Attitudes and intentions of future health care providers regarding termination of pregnancy (TOP) services in South Africa

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0.0 ABSTRACT

Voluntary or induced termination of pregnancy (TOP) is a common reproductive health phenomenon worldwide, whether legal or illegal (WHO, 2004; Schenker and Cain, 1999). Although some countries, including South Africa, have liberalized TOP laws to allow legal and safe provision of abortion, many barriers continue to impede successful rollout of services. Key among these are the following:

- recruiting and retaining staff to provide such services,
- incorporating TOP observation and training into medical training curricula, preventing burnout,
- addressing negative attitudes and stigma of health providers,
- diminishing professional discrimination and harassment, and
- offering more TOP training modules, counselling workshops, and values clarification workshops over a spread of geographic areas (Adamo, 2003).

Identifying future health professionals who may be interested in training and eventually providing TOP care has thus been prioritized by the South African Department of Health. Examining the knowledge, attitudes, beliefs, and intentions of medical students in training could make an important contribution to policy initiatives with respect to abortion provision.

The current study measured these parameters among medical students in one of the eight medical training institutions in South Africa. With the liberalization of TOP legislation in South Africa, future health professionals' attitudes and intentions towards abortion services is a critical determinant to equity, access, and availability of women's reproductive care and to the successful implementation of TOP law.

1.0 OVERALL GOAL

The goal of this study was to examine knowledge, attitudes, beliefs, and intentions of future health care professionals with respect to abortion and the provision of abortion-related services. Outcomes from this research will be used to inform health services planning and to assist in curriculum development for health professions. This research provides insights into a new generation of health providers in South Africa and may help direct health service planning and medical curriculum development with respect to termination of pregnancy in this country.

2.0 SPECIFIC AIMS

Specific aims of this research were:

Knowledge

- To determine the proportion of future health providers who know the legal dimensions of TOP in South Africa

Attitudes

- To determine the proportion of future health providers who believe that safe, voluntary abortion should be legal and accessible
- To determine the proportion of future health providers who believe that the government should fund such services
- To determine under what circumstances (and with what restrictions) future health providers believe TOP services should be made available
- To evaluate among future health providers the perceived roles of patient choice and provider conscientious objection to providing or referring for TOP services

Curriculum

- To determine the current exposure of medical students to abortion education and/or training in the medical curriculum
- To determine what proportion of medical students would choose to receive education and/or training in abortion and abortion-related services
- To determine what proportion of medical students would attend an institution whose curriculum required abortion training and rotation

Intentions

- To examine what proportion of future health professionals intend to incorporate abortion into their practices (either through provision of care or referral)
- To examine what proportion of future health professionals intend to seek out education and training in abortion and abortion-related care

Predictors

- To determine predictors of positive or negative attitudes towards willingness to receive education and training in TOP
- To determine predictors of positive or negative attitudes towards willingness to refer/not refer patients for TOP
- To determine predictors of positive or negative attitudes towards willingness to provide/not provide TOP services

3.0 LITERATURE REVIEW

Voluntary or induced termination of pregnancy (TOP) is a common reproductive health phenomenon worldwide, whether legal or illegal (WHO, 2004; Schenker and Cain, 1999). Since liberalization of reproductive health law in South Africa in 1996, access to safe, timely, and legal abortion on demand is a reproductive health right for South African women (Choice on Termination of Pregnancy Act, 1996). However, considerable staff, infrastructure and budgetary constraints have limited the effectiveness and timeliness of rollout of TOP services in this country (Adamo, 2003; Dickson et. al., 2003; Althaus, 2000). Indeed, the most challenging obstacles for policymakers and the Department of Health to overcome are recruiting and retaining staff to provide such services. Crucial to overcoming these challenges are: incorporating TOP observation and training into medical training curricula, preventing burnout, addressing attitudes and stigma of conscientiously objecting health providers, diminishing professional discrimination and harassment, and offering more TOP training modules, counselling workshops, and values clarification workshops over a spread of geographic areas (Adamo, 2003).

