)	4 (7.6)	6 (5.7)	2 (4.0)	0	2 (2.0)	8 (3.9)

Table 5.4: Contraceptive characteristics of Clients

The contraceptive practices of study participants are presented in Table 5.4. At the time of interview, 92.7% were using a method of contraception. The most commonly used method was the injectable (81.5%) with 46.8% using the three-month and 34.6% using the two-month injectable, and was followed by the male condom (51.7%). A greater proportion of women in the Western Cape were using injectables and male condoms as opposed to women in the Eastern Cape. 98.5% of all respondents had ever used a contraceptive method and the most commonly ever used methods were the 2-month injectable (76.1%), male condom (63.9%), the 3-month injectable (63.4%) and the pill (41.0%). 26.3% of women had heard of emergency contraception but only 2% had ever used EC. Far more women in the Western Cape as opposed to the Eastern Cape had heard of EC (41.0% vs. 11.0%) and all of the women who had ever used EC lived in the Western Cape. 27.8% had intercourse in the last 12 months without using any method of contraception and 63.4% had sex without using a condom within the last 12 months.

Table 5.4. Contraceptive characteristics, among ever sexually active clients

Characteristic	*Western Cape*		*W.C. Total n=105*	*Eastern Cape*		*E.C. Total n=100*	*Total n=205*
	Langa n=52	*Weltevreden n=53*		*Mhlakulo n=50*	*Mbekweni n=50*		
Currently using contraception, n (%)	*49 (94.2)*	*53 (100.0)*	*102 (97.1)*	*39 (78.0)*	*49 (98.0)*	*88 (88.0)*	*190 (92.7)*
Type of Method, n (%)							
Oral contraceptive pill	5 (9.6)	4 (7.6)	9 (8.6)	1 (2.0)	5 (10.0)	6 (6.0)	15 (7.3)
Injectable	47 (90.4)	46 (86.8)	93 (88.6)	32 (64.0)	42 (84.0)	74 (74.0)	167 (81.5)
3-month	34 (65.4)	34 (64.2)	68 (64.8)	13 (26.0)	15 (30.0)	28 (28.0)	96 (46.8)
2-month	13 (25.0)	12 (22.6)	25 (23.8)	19 (38.0)	27 (54.0)	46 (46.0)	71 (34.6)
Female sterilization	0	0	0	1 (2.0)	0	1 (1.0)	1 (0.5)
Male sterilization	1 (1.9)	1 (1.9)	2 (1.0)	0	0	0	2 (1.0)
Male condom	37 (71.1)	28 (52.8)	65 (61.9)	18 (36.0)	23 (46.0)	41 (41.0)	106 (51.7)
Female condom	4 (7.7)	0	4 (3.8)	0	0	0	4 (2.0)
Ever used a contraceptive method, n (%)	52 (100.0)	53 (100.0)	105 (100.0)	48 (96.0)	49 (98.0)	97 (97.0)	202 (98.5)
Oral contraceptive pill	22 (42.3)	26 (49.1)	48 (45.7)	22 (44.0)	14 (28.0)	36 (36.0)	84 (41.0)
Injectable							
3-month	39 (75.0)	40 (75.5)	79 (75.2)	28 (56.0)	23 (46.0)	51 (51.0)	130 (63.4)
2-month	40 (77.0)	45 (84.9)	85 (81.0)	35 (70.0)	36 (72.0)	71 (71.0)	156 (76.1)
Male condom	41 (78.9)	38 (71.7)	79 (75.2)	26 (52.0)	26 (52.0)	52 (52.0)	131 (63.9)
Female condom	4 (7.7)	0	4 (3.8)	0	0	0	4 (2.0)
Emergency contraception	2 (3.9)	0	2 (2.0)	0	0	0	2 (1.0)
IUD	3 (5.8)	2 (3.8)	5 (4.8)	0	0	0	5 (2.4)
Ever heard of emergency contraception, n (%)	33 (63.5)	10 (18.9)	43 (41.0)	7 (14.0)	4 (8.0)	11 (11.0)	54 (26.3)
Ever used emergency contraception, n (%)	4 (7.7)	0	4 (3.8)	0	0	0	4 (2.0)

Sex in last 12 months without a contraceptive method, n (%)	16 (30.8)	10 (18.9)	26 (24.8)	10 (20.0)	21 (42.0)	31 (31.0)	57 (27.8)
Sex in last 12 months without a condom, n (%)	27 (51.9)	36 (67.9)	63 (60.0)	31 (64.6)	34 (69.4)	65 (67.0)	128 (63.4)
Use of emergency contraception in last 12 months, n (%)	0	0	0	0	0	0	0
Abortion in last 12 months provided by doctor or nurse, n (%)	0	0	0	0	0	0	0
Abortion in last 12 months not provided by doctor or nurse, n (%)	0	0	0	2 (4.4)	0	2 (2.1)	2 (1.0)

Table 5.5: Client Awareness, Knowledge and Use of the IUD

Participant's awareness, knowledge and use of the IUD are presented in Table 5.5. Only 25.8% of women had ever heard of the IUD. Of this small number, more women in the Western Cape (36.2%) as opposed to the Eastern Cape (15%) had heard of the IUD. In cases where women reported that they had heard of the IUD, most said they had heard of the method through a friend (34%), through their school (26.4%), or through a family member other than their mothers (11.3%). Only 3 women (6%) had ever used an IUD and all three of those women were in the more urban Western Cape.

Of those who had heard of the IUD, only 20.8% of respondents said that a health care provider had ever discussed the method with them. Of that same number, only 11.3% reported that a health care provider had ever recommended the IUD as an appropriate contraceptive method. No respondent had seen information about the IUD prior to their interview.

Not surprisingly then, overall knowledge about the IUD was poor. Only 8% believed that they knew how the IUD worked. When asked to describe an IUD, only 45 women (22%) were able to give any correct information. When discussing the length of time that the IUD could be used for, no respondent said 10 years, the maximum limit for a copper IUD, while the majority (10.2%) said that the IUD could be used for 1 to 5 years. This suggests a lack of understanding of the IUD as a long-term contraceptive method.

Table 5.5. Client Awareness, Knowledge and Use of the IUD

Characteristic	*Western Cape*		*W.C. Total n(%)=105*	*Eastern Cape*		*E.C. Total n(%)=100*	*Total N(%)= 205*
	1=Langa n(%)=52	*2=Weltevreden n(%)=53*		*7=Mhlakulo n(%)=50*	*8=Mbekweni n(%)=50*		
Ever heard of the IUD	30 (57.7)	8 (15.1)	38 (36.2)	7 (14.0)	8 (16.0)	15 (15.0)	53 (25.8)
Women who can correctly describe what an IUD is	24 (46.2)	8 (15.1)	32 (30.5)	6 (12.0)	7 (14.0)	13 (13.0)	45 (22.0)
Where heard of the IUD	*N=30*	*N=8*	*N=38*	*N=7*	*N=8*	*N=15*	*N=53*
Health service provider at this facility	2 (6.7)	0	2 (5.3)	0	1 (12.5)	1 (6.7)	3 (5.7)
Health service provider at another facility	1 (3.3)	2 (25.0)	3 (7.9)	1 (14.3)	1 (12.5)	2 (13.3)	5 (9.4)
Pamphlet/poster at health facility	0	1 (12.5)	1 (2.6)	0	0	0	1 (1.9)
Newspaper / radio / television	0	0	0	0	1 (12.5)	1 (6.7)	1 (1.9)
Mother	0	1 (12.5)	1 (2.6)	0	0	0	1 (1.9)
Other family member	1 (3.3)	3 (37.5)	4 (10.5)	2 (28.6)	0	2 (13.3)	6 (11.3)
Friend	13 (43.3)	1 (12.5)	14 (36.8)	1 (14.3)	3 (37.5)	4 (26.7)	18 (34.0)
School	10 (33.3)	0	10 (26.3)	2 (28.6)	2 (25.0)	4 (26.7)	14 (26.4)
Other	2 (6.7)	0	2 (5.3)	1 (14.3)	0	1 (6.7)	3 (5.7)
Unsure	1 (3.3)	0	1 (2.6)	0	0	0	1 (1.9)
Health care provider has ever discussed the IUD with them	6 (20.0)	2 (25.0)	8 (21.1)	2 (28.6)	1 (12.5)	3 (20.0)	11 (20.8)