Other countries with progressive abortion legislation have encountered similar difficulties, particularly in identifying a new generation of health professionals to replace ageing populations of TOP service providers now retiring the field (Joffe, 2003; Benshoof, 1993; Winkler, 2003). Clearly, a critical point for recruiting future TOP providers is to identify receptive individuals early in their training and direct them towards rotation and/or specialty programmes with TOP components. Moreover, values clarification workshops

and early educational interventions are valuable to help improve awareness and to foster open dialogue on the issue of abortion (Mitchell et al, 2005). However, medical programmes throughout the world offer a paucity of training opportunities in TOP and TOP-related services (Espey et al, 2005; Westhoff, 1994; Williams, 2002). Furthermore, demand for such training has been limited, or perhaps silenced, largely due to the atmosphere of controversy and stigma around TOP. The scarcity of TOP providers willing and/or trained to provide abortions has serious implications for women's access to TOP services and for health service planning (Buga, 2002).

Future health care professionals hold the key to determining availability, access, and coverage of abortion services in the future. However, there is little literature documenting attitudes and intentions of health professionals in training towards TOP and TOP provision, particularly in developing countries.

3.1 Worldwide Trends in Abortion

TOP: an overview

TOP has emerged as a major public health and human rights issue within the last century, stimulating rigorous social and political debate and inflaming individual opinions over the legality and morality of the practice (Dyer, 2003; van Bogaert, 2002). Conflicting moralities and traditional convictions about the sanctity of life have produced dichotomous entities around the TOP issue: the "pro-life" or "anti-choice" contingency and the "pro-choice" contingency. The "pro-life" argument rests on the complete sanctity of human life, which mandates preservation of human life, however undeveloped; religious and spiritual beliefs heavily influence this position. The "pro-choice" contingency's argument lies upon several philosophical premises: an individual's right to bodily integrity, privacy, and autonomy which must not be infringed upon by the state; civic morality as related to public health demand (due to unsafe, injurious abortions); demographic or population control concerns; and social equity and justice (for example, South Africa's TOP legislation is based upon the latter and aims to protect the rights of previously disadvantaged groups and to preserve equality, equitable access, justice and social reconciliation in all policy considerations [Dickson et. al., 2003]) (van Bogaert, 2002).

Legal abortion around the world

A global survey conducted in 2000 determined that 60% of the world's population lives in countries where abortion on demand is legal (Benagiano and Pera, 2000; Francome and Freeman, 2000). Most of the countries are in the developed world. The

majority of 'abortion-prohibitive' countries are in the developing world. Of the 'abortion-prohibitive' countries, 14% of countries permit abortion only to protect a woman's physical health, 21% permit abortion to save a woman's life, and 4% prohibit abortion in all circumstances (Benagiano and Pera, 2000).

The reality of dangerous backstreet abortions occurring all over the world has prompted many governments and health ministries to seriously consider liberalizing medical termination of pregnancy (Varky et. al., 2000). Particularly when the pregnancy is the result of rape or incest, the foetus is malformed, or the mother's health is endangered by the pregnancy, the health-morality argument is strong (van Bogaert, 2002). In 'abortion-prohibitive' countries, the reality of abortion creates serious human rights concerns; poor women frequently are subjected to unsafe 'backstreet' procedures, while their wealthier counterparts may simply travel to another country where they can obtain the legal procedure, for a certain fee. In Ireland, where TOP is completely illegal, women seeking abortion must travel to neighbouring England for services, creating a highly discriminatory environment that disadvantages poor women who cannot afford to travel for services (Francome, 1997). In Spain, partial decriminalization of abortion did not occur until 1985; in the ten years prior to liberalization, one study estimated that nearly 240,000 Spanish women travelled to England, Wales, and the Netherlands to obtain legal, safe abortion (Peiro et al, 2001).