Health care provider ever suggested the IUD as an appropriate contraceptive method	4 (13.3)	1 (12.5)	5 (13.2)	1 (14.3)	0	1 (6.7)	6 (11.3)
Ever heard or seen information about IUD prior to interview	0	0	0	0	0	0	0
Women who believe they could get an IUD at the clinic if they wanted one	2 (6.7)	3 (37.5)	5 (13.2)	0	4 (50.0)	4 (26.7)	9 (17.0)
Women who believe they know how an IUD works	2 (7.1)	1 (12.5)	3 (8.3)	1 (16.7)	0	1 (7.1)	4 (8.0)
How long women believe an IUD can be used for	*N=18*	*N=7*	*N=25*	*N=6*	*N=5*	*N=11*	*N=36*
Less than a year	9 (17.3)	2 (3.8)	11 (10.5)	2 (400)	2 (4.0)	4 (4.0)	15 (7.32)
1 – 5 years	9 (17.3)	5 (9.4)	14 (13.3)	4 (8.0)	3 (6.0)	7 (7.0)	21 (10.2)
10 years	0	0	0	0	0	0	0
Women who have ever used an IUD	2 (7.1)	1 (14.3)	3 (8.6)	0	0	0	3 (6.1)
Most recent IUD use	*N=2*	*N=1*	*N=3*	*N=0*	*N=0*	*N=0*	*N=3*
Using currently	0	0	0	0	0	0	3 (100.0)
Used within the last year	0	0	0	0	0	0	
Used within last 5 years	0	0	0	0	0	0	
Used more than 5 years ago	2 (100.0)	1 (100.0)	3 (100.0)	0	0	0	
Mean amount of time (in months) that women used the IUD	3 (2-4)	48 (48-48)	18 (2-48)	0	0	0	
Location of IUD insertion	*N=2*	*N=1*	*N=3*	*N=0*	*N=0*	*N=0*	*N=3*
At a clinic in South Africa	1 (50.0)	1 (100.0)	2 (66.7)	0	0	0	3 (100.0)
At a private doctor in South Africa	1 (50.0)	0	1 (33.3)	0	0	0	
Reason for IUD insertion	*N=2*	*N=1*	*N=3*	*N=0*	*N=0*	*N=0*	*N=3*
Client requested method (%)	1 (50.0)	1 (100.0)	2 (66.7)	0	0	0	3 (100.0)
Health care provider suggested method (%)	1 (50.0)	0	1 (33.3)	0	0	0	
Women given information about IUD when starting the method	2 (100.0)	0	2 (66.7)	0	0	0	2 (66.7)
Women who knew what type of IUD they used	1 (50.0)	0	1 (33.3)	0	0	0	1 (33.3)
Experiences using the IUD							
Good	1 (1.9)	0	1 (1.0)	0	0	0	1 (0.5)
Bad	1 (1.9)	0	1 (1.0)	0	0	0	1 (0.5)
Reasons for stopping use of the IUD	*N=0*	*N=1*	*N=1*	*N=0*	*N=0*	*N=0*	*N=1*
Wanted to get pregnant	0	1 (100.0)	1 (100.0)	0	0	0	1 (100.0)

Table 5.6: Client's attitudes towards the IUD method

Participant's attitudes towards the IUD method are presented in Table 5.6. Overall, 72.7% of women said that they would consider using the IUD. After hearing a brief description of the IUD method, most women (89.7%) reported that they thought there were advantages to using the IUD. More women in the Western Cape (94.3%) than in the Eastern Cape (84.9%) reported such advantages. The most commonly cited advantage was that the IUD can be used for a long time (63.9%). Other commonly mentioned advantages were that the IUD is effective at preventing pregnancy (47.8%) and that once the IUD is removed, fertility returns quickly (39%). 14.2% of respondents said that they saw disadvantages to using the IUD, with more women from the Eastern Cape (21%) than the Western Cape (7.6%). Very few women believed that the IUD caused health problems for the women who use them (7.8%) while 86.3% reported that they think the IUD is safe (91.4% in the Western Cape and 81% in the Eastern Cape) and 87.8% reported that they think the IUD is effective at preventing pregnancy.

When the IUD was compared to other contraceptive methods, it fared well. Women said that the IUD was easier to use than oral contraceptive pills (87.3%), female sterilization (84.9%), the injectable (78.5%), the male condom (58.5%), and the female condom (47.3%). Impressively, many women said that male and female condoms were easier to use than the IUD because condoms would protect from both pregnancy and STIs while the IUD would only stop pregnancy.

When asked whom they believed were correct candidates for IUD use, 95.1% of women said that they believed that women who had already had a child could use an IUD while only 53.7% thought a nulliparous woman could use an IUD. For other groups, 72.7% said that teenagers, 31.9% said that women with HIV, and 29.8% said women with STIs could use the IUD.

Overall, women seemed to have positive attitudes about the IUD. Only 10.3% said they thought the IUD caused problems for the women who used them while only 2% believed the IUD causes infertility and 22.6% thought the IUD increases a woman's chance of contracting STIs. Most of the negative press surrounding the IUD and PID appears to not have had a great impact on this population. Only 10.2% of women reported knowing a woman who had ever used an IUD and 96.1% think that most women do not know about the IUD method. However, a promising 87.3% think that women would be interested in the IUD and at the end of the interview, 74.5% said that they would consider using the IUD if it was offered to them.

Table 5.6. Client's attitudes towards the IUD method

Characteristic	*Western Cape*		*W.C. Total N=105*	*Eastern Cape*		*E.C. Total N=100*	*Total N=205*
	Langa N=52	*Weltevreden N=53*		*Mhlakulo N=50*	*Mbekweni N=50*		
Women who see an advantage to using the IUD, n (%)	52 (100.0)	47 (88.7)	99 (94.3)	37 (74.0)	47 (95.9)	84 (84.9)	183 (89.7)
Types of advantages of the IUD*, n (%)	*N=52*	*N=47*	*N=99*	*N=37*	*N=47*	*N=84*	*N=183*
It is not yet familiar to me/I don't know enough	0	4 (7.6)	4 (3.8)	5 (10.0)	0	5 (5.0)	9 (4.4)
It is a safe method	24 (46.2)	17 (32.1)	41 (39.1)	3 (6.0)	2 (4.0)	5 (5.0)	46 (22.4)
It is an effective method / Very good at preventing pregnancy	35 (67.3)	29 (54.7)	64 (61.0)	20 (40.0)	14 (28.0)	34 (34.0)	98 (47.8)
It can be used for a long time	42 (87.8)	31 (58.5)	73 (69.5)	27 (54.0)	31 (62.0)	58 (58.0)	131 (63.9)

Once inserted, the IUD does not require routine maintenance	5 (9.6)	14 (26.4)	19 (18.1)	11 (22.0)	2 (4.0)	13 (13.0)	32 (15.6)
The side effects are not serious	35 (67.3)	6 (11.3)	41 (39.1)	3 (6.0)	24 (48.0)	27 (27.0)	68 (33.2)
Once the IUD is removed, fertility quickly returns	28 (53.9)	14 (26.4)	42 (40.0)	15 (30.0)	23 (46.0)	38 (38.0)	80 (39.0)
Partner does not have to know about it	1 (1.9)	8 (15.1)	9 (8.6)	5 (10.0)	1 (2.0)	6 (6.0)	15 (7.3)
It cannot be felt during intercourse	6 (11.5)	0	6 (5.7)	0	2 (4.0)	2 (2.0)	8 (3.9)
Men will approve of this method	0	0	0	0	1 (2.0)	1 (1.0)	1 (0.5)
Other	8 (15.4)	4 (7.6)	12 (11.4)	1 (2.0)	0	1 (1.0)	13 (6.3)
Women who see a disadvantage to using the IUD *, n (%)	5 (9.6)	3 (5.7)	8 (7.6)	9 (18.0)	12 (24.0)	21 (21.0)	29 (14.2)
It is not yet familiar / don't know enough	3 (5.8)	4 (1.6)	7 (6.7)	2 (4.0)	4 (8.0)	6 (6.0)	13 (6.3)
It might cause health problems	2 (3.9)	3 (5.7)	5 (4.8)	10 (20.0)	1 (2.0)	11 (11.0)	16 (7.8)
It will cause women to get more STDs and maybe HIV	0	0	0	2 (4.0)	0	2 (2.0)	2 (1.0)
It could be painful	1 (1.9)	2 (3.8)	3 (2.9)	5 (10.0)	3 (6.0)	8 (8.0)	11 (5.4)
It could move to another place	3 (5.8)	0	3 (2.9)	2 (4.0)	3 (6.0)	5 (5.0)	8 (4.0)
Other / Specify	0	1 (1.9)	1 (1.0)	0	4 (8.0)	4 (4.0)	5 (2.4)
Women who would consider using the IUD, n (%)	45 (86.5)	42 (79.3)	87 (82.9)	29 (58.0)	33 (66.0)	62 (62.0)	149 (72.7)
Women who think the IUD is safe, n (%)	52 (100.0)	44 (83.0)	96 (91.4)	36 (72.0)	45 (90.0)	81 (81.0)	177 (86.3)
Women who think the IUD is a good method for preventing pregnancy	50 (96.2)	45 (84.9)	95 (90.5)	38 (76.0)	47 (94.0)	85 (85.0)	180 (87.8)
Methods the IUD is easier or harder to use than, n (%):	*N=50*	*N=49*	*N=99*	*N=46*	*N=47*	*N=93*	*N=192*
A. Pill / oral contraceptives							
Easier	50 (96.2)	43 (81.1)	93 (88.6)	44 (88.0)	42 (84.0)	86 (86.0)	179 (87.3)
Harder	2 (3.9)	0	2 (1.9)	0	8 (16.0)	8 (8.0)	10 (4.9)
B. Injectable							
Easier	45 (86.5)	46 (86.8)	91 (86.7)	36 (72.0)	34 (68.0)	70 (70.0)	161 (78.5)
Harder	4 (7.7)	1 (1.9)	5 (4.8)	5 (10.0)	14 (28.0)	19 (19.0)	24 (11.7)
C. Male condom							
Easier	43 (82.7)	28 (52.8)	71 (67.6)	27 (54.0)	22 (44.0)	49 (49.0)	120 (58.5)
Harder	5 (9.6)	16 (30.2)	21 (20.0)	14 (28.0)	25 (50.0)	39 (39.0)	60 (29.3)
D. Female condom							
Easier	43 (82.7)	15 (28.3)	58 (55.2)	17 (34.0)	22 (44.0)	13 (12.4)	97 (47.3)
Harder	5 (9.6)	8 (15.1)	39 (39.0)	9 (18.0)	24 (48.0)	33 (33.0)	46 (22.4)
E. Female sterilization							
Easier	45 (86.5)	46 (86.8)	91 (86.7)	43 (86.0)	40 (80.0)	83 (83.0)	174 (84.9)
Harder	7 (13.5)	1 (1.9)	8 (7.6)	0	8 (16.0)	8 (8.0)	16 (7.8)
Perceptions of which women can use the IUD, n (%)	*N=52*	*N=51*	*N=103*	*N=47*	*N=50*	*N=97*	*N=200*
A. A teenage woman	37 (71.2)	37 (69.8)	74 (70.5)	34 (68.0)	41 (82.0)	75 (75.0)	149 (72.7)
B. A woman who has never had children	30 (57.7)	31 (58.5)	61 (58.1)	19 (38.0)	30 (60.0)	49 (49.0)	110 (53.7)
C. A woman who has had a baby	51 (98.1)	51 (96.2)	102 (97.1)	43 (86.0)	50 (100.0)	93 (93.0)	195 (95.1)
D. A woman who is breastfeeding	52 (100.0)	50 (94.3)	102 (97.1)	38 (76.0)	48 (96.0)	86 (86.0)	188 (91.7)
E. A woman who has an STI currently	34 (65.4)	4 (7.6)	38 (36.2)	8 (16.0)	15 (30.0)	23 (23.0)	61 (29.8)

F. A woman who has had an STI in the past	41 (78.9)	38 (71.7)	79 (75.2)	31 (62.0)	28 (56.0)	59 (59.0)	138 (67.3)
G. A woman who has AIDS	37 (72.6)	12 (22.6)	49 (47.1)	7 (14.0)	9 (18.0)	16 (16.0)	65 (31.9)
Women who think the IUD causes problems for the women who use them, n (%)	5 (9.6)	1 (1.9)	6 (5.7)	5 (10.2)	10 (20.0)	15 (15.2)	21 (10.3)
Women who think the IUD causes infertility, n (%)	1 (1.9)	0	1 (1.0)	1 (2.0)	2 (4.1)	3 (3.0)	4 (2.0)
Women who think having an IUD increases a woman's chance of getting an STI, n (%)	2 (3.9)	7 (13.2)	9 (8.7)	20 (40.0)	17 (34.0)	37 (37.0)	46 (22.6)
Women who think using an IUD protects against STIs, n (%)	8 (15.4)	0	8 (7.8)	0	1 (2.0)	1 (1.0)	9 (4.4)
Women who think the IUD would be an acceptable method to the woman's sexual partner, n (%)	30 (57.7)	17 (32.7)	47 (45.2)	16 (32.0)	22 (44.0)	38 (38.0)	85 (41.7)
Women who think the woman can feel the IUD during intercourse, n (%)	6 (11.5)	2 (3.8)	8 (7.6)	2 (4.0)	8 (16.0)	10 (10.0)	18 (8.8)
Women who believe a sexual partner will be able to feel the IUD during intercourse, n (%)	2 (3.9)	0	2 (1.9)	0	6 (12.0)	6 (6.0)	8 (3.9)
Women who know someone who has used an IUD in the past, n (%)	14 (26.9)	5 (9.4)	19 (18.1)	2 (4.0)	0	2 (2.0)	21 (10.2)
Experience of the person who had that IUD, n (%)	*N=13*	*N=5*	*N=18*	*N=2*	*N=1*	*N=3*	*N=21*
Good	9 (17.3)	3 (5.7)	12 (11.4)	2 (4.0)	1 (2.0)	3 (3.0)	15 (7.3)
Bad	4 (7.7)	2 (3.8)	6 (5.7)	0	0	0	6 (2.9)
Women who think most people know about the IUD, n (%)	3 (5.8)	1 (1.9)	4 (3.8)	0	4 (8.0)	4 (4.0)	8 (3.9)
Women who think more women would be interested in the IUD method, n (%)	51 (98.1)	46 (86.8)	97 (92.4)	37 (74.0)	45 (90.0)	82 (82.0)	179 (87.3)
Women who would consider using the IUD if it was offered to them, n (%)	45 (86.5)	42 (80.78)	87 (83.7)	32 (64.0)	33 (66.0)	65 (65.0)	152 (74.5)

* Women could have answered more than once in this section of questions.

Table 5.7: Awareness of IUD by clinic

Respondent's awareness of the IUD by clinic is presented in Table 5.7. The most respondents had heard of the IUD at the urban Langa clinic (14.6% of the total).

Table 5.7. Awareness of IUD by clinic

Clinic	*Awareness of IUD, n (%) by Cape*	*Awareness of IUD, % of Total*
Western Cape		
Langa (N=52)	30 (57.7)	14.6
Weltevreden (N=53)	8 (15.1)	3.9
Eastern Cape		
Mhlakulo (N=50)	7 (14.0)	3.4
Mbekweni (N=50)	8 (16.0)	3.9

Table 5.8: Client Characteristics Associated with Awareness of IUD

Respondent characteristics associated with awareness of the IUD are presented in Table 5.8. The characteristics associated with awareness of the IUD were living in the Western Cape, older age, being single or in casual relationship, and having used emergency contraception. Women in the Western Cape were significantly more likely to know about the IUD method (36%) than women in the Eastern Cape (15%) (p=0.001). Older age was also associated with awareness of the IUD method with older women (women 30 to 39 at 47.1% and women 40 to 49 at 60.0%) reporting higher awareness of the method than younger women (women aged 20 to 29 at 19% and women 15 to 19 at 89.4%), p=0.000. Although it was not significant, women with a higher level of education (45% tertiary level) were more likely to know about the IUD than women who only had a secondary or primary level education (25% secondary and 23% primary). Single women or women in a casual relationship were more likely to know about the IUD (18.5%) than married women and women in stable relationships (6.8%), p=0.02. Women who had ever heard of emergency contraception were significantly more likely to have heard of the IUD than women who had never heard of EC (50 vs. 17.2%, p=0.000).