In Africa, the situation is dire. The WHO estimates that worldwide, over 19 million unsafe abortions occur annually, and that the vast majority of these- nearly 95%- are performed in developing countries (WHO, 2004). The greatest percentage of these- 4.2 million unsafe abortions- occur in Africa (WHO, 2004). Hord and Wolf, writing on the cycle of unsafe abortions in Africa, conclude: "if the region's predominantly restrictive abortion laws are meant to prevent abortions from happening, they are clearly not working" (2004:30). In African countries, more often than not, women are not able to travel to obtain safe and legal abortion. Given the significance placed on an African woman's fertility in many cultural contexts, a woman who is discovered to have illegally aborted an unwanted pregnancy may be ostracized from her family and community, or in worst case scenarios, killed (WHO, 2004). Often women are 'found out' because the procedure was poorly performed and/or resulted in extensive injury (WHO, 2004). Access to safe, confidential TOP is paramount to protecting women's health and to ensuring that women have autonomous control over their own fertility. Despite statements issued by international health and development organizations affirming that safe, accessible TOP is a human right and must be legally addressed in

developing nations, only a handful of African countries have made some form of voluntary abortion legal (van Bogaert, 2002).

Abortion and public health

Globally, more than 50 million voluntary induced abortions occur annually; this total includes both safe and unsafe procedures (WHO, 2004). The World Health Organization estimates on average 600,000 women die each year from abortion-related complications (Schenker and Cain, 1999; WHO, 2004). Worldwide surveillance studies have demonstrated that while legally prohibiting abortion is not an effective deterrent, there is "ample evidence showing that the legalization of abortion does result in a significant decrease in abortion rates… and in a significant drop in morbidity and mortality from 'unsafe' abortion procedures" (van Bogaert, 2002:141).

Nevertheless, many countries insist that the most effective means of dealing with 'unsafe' abortion-related maternal deaths is to heavily restrict its practice in the medical community. In countries where abortion legislation is heavily restrictive, such as Thailand, Ireland, Ghana, and Zimbabwe, "backstreet" illegal abortions are an everyday reality, with women suffering and frequently dying needlessly from abortion-related, preventable injuries (Whittaker, 2001; Francome, 1997; Lithur, 2004; van Bogaert, 2002; Varky et. al., 2000). The majority of unsafe abortions occur in the developing world, namely the African continent (Varkey et. al., 2000). For example, unsafe TOP is the second leading cause of maternal mortality in Ghana (Lithur, 2004). In Africa in general, unsafe abortion is the leading cause of maternal deaths (Hord and Wolf, 2004).

During apartheid in South Africa, inequitable access the health services among non-white South Africans and coercive and racist family planning practices led to significant morbidity and mortality from abortion-related injuries and adverse events (IPAS, 2005). After the end of apartheid, South Africa produced a highly progressive democratic constitution, which specifically addressed equity and human rights issues related to women's sexual and reproductive health decision-making (Althaus, 2000). The commitment of the African National Congress (ANC) party to reproductive health and racial and gender equality set the stage for the introduction of liberal TOP law (Althaus, 2000). National data from 1994 showed that an estimated 45,000 women per year were admitted to public hospitals as a result of incomplete, unsafe abortion, and approximately 425 women died annually in public hospitals from complications related to illegal abortion (Katzenellenbogen et al, 1997). Further, fifteen percent of patients hospitalized as a result of unsafe abortion experienced persistent and severe

morbidity, while an additional nineteen percent experienced moderate morbidity from incomplete abortion (Katzenellenbogen et al, 1997).

Following implementation of the CTOP Act in South Africa, deaths resulting from unsafe, illegal abortion dropped by 90%; however, in rural areas and in areas with no TOP providers, many women continued to obtain clandestine abortions (Department of Health, 1999; Jewkes et al, 2005). In fact, while an estimated 50,000 legal