Table 5.8. Client Characteristics Associated with Awareness of IUD

Characteristic	*Aware of IUD n(%)*	*Not Aware of IUD n(%)*	*P-value*
Overall	53 (25.9)	152 (74.1)	
Province			
Western Cape	38 (36.2)	67 (63.8)	0.001
Eastern Cape	15 (15.0)	85 (85.0)	
Age (years)			
15-19	5 (10.6)	42 (89.4)	
20-29	20 (19.2)	84 (80.8)	0.000
30-39	16 (47.1)	18 (52.9)	
40-49	12 (60.0)	8 (40.0)	
Employment status			
Yes	21 (24.7)	64 (75.3)	0.7
No	32 (27.4)	85 (72.7)	
Education			
Primary school only	6 (23.1)	20 (76.9)	
Secondary school only	42 (25.0)	126 (75.0)	0.3
Tertiary	5 (45.5)	6 (54.6)	
Currently in a sexual relationship			
Yes	50 (25.6)	145 (74.4)	0.8
No	3 (30.0)	7 (70.0)	
Relationship Status			
Married / Stable relationship	14 (6.8)	31 (15.1)	0.02
Single / Casual relationship	38 (18.5)	115 (56.1)	
Ever had unplanned pregnancy			
Yes	31 (26.5)	86 (73.5)	0.2
No	14 (33.3)	28 (66.7)	
Currently using contraception			
Yes	49 (25.8)	141 (74.2)	1.0
No	3 (25.0)	9 (75.0)	
Current Method			0.8
Oral contraceptive pill	1 (16.7)	5 (83.3)	
Injectable	21 (27.6)	55 (72.4)	
3-month	14 (30.4)	32 (69.6)	
2-month	7 (23.3)	23 (76.7)	
Female sterilization	0	0	
Male sterilization	1 (50.0)	1 (50.0)	
Condom Only (male + female)	1 (12.5)	7 (87.5)	

Dual Methods	27 (27.0)	73 (73.0)	
Ever used a contraceptive method			
Yes	53 (26.2)	149 (73.8)	0.3
No	0	3 (2.0)	
Ever heard of emergency contraception, n (%)			0.000
Yes	27 (50.0)	27 (50.0)	
No	26 (17.2)	125 (82.8)	

Table 5.9: Client Characteristics Associated with Ever Use of IUD

We had hoped to report on the characteristics associated with ever using the IUD. Unfortunately, only three (3) women in our sample of 205 had ever used the IUD, making bivariate analysis inappropriate.

Table 5.10: Client Characteristics Associated with Positive Attitudes about IUD

The respondent characteristics associated with positive attitudes about the IUD are presented in Table 5.10. The only statistically significant characteristic associated with having positive attitudes about the IUD method was having ever used a contraceptive method. Ever use of a contraceptive method is significantly associated with having positive attitudes about the IUD (92%) as opposed to those who have never used a contraceptive (33.3%, 1 person) who had positive attitudes about the IUD (p=0.000). However, this is not a meaningful test since almost every person sampled had used a contraceptive method (almost 99%), suggesting no significant variation in the sample population. This is not surprising considering we recruited our sampled from women attending family planning services.

There are other characteristics that seem associated with positive attitudes towards the IUD but these were not significant. Those currently using a contraceptive method were more likely to have positive attitudes about the IUD (92%) compared to those not using a method (83.3%). Although this association was not significant, it can be said that it was approaching significance with p=0.2. Those who were single or in a casual relationship were more likely to have positive attitudes about the IUD (67.8%) than women who were married or in a stable relationship (20%). This was not significant with the current sample size (p=0.3). Lastly, age, although not significant (p=0.4), was a predictor of attitudes towards the IUD with older women (40-49) being more likely to have positive attitudes towards the IUD (95%) than younger women (14-19) who only had positive attitudes towards the IUD 85% of the time.

Table 5.10. Client Characteristics Associated with Positive Attitudes about IUD

Characteristic	*Positive Attitudes about IUD n (%)*	*Negative Attitudes about IUD n (%)*	*P-value*
Overall	187 (91.2)	18 (8.8)	
Province			
Western Cape	97 (92.4)	8 (7.6)	0.5
Eastern Cape	90 (90.0)	10 (10.0)	
Age (years)			
15-19	40 (85.1)	7 (14.9)	0.4
20-29	97 (93.3)	7 (6.7)	
30-39	31 (91.2)	3 (8.8)	
40-49	19 (95.0)	1 (5.0)	
Employment status			
Yes	77 (90.6)	8 (9.4)	0.7
No	108 (92.3)	9 (7.7)	
Education			
Primary school only	24 (92.3)	2 (7.7)	0.5
Secondary school only	152 (90.5)	16 (9.5)	
Tertiary	11 (100.0)	0	
Currently in a sexual relationship			
Yes	178 (91.3)	17 (8.7)	0.9
No	9 (90.0)	1 (10.0)	
Relationship Status (%)			
Married / Stable relationship	41 (20.0)	4 (2.0)	0.3
Single / Casual relationship	139 (67.8)	14 (6.8)	
Ever had unplanned pregnancy			
Yes	107 (91.5)	10 (8.6)	0.4
No	40 (95.2)	2 (4.8)	
Currently using contraception			
Yes	175 (92.1)	15 (7.9)	0.2
No	10 (83.3)	2 (16.7)	

Current Method			0.3
Oral contraceptive pill	6 (100.0)	0	
Injectable	67 (88.2)	9 (11.8)	
3-month	40 (87.0)	6 (13.0)	
2-month	27 (90.0)	3 (10.0)	
Female sterilization	0	0	
Male sterilization	2 (100.0)	0	
Condom (male + female)	7 (87.5)	1 (12.5)	
Dual Method	95 (95.00)	5 (5.0)	
Ever used a contraceptive method			0.000
Yes	186 (92.1)	16 (7.9)	
No	1 (33.3)	2 (66.7)	
Ever used emergency contraception			0.2
Yes	3 (75.0)	1 (25.0)	
No	76 (95.0)	4 (5.0)	

Table 5.11: Client Characteristics Associated with Considering IUD use in the Future

The respondent characteristics associated with considering IUD use in the future are presented in Table 5.11. Women in the Western Cape (83%) are significantly more likely to consider use of the IUD in the future than women in the Eastern Cape (62%), p=0.000. Currently using contraception was associated with considering use of the IUD (74.7%) compared to those who were not currently using contraception (41.7%) and the association was statistically significant, p=0.02. Those currently using the 3-month injectable (78.3%) and those using dual protection (77%) were more likely to consider IUD use in the future. This association was approaching significance (p=0.13). Also, being single or in a casual relationship was associated with considering use of the IUD (76.5%) as compared to being married or in a stable relationship (20%). This association was approaching significance (p=0.2). Age, although not significant (p=0.4), was a predictor of future IUD use with women over the age of twenty being more likely to consider use of the IUD (70-80%) than women who are 15 to 19 years old (64%). Increasing education was also associated with considering IUD use in the future although the association was not significant (p=0.4). Women with tertiary level education (91%) were far more likely to consider use of the IUD than women with only secondary (73%) or primary (65.4%) level education.

Table 5.11. Client Characteristics Associated with Considering IUD use in Future

Characteristic	*Considering Use of IUD n (%)*	*Not Considering Use of IUD n (%)*	*P-value*
Overall	149 (72.7)	41 (20.0)	
Province			
Western Cape	87 (82.9)	9 (8.6)	0.000
Eastern Cape	62 (62.0)	32 (32.0)	
Age (years)			
15-19	30 (63.8)	11 (23.4)	
20-29	79 (76.0)	20 (19.2)	0.4
30-39	24 (70.6)	6 (17.7)	
40-49	16 (80.0)	4 (20.0)	
Employment status			
Yes	62 (72.9)	13 (15.3)	0.08
No	86 (73.5)	26 (22.2)	
Education			
Primary school only	17 (65.4)	8 (30.8)	
Secondary school only	122 (72.6)	32 (19.1)	0.4
Tertiary	10 (90.9)	1 (9.1)	
Currently in a sexual relationship			
Yes	142 (72.8)	39 (20.0)	0.9
No	7 (70.0)	2 (20.0)	
Relationship Status (%)			
Married / Stable relationship	30 (20.1)	13 (31.7)	0.2
Single / Casual relationship	114 (76.5)	27 (65.9)	
Feelings towards last pregnancy –timing			
Wanted child then	39 (73.6)	10 (18.9)	
Wanted child later	54 (78.3)	13 (18.8)	0.4
Did not want more children	21 (65.6)	9 (28.1)	
Ever had unplanned pregnancy			
Yes	87 (74.4)	24 (20.5)	0.7
No	29 (69.1)	9 (21.4)	
Currently using contraception			
Yes	142 (74.7)	37 (19.5)	0.02
No	5 (41.7)	4 (33.3)	

Current Method			
Oral contraceptive pill	4 (66.7)	2 (33.3)	
Injectable	56 (73.7)	16 (21.1)	
3-month	36 (78.3)	8 (17.4)	
2-month	20 (66.7)	8 (26.7)	0.13
Female sterilization	0	0	
Male sterilization	2 (100.0)	0	
Condom (Male + Female)	5 (62.5)	2 (25.0)	
Dual Method	77 (77.0)	17 (17.0)	
Ever used a contraceptive method			
Yes	149 (73.8)	40 (20.0)	0.000
No	0	1 (33.3)	
Ever used emergency contraception			
Yes	3 (75.0)	1 (25.0)	0.13
No	66 (82.5)	11 (13.8)	

Table 5.12: Respondent's feelings about whether the IUD is easier or harder to use than other contraceptive methods

Respondent's feelings about whether the IUD is easier or harder to use than other contraceptive methods are presented in Table 5.12. In total, participants believed that the IUD was an easier contraceptive method to use than the oral contraceptive pill, the injectable, the male and female condoms, and female sterilization. The only methods that were closer in ease to the IUD were the male and female condoms and most people listed that these were easier to use because they protected a woman from both pregnancy and STIs where as the IUD would only protect a woman from pregnancy.

Table 5.12. IUD easier/harder to use than other methods

Characteristic	*Western Cape*		*W.C. Total n=105*	*Eastern Cape*		*E.C.Total n=100*	*Total n=205*
	Langa	*Weltevreden*		*Mhlakulo*	*Mbekweni*		
IUD vs Pill / oral contraceptives							
Easier	50 (96.2)	43 (81.13)	93 (88.6)	44 (88.0)	42 (84.0)	86 (86.0)	179 (87.3)
Harder	2 (3.9)	0	2 (1.9)	0	8 (16.0)	8 (8.0)	10 (4.9)
IUD vs Injectable							
Easier	45 (86.5)	46 (86.8)	91 (86.7)	36 (72.0)	34 (68.0)	70 (70.0)	161 (78.5)
Harder	4 (7.7)	1 (1.9)	5 (4.8)	5 (10.0)	14 (28.0)	19 (19.0)	24 (11.7)
IUD vs Male condom							
Easier	43 (82.7)	28 (52.8)	71 (67.6)	27 (54.0)	22 (44.0)	49 (49.0)	120 (58.5)
Harder	5 (9.6)	16 (30.2)	21 (20.0)	14 (28.0)	25 (50.0)	39 (39.0)	60 (29.3)
IUD vs Female condom							
Easier	43 (82.7)	15 (28.3)	58 (55.2)	17 (34.0)	22 (44.0)	39 (39.0)	97 (47.3)
Harder	5 (9.6)	8 (15.1)	13 (12.4)	9 (18.0)	24 (48.0)	33 (33.0)	46 (22.4)
IUD vs Female sterilization							
Easier	45 (86.5)	46 (86.8)	91 (86.7)	43 (86.0)	40 (40.0)	83 (83.0)	174 (84.9)
Harder	7 (13.5)	1 (1.9)	8 (7.6)	0	8 (16.0)	8 (8.0)	16 (7.8)

Table 5.13: Logistic regression model for factors associated with awareness of IUD

After adjusting for level of education, being from the Western Cape, one's age, and having heard of EC all independently predicted awareness of the IUD method. Women from the Western Cape were two times more likely to have heard of the IUD than women from the Eastern Cape (OR=2.13; 95% CI 0.99 – 4.58). Women who were between the ages of 30 to 39 years were three times more likely to have heard of the IUD than women between the ages of 15 to 29 years (OR=3.05; 95% CI 1.29 – 7.20) and women who were between the ages of 40 to 49 years were almost eight times more likely to have heard of the IUD than women between the ages of 15 to 29 years (OR=7.75; 95% CI 2.68 – 22.42). Also, women who had heard of EC were 3 times more likely to have heard of the IUD than women who had not heard of EC (OR=3.22; 95% CI 1.46 – 7.11). The difference in awareness of the IUD between women who had a tertiary education and those who did not was non-significant (OR=1.23; 95% CI 0.32 - 4.79).

```
. xi: logistic q1heardIUDrecode cape2 i.agecat2  i.educcat2  q114heardec2
i.agecat2         _Iagecat2_1-4       (naturally coded; _Iagecat2_1 omitted)
i.educcat2        _Ieduccat2_1-3      (naturally coded; _Ieduccat2_1 omitted)

Logistic regression                               Number of obs   =        205
                                                  LR chi2(5)      =      43.31
                                                  Prob > chi2     =     0.0000
Log likelihood = -95.508153                       Pseudo R2       =     0.1848

------------------------------------------------------------------------------
q1heardIUD~e | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       cape2 |   2.127865   .8312252     1.93   0.053     .9895373    4.575682
 _Iagecat2_3 |   3.045217   1.336513     2.54   0.011     1.288354    7.197829
 _Iagecat2_4 |   7.745867   4.200579     3.77   0.000     2.675864    22.42209
_Ieduccat2_3 |   1.230858    .853901     0.30   0.765      .316003    4.794291
q114heardec2 |   3.217701   1.301154     2.89   0.004     1.456606     7.10803
------------------------------------------------------------------------------
```

Table 5.14: Logistic regression model for factors associated with positive attitudes towards the IUD

Only one factor, having ever used contraception, was significantly associated with having positive attitudes about the IUD. However, 18 women did not have positive attitudes about the IUD and only 3 women had never used contraception. These numbers were too small for modeling.

```
. tab q22feelingstoIUD

q22feelings |
      toIUD |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |         18        8.78        8.78
          1 |        187       91.22      100.00
------------+-----------------------------------
      Total |        205      100.00

.  tab q113contraevertotal

q113contrae |
   vertotal |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |          3        1.46        1.46
          1 |        202       98.54      100.00
------------+-----------------------------------
      Total |        205      100.00

. xi: logistic   q22feelingstoIUD   q113contraevertotal

Logistic regression                               Number of obs   =        205
                                                  LR chi2(1)      =       6.29
Log likelihood = -57.829317                       Prob > chi2     =     0.0122
                                                  Pseudo R2       =     0.0516

------------------------------------------------------------------------------
q22feeling~D | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
q113contra~l |      23.25   29.11246     2.51   0.012     1.997984    270.5539
------------------------------------------------------------------------------
```

Table 5.15: Logistic regression model for factors associated with considering IUD use in the future.

After adjusting for age and level of education, being from the Western Cape was the only characteristic that independently predicted whether a woman would consider use of the IUD in the future. Women from the Western Cape were four times more likely to consider the IUD use than women from the Eastern Cape (OR=4.76; 95% CI 2.07 – 10.91).

```
. xi: logistic  considerIUDfut cape2  i.agecat2  i.educcat2  q109current
i.agecat2          _Iagecat2_1-4      (naturally coded; _Iagecat2_1 omitted)
i.educcat2         _Ieduccat2_1-3     (naturally coded; _Ieduccat2_1 omitted)

Logistic regression                                Number of obs   =        205
                                                   LR chi2(5)      =      19.04
                                                   Prob > chi2     =     0.0019
Log likelihood = -93.063969                        Pseudo R2       =     0.0928

------------------------------------------------------------------------------
considerIU~t | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       cape2 |   4.760794   2.016699     3.68   0.000     2.075419    10.92077
 _Iagecat2_3 |   .8657564   .4552099    -0.27   0.784     .3089148    2.426346
 _Iagecat2_4 |   .8498155   .5344546    -0.26   0.796     .2477412    2.915083
_Ieduccat2_3 |   1.751239   1.976356     0.50   0.620     .1917452    15.99435
 q109current |   .6767525   .4204086    -0.63   0.530     .2002862    2.286698
------------------------------------------------------------------------------
```

Table 5.16: Provider Characteristics

The characteristics of providers in the Western and Eastern Cape are summarized in Table 5.16. Although a total of 32 providers took part in the survey, background characteristics were only available for 27 providers. Of those 55.6% were professional nurses, 33.3% were chief or senior professional nurses, and 3.7% were enrolled or staff nurses. Fourteen of the providers (52%) were the manager or supervisor of the facility. The mean number of years that a provider had been working at the facility was 4.3 and the mean number of years since the provider had finished their basic training was 13 years. 59.3% of providers had completed a family planning course, 100% of the providers had been trained to provide HIV care services, and 81.5% had been trained to provide STI care services. In the last six months, 96.3% of providers had provided family planning, 88.9% had provided HIV care services, and 96.3% had provided STI diagnosis and treatment.

Table 5.16. Provider characteristics

Characteristic	*Western Cape n (%) n=11*	*Eastern Cape n (%) n=16*	*Total n (%) n=27*
Rank			
Chief / Senior professional nurse	2 (18.2)	7 (43.8)	9 (33.3)
Professional nurse	7 (63.6)	8 (50.0)	15 (55.6)
Enrolled nurse/staff nurse	1 (9.1)	0	1 (3.7)
Other	1 (9.1))	1 (6.3)	2 (7.4)
Manager or supervisor for the facility	4 (36.4)	10 (62.5)	14 (51.9)
Years working at the facility – mean (SD)	4.2 (2.0)	4.2 (4.3)	4.3 (3.1)
Years since finishing basic training – mean (SD)	15.9 (7.7)	11.3 (6.2)	13.2 (7.1)
Completed a family planning course	10 (90.9)	6 (37.5)	16 (59.3)
Trained to provide HIV care services	11 (100.0)	16 (100.0)	27 (100.0)
Trained to provide STI care services	9 (81.8)	13 (81.3)	22 (81.5)
Has provided family planning in last 6 mo.	11 (100.0)	15 (93.8)	26 (96.3)
Has provided HIV care services in last 6 mo.	10 (90.9)	14 (87.5)	24 (88.9)
Has provided STI diagnosis and treatment in last 6 mo.	10 (90.9)	16 (100.0)	26 (96.3)

Table 5.17: Provider Knowledge about the IUD

Provider knowledge about the IUD is presented in Table 5.17. Overall provider knowledge of the IUD method is poor. When asked which methods of family planning providers routinely suggested to clients, only 1 provider in the Western Cape and 1 in the Eastern Cape mentioned the IUD. After the rhythm or calendar method (3.1%), the IUD was the least suggested method (6.3%). The most commonly suggested methods were the 3 and 2-month injectables (100% each), the male condom (100%), and oral contraceptive pills (96.6%). However, despite the fact that most providers did not suggest the IUD as a family planning option, all providers had heard of the IUD. However, when asked to describe the IUD, only 78.1% described the method correctly. Only 53.3% had heard that there were different types of IUDs, when asked about the correct duration of use, only 12.5% of providers said that the IUD could be used for up to ten years. However, 84.4% could correctly explain how the IUD works to prevent pregnancy by saying that it either creates a spermicidal endometrium or that it inhibits sperm transport, mobility, and viability.

Providers were asked a number of basic questions about the effectiveness, safety, contraindications to use, side effects and risks of the IUD. Only 18.8% of providers knew that the IUD is over 99% effective at preventing pregnancy. When providers were asked to compare the effectiveness of the IUD to other contraceptive methods, providers notably said that the IUD was better than the rhythm method (87.5%), the withdrawal method (87.1%), the pill (71.9%), spermicides (65.6%), the male condom (59.4%). However, only 16.1% reported the IUD to be better than female sterilization. A surprising 62.5% thought that the injectable was better than the IUD at preventing pregnancy. When asked if the IUD was safer than other methods, 81.3% reported that the IUD was safer than the pill but for most other methods only 30 to 50% reported that the IUD was safer. 75% of providers said there was some contraindications to IUD use and the most commonly cited was reported cervical, endometrial, or ovarian cancer awaiting treatment (28.1%). 62.5% of providers said the IUD causes side effects and the most commonly reported side effect was increased menstrual blood (28.1%). Finally, 65.5% of providers believed that the IUD had risks related to it and the most commonly reported risk was ectopic pregnancy (28.1%). Only 31.3% said the IUD could be used as a form of emergency contraception. 59.4% said that the IUD increases one's risk of contracting STIs and 51.6% did not think that nulliparous women could use an IUD.

With regards to training, providers recognized that they needed more information. When providers were asked if they had sufficient training with regards to 9 IUD related issues, no more than 10 providers (32.3%) said that they had enough training in any given area relating to providing the IUD. 93.6% of providers believed that they needed more training and information about the IUD.

Table 5.17. Provider Knowledge about the IUD

Characteristic	*Western Cape* *n (%)* *n=15*	*Eastern Cape* *n (%)* *n=17*	*Total* *n (%)* *n=32*
Methods of family planning suggested to clients at clinic *	*N=15*	*N=17*	*N=32*
The pill	14 (93.3)	17 (100.0)	31 (96.9)
The IUD	1 (6.7)	1 (5.9)	2 (6.3)
3 month injection	15 (100.0)	17 (100.0)	32 (100.0)
2 month injection	15 (100.0)	17 (100.0)	32 (100.0)

Male condom	15 (100.0)	17 (100.0)	32 (100.0)
Female condom	13 (86.7)	12 (70.6)	25 (78.1)
Female sterilization	4 (26.7)	0	4 (12.5)
Male sterilization	3 (20.0)	0	3 (9.4)
Rhythm, calendar method	0	1 (5.9)	1 (3.1)
Heard of the IUD	15 (100.0)	17 (100.0)	32 (100.0)
Can describe the IUD method correctly	12 (80.0)	13 (76.5)	25 (78.1)
Know about different types of IUDs	11 (84.6)	5 (29.4)	16 (53.3)
Understanding of how IUD prevents pregnancy - Correct response	13 (86.7)	14 (82.4)	27 (84.4)
Length of use for IUD			
Those who said 1-5 years	6 (40.0)	4 (23.5)	10 (31.3)
Those who said 10 years	1 (6.7)	3 (17.7)	4 (12.5)
Efficacy of IUD- Correct response	3 (20.0)	3 (17.7)	6 (18.8)
Effectiveness of IUD at preventing pregnancy compared to other methods *	*N=15*	*N=17*	*N=32*
Pill / oral contraceptives - Better	8 (53.3)	15 (88.2)	23 (71.9)
Injectable - Better	4 (26.7)	8 (47.1)	12 (37.5)
Male condom – Better	9 (60.0)	10 (58.8)	19 (59.4)
Female condom - Better	7 (46.7)	6 (35.3)	13 (40.6)
Spermicide - Better	10 (66.7)	11 (64.7)	21 (65.6)
Diaphragm - Better	6 (40.0)	11 (64.7)	17 (53.1)
Female sterilization – Better	1 (6.7)	4 (25.0)	5 (16.1)
Male sterilization - Better	1 (6.7)	5 (29.4)	6 (18.8)
Rhythm, calendar method - Better	13 (86.7)	15 (88.2)	28 (87.5)
Withdrawal- Better	12 (85.7)	15 (88.2)	27 (87.1)
% who believe IUD is safer than other contraceptive methods *	*N=15*	*N=17*	*N=32*
Pill / oral contraceptives - Safer	11 (73.3)	15 (88.2)	26 (81.3)
Injectable – Safer	7 (46.7)	8 (47.1)	15 (46.9)
Male condom - Safer	7 (46.7)	10 (58.8)	17 (53.1)
Female condom – Safer	7 (46.7)	9 (52.9)	16 (50.0)
Spermicide - Safer	9 (60.0)	11 (64.7)	20 (62.5)
Diaphragm - Safer	6 (40.0)	12 (70.6)	18 (56.3)
Female sterilization - Safer	3 (20.0)	7 (41.2)	10 (31.3)
Male sterilization – Safer	3 (20.0)	7 (41.2)	10 (31.3)
Providers who believe there are medical contraindications to IUD use	12 (80.0)	12 (70.6)	24 (75.0)
Distribution of contraindications indicated *			
Pregnancy	4 (26.7)	0	4 (12.5)
Having PID	3 (20.0)	1 (5.9)	4 (12.5)
Having PID within the last three months	2 (13.3)	0	2 (6.3)
Having an active STI	5 (33.3)	2 (11.8)	7 (21.9)
Having an STI within the last three months	2 (13.3)	0	2 (6.3)
Unexplained and/or abnormal vaginal bleeding	3 (20.0)	3 (17.7)	6 (18.8)
A severely distorted uterine cavity	2 (13.3)	1 (5.9)	3 (9.4)
Cervical, endometrial, or ovarian cancer that is awaiting treatment	6 (40.0)	3 (17.7)	9 (28.1)
Allergy to any component of the IUD (ie. Copper)	0	2 (11.8)	2 (6.3)
Pelvic tuberculosis	0	0	0
Unsure	0	0	0
Other	1 (6.7)	3 (17.7)	4 (12.5)
Providers who believe there are side effects associated with IUD use	11 (73.3)	9 (52.9)	20 (62.5)
Noted side effects *			
Nausea	1 (6.7)	0	1 (3.1)
Vomiting	1 (6.7)	2 (11.8)	3 (9.4)
Headaches	0	1 (5.9)	1 (3.1)

Cramping / abdominal pain	3 (20.0)	2 (11.8)	5 (15.6)
Change in menstrual cycle	3 (20.0)	0	3 (9.4)
More menstrual blood	4 (26.7)	5 (29.4)	9 (28.1)
Less menstrual blood	0	0	0
Pain during insertion	2 (13.3)	1 (5.9)	3 (9.38)
Breast tenderness	0	0	0
Depression	0	0	0
Pelvic Inflammatory Disease (PID)	6 (40.0)	1 (5.9)	7 (21.9)
Unsure	3 (20.0)	1 (5.9)	4 (12.5)
Other	4 (26.7)	4 (23.5)	8 (25.0)
Providers who believe there are risks associated with IUD use	13 (86.7)	8 (47.1)	21 (65.6)
Noted risks *	*N=13*	*N=8*	*N=21*
Developing PID	4 (26.7)	3 (17.7)	7 (21.9)
Infertility	1 (6.7)	1 (5.9)	2 (6.3)
Ectopic pregnancy	7 (46.7)	2 (11.8)	9 (28.1)
Developing STIs	2 (13.3)	1 (5.9)	3 (9.4)
Uterine perforation	5 (33.3)	0	5 (15.6)
Other	3 (20.0)	3 (17.7)	6 (18.8)
Providers who believe the IUD can be used as a form of EC	5 (33.3)	5 (29.4)	10 (31.3)
Providers who believe the IUD offers protection from STIs	0	0	0
Providers who believe the IUD increases one's risk of contracting STIs	6 (40.0)	13 (76.5)	19 (59.4)
Providers who believe the IUD cannot be used by a nulliparous woman	4 (26.7)	12 (75.0)	16 (51.6)
Sufficient training related to the IUD in regards to the following factors: *	*N= 14*	*N=17*	*N=31*
Length of use - Yes	7 (50.0)	1 (5.9)	8 (25.8)
How it works to prevent pregnancy - Yes	6 (42.9)	2 (11.8)	8 (25.8)
Medical reasons why certain women shouldn't use it - Yes	5 (35.7)	2 (11.8)	7 (22.6)
Side effects - Yes	6 (42.9)	1 (5.9)	7 (22.6)
Types of IUDs - Yes	6 (42.9)	1 (5.9)	7 (22.6)
Safety – Yes	6 (42.9)	4 (23.5)	10 (32.3)
Efficacy / How well is works - Yes	7 (50.0)	2 (11.8)	9 (29.0)
How to insert it - Yes	3 (21.4)	0	3 (9.7)
How to remove it - Yes	4 (28.6)	1 (5.9)	5 (16.1)
Think they need to know more about the IUD in order to counsel women on this method	14 (93.3)	15 (93.8)	29 (93.6)

* Health care providers could have answered more than once in this section of questions.

Table 5.18: Provider practices related to the IUD method

Provider practices relating to the IUD are presented in Table 5.18. Of the 32 providers interviewed, only 18.8% had ever counseled a woman about the IUD, only 15.6% had ever suggested the IUD to a potential client, only 21.9% of providers reported that they were trained to insert the IUD, only 13.3% had ever inserted an IUD, and of those insertions, all of them had been over a year ago. Only 28.1% had ever referred a woman to another site for an IUD and of those referrals, most (77.8%) referred women to another facility. It is worth noting that in the Western Cape, women were referred to another facility 100% of the time while in the Eastern Cape, women were far more likely to be referred to a GP or private doctor (66.7). Only 28% gave a correct answer about the time to first check- up after IUD insertion and half of the providers believed that women needed routine follow-up visits for their IUD. When asked what type of information they would give women about the IUD, providers mostly commonly said that they would give women information about when to return for follow-up visits (40.65), side effects (37.5%), the duration of use for the method (28.1%) and preventing STIs (28.1%). When asked who the IUD was appropriate for, providers believed the method was most appropriate for those who want children in the future (46.9%), those who have never had children (31.3%), and those who are married (25.0%). When asked whom the IUD was not appropriate for, providers said that the IUD was not an appropriate method for women with a history of STIs (46.9%), HIV-positive women (28.1%), and teenage women (25.0%).

Table 5.18. Provider practices related to the IUD method

Characteristic	*Western Cape n (%) N=15*	*Eastern Cape n (%) N=17*	*Total n (%) N=32*
Clinics offering the IUD	0	0	0
Guidelines for IUD usage at clinic	5 (33.3)	4 (23.5)	9 (28.1)
Providers who have ever counseled a woman about an IUD	3 (20.0)	3 (17.7)	6 (18.8)
Ever suggested use of IUD	3 (20.0)	2 (11.8)	5 (15.6)
Amount of times provider suggests IUD to client			
Once a week	0	0	0
Once a month	1 (14.3)	1 (33.3)	2 (20.0)
Once a year	2 (28.6)	1 (33.3)	3 (30.0)
Never	4 (57.14)	1 (33.3)	5 (50.0)
Providers trained to insert IUD	7 (46.7)	0	7 (21.9)
Providers who have ever inserted IUD	4 (26.7)	0	4 (13.3)
Time to last insertion			
Within the last year	0	0	0
Over a year ago	4 (26.7)	0	4 (12.5)
Referred a woman to another site for IUD	6 (40.0)	3 (17.7)	9 (28.1)
Where referred *			
Another provider in this facility	0	0	0
Another facility	6 (100.0)	1 (33.3)	7 (77.8)
GP/Private doctor	0	2 (66.7)	2 (22.2)
Other (specify)	0	0	0
Time to first check-up after IUD insertion			
One week	2 (13.3)	2 (11.8)	4 (12.5)
Three to six weeks	3 (20.0)	5 (29.4)	8 (25.0)
Six months	1 (6.7)	2 (11.8)	3 (9.4)
One year	2 (13.3)	0	2 (6.3)
Other	7 (46.7)	8 (47.1)	15 (46.9)
Other-Correct	0	1 (5.9)	1 (3.1)
Timing of routine check-ups			

Monthly	2 (13.3)	2 (11.8)	4 (12.5)
Every six months	3 (20.0)	9 (52.9)	12 (37.5)
Yearly	4 (26.7)	3 (17.7)	7 (212)
Other	6 (40.0)	3 (17.7)	9 (28.1)
Information given to client starting IUD *			
How long IUD can be used for	5 (33.3)	4 (23.5)	9 (28.1)
Safety	0	1 (5.9)	1 (3.1)
Efficacy	0	0	0
Side effects	8 (53.3)	4 (23.5)	12 (37.5)
When to return for follow up visits	5 (33.3)	8 (47.1)	13 (40.6)
Preventing STIs	1 (6.7)	1 (5.9)	2 (6.3)
Making sure the IUD is in place	6 (40.0)	3 (17.7)	9 (28.1)
Other	6 (40.0)	10 (58.8)	16 (50.0)
Other – correct responses	2 (13.3)	3 (17.7)	5 (15.6)
Types of women the IUD is appropriate for *			
Women who desire to have more children in the future	7 (46.7)	8 (47.1)	15 (46.9)
Women who have never had children before	5 (33.3)	5 (29.4)	10 (31.3)
Women who are done having children	3 (20.0)	2 (11.8)	5 (15.6)
Women who are married	6 (40.0)	2 (11.8)	8 (25.0)
Women who are not married	3 (20.0)	2 (11.8)	5 (15.6)
Teenage women	4 (26.7)	3 (17.7)	7 (21.9)
Women who are breastfeeding	3 (20.0)	0	3 (9.4)
Women who are HIV-positive	1 (6.7)	0	1 (3.1)
Women with a history of STIs	0	0	0
Women with no history of STIs	6 (40.0)	1 (5.9)	7 (21.9)
Other	5 (33.3)	7 (41.2)	12 (37.5)
Who is the IUD NOT appropriate for *			
Women who desire to have more children in the future	1 (6.7)	0	1 (3.1)
Women who have never had children before	4 (26.7)	3 (17.7)	7 (21.9)
Women who are done having children	5 (33.3)	2 (11.8)	7 (21.9)
Women who are married	0	0	0
Women who are not married	1 (6.7)	0	1 (3.1)
Women who are breastfeeding	0	0	0
Women who are HIV-positive	4 (26.7)	5 (29.4)	9 (28.1)
Women with a history of STIs	6 (40.0)	9 (52.9)	15 (46.9)
Women with no history of STIs	0	2 (11.8)	2 (6.3)
Teenage women	4 (26.7)	4 (23.5)	8 (25.0)
Other	3 (20.0)	6 (35.3)	9 (28.1)

* Health care providers could have answered more than once in this section of questions.

Table 5.19: Provider attitudes related to the IUD method

Provider attitudes related to the IUD method are presented in Table 5.19. Overall, providers did not feel confident about their IUD-related knowledge. Not even 20% of providers felt that they had enough knowledge to counsel a woman on the IUD and only 6.5% felt as if they would be able to insert one. Most providers believed there was an advantage to having an IUD and 50% stated that IUDs could help reduce unplanned and unwanted pregnancies. However, providers also believed there were disadvantages to the IUD method. The most commonly cited disadvantage was side effects (34.4%), followed by concern that the IUD does not offer protection from STIs (31.3%). Eight providers (25%) said that the IUD increases the risk of developing PID. When asked what type of women they would recommend the IUD to, 78.1% of providers said they would recommend the IUD to women who desired more children in the future, 75% said they would recommend the IUD to unmarried women, and 56% said they would recommend the IUD to women who have not had any children yet. The mean age below which providers said they would not provide the IUD was 17.5 years and this was similar between the Western and Eastern Capes. Finally, when asked if they had any concerns about the IUD, the most commonly cited concern (40.6%) was side effects related to the method.

Table 5.19. Provider attitudes about the IUD

Characteristic	*Western Cape n (%) N=15*	*Eastern Cape n (%) N=17*	*Total n (%) N=32*
Feel as if know enough to counsel women on IUD method	3 (21.4)	3 (17.7)	6 (19.4)
Feel as if know enough to insert an IUD	2 (14.3)	0	2 (6.5)
Advantages of IUD use *			
Reduce unplanned/unwanted pregnancy	7 (46.7)	9 (52.9)	16 (50.0)
Reduce teenage pregnancy	2 (13.3)	1 (5.9)	3 (9.4)
Can be used as a form of emergency contraception (EC)	1 (6.7)	1 (5.9)	2 (6.3)
Expand's women's choice	3 (20.0)	0	3 (9.4)
Effective	1 (6.7)	4 (23.5)	5 (15.6)
Safe	2 (13.3)	4 (23.5)	6 (18.8)
Private	1 (6.7)	0	1 (3.1)
Can be used by all women	1 (6.7)	0	1 (3.1)
Can be used by HIV-positive women	0	0	0
Cost-effective	0	0	0
Quick return to fertility upon removal	3 (20.0)	2 (11.8)	5 (15.6)
The copper IUD is a non-hormonal method	1 (6.7)	3 (17.7)	4 (12.5)
Don't see any advantages	0	0	0
Unsure	3 (20.0)	0	3 (9.4)
Other	3 (20.0)	4 (23.5)	7 (21.9)
Other-correct response	2 (13.3)	4 (23.5)	6 (18.8)
Disadvantages of IUD *			
Doesn't protect against STIs / HIV	6 (40.0)	4 (23.5)	10 (31.3)
It is an abortifacient	1 (6.7)	0	1 (3.1)
It increases the risk of developing PID	4 (26.7)	4 (23.5)	8 (25.0)
It has side effects	8 (53.3)	3 (17.7)	11 (34.4)
Women may forget they have it	1 (6.7)	0	1 (3.1)
Initial costs for the device are high	0	0	0
It requires training for insertion	3 (20.0)	2 (11.8)	5 (15.6)

Don't see any disadvantages	2 (13.3)	4 (23.5)	6 (18.8)
Unsure	1 (6.7)	2 (11.8)	3 (9.4)
Other	4 (26.7)	4 (23.5)	8 (25.0)
Other – Correct response	2 (13.3)	1 (5.9)	3 (9.4)
As a health care provider, would personally recommend the IUD to … *			
A woman who desires to have more children in the future	11 (73.3)	14 (82.4)	25 (78.1)
An unmarried woman	10 (66.7)	14 (82.4)	24 (75.0)
A woman who has never had a child	7 (46.7)	9 (52.9)	16 (56.0)
A woman who is HIV-positive	3 (20.0)	2 (11.8)	5 (15.6)
A woman who has AIDS	2 (13.3)	1 (5.9)	3 (9.4)
A woman who has had an STI in the past	3 (20.0)	4 (23.5)	7 (21.9)
A woman who has a current STI	0	0	0
A woman who doesn't use condoms	6 (40.0)	6 (35.3)	12 (37.5)
A teenage woman	9 (69.2)	3 (17.7)	12 (40.0)
Mean minimum age below which health provider would not provide an IUD to a woman	17.6 (15-20)	17.3 (13-20)	17.5 (14.5-20)
Concerns about the IUD *			
Concern regarding medical safety (including risk of PID)	4 (26.7)	3 (17.7)	7 (21.9)
Risk of infertility	0	1 (5.9)	1 (3.1)
Concerns about side effects	7 (46.7)	6 (35.3)	13 (40.6)
Offers no protection from STIs and HIV	3 (20.0)	2 (11.8)	5 (11.6)
Concern regarding efficacy	0	1 (5.9)	1 (3.1)
Cost of the method	0	0	0
Requires trained provider to insert	5 (33.3)	1 (5.9)	6 (18.8)
Other	3 (20.0)	5 (29.4)	8 (25.0)

* Health care providers could have answered more than once in this section of questions.

Table 5.20: Provider perceptions of the IUD

Provider perceptions of the IUD are presented in Table 5.20. Providers had some very interesting insights about the IUD. When asked about the three main barriers to client access and use of the IUD, providers highlighted the lack of knowledge on the part of the provider (84.4%), a lack of trained providers to insert and remove the device (62.5%), the fact that IUDs are not available at facilities (56.3%), and a lack of knowledge on the part of potential users (46.9%). 81.3% of providers believed that women would be interested in the IUD if they knew about it but only 37.5% of providers believed that women's partners would support the use of the IUD as a contraceptive method. When asked why they thought IUD use was low in South Africa, the greatest number of providers said that it was because of a lack of knowledge on the part of the provider and user (50.0%). Just over half of the providers surveyed (51.6%) of providers believed that the IUD would be a good method for South Africa, 73.3% believed that IUD use should be promoted in South Africa, and the most highly cited reason for why IUD use should be promoted in South Africa were that it would increase women's reproductive choice (25.0%) and it would help prevent unwanted pregnancies (21.9%).

Table 5.20. Provider perceptions of the IUD

Characteristic	*Western Cape n (%) N=15*	*Eastern Cape n (%) N=17*	*Total n (%) N=32*
The three main obstacles or barriers to clients' access to and use of the IUD			
Lack of knowledge on the part of the provider	13 (86.7)	14 (82.4)	27 (84.4)
Lack of knowledge on the part of the potential user	8 (53.3)	7 (41.2)	15 (46.9)
Lack of trained providers to insert or remove the device	9 (60.0)	11 (64.7)	20 (62.5)
Moral/religious worries of potential users	1 (6.7)	1 (5.9)	2 (6.3)
Providers belief that IUD is an abortifacient	1 (6.7)	0	1 (3.1)
IUD is never available at this facility	9 (60.0)	9 (52.9)	18 (56.3)
IUD is often out of stock	0	1 (5.9)	1 (3.1)
IUD does not offer protection from STIs	2 (13.3)	0	2 (6.3)
Many myths and misperceptions	1 (6.7)	1 (5.9)	2 (6.3)
Other	3 (20.0)	7 (41.2)	10 (31.3)
Other – IUD not promoted	0	2 (11.8)	2 (6.3)
Think that women would use the IUD method if they knew about it	11 (73.3)	15 (88.2)	26 (81.3)
Think that women's partners would support their use of the IUD as a method for preventing pregnancy	3 (20.0)	9 (52.9)	12 (37.5)
Reasons why HCP think IUD use is low in South Africa			
Fear of side effects	2 (13.3)	1 (5.9)	3 (9.4)
Lack of knowledge on part of provider or user	7 (46.7)	9 (52.9)	16 (50.0)
IUD method is not promoted / available	4 (26.7)	6 (35.3)	10 (31.3)
Women are not comfortable with a method that stays inside the body all the time	3 (20.0)	1 (5.9)	4 (12.5)
Women's partners will not agree with the method	2 (13.3)	0	2 (6.3)
Other	3 (20.0)	2 (11.8)	5 (15.6)
Think the IUD is a good family planning method for South Africa	8 (53.3)	8 (50.0)	16 (51.6)
Reasons cited for why more IUD use should be promoted in South Africa			
Increases women's contraceptive choices	6 (40.0)	2 (11.8)	8 (25.0)

Prevents unwanted pregnancy	3 (20.0)	4 (23.5)	7 (21.9)
It is a reliable option	3 (20.0)	0	3 (9.4)
People currently lack knowledge about the IUD	1 (6.7)	1 (5.9)	2 (6.3)
IUD has less side effects than other methods	0	2 (11.8)	2 (6.3)
Other	3 (20.0)	3 (17.7)	6 (18.8)
Reasons cited for why more IUD use should not be promoted in South Africa			
Misinformation of lack of knowledge about method	1(11.1)	4 (44.4)	5 (55.6)
High prevalence of HIV/STIs	1(11.1)	2 (22.2)	3 (33.3)
Other	1(11.1)	0	1(11.1)
Think that greater IUD use should be promoted in South Africa	12 (80.0)	10 (66.7)	22 (73.3)
Providers who think they need more training and information about the IUD method	14 (93.3)	15 (93.8)	29 (93.6)
Areas for further training and education about the IUD*			
Types of IUDs that are available	2 (6.9)	3 (10.3)	5 (17.2)
Recommendations about appropriate candidates for IUD usage	4 (13.8)	1 (3.4)	5 (17.2)
Possible duration of use	1 (3.4)	1 (3.4)	2 (6.9)
How to insert and remove IUD	10 (34.5)	11 (37.9)	21 (72.4)
Advantages and disadvantages	2 (6.9)	4 (13.8)	6 (20.7)
General knowledge	7 (24.1)	7 (24.1)	14 (48.3)
Side effects	2 (6.9)	2 (6.9)	4 (13.8)
Efficacy	0	3 (10.3)	3 (10.3)
Other	1 (3.4)	3 (10.3)	4 (13.8)

* Health care providers could have answered more than once in this section of questions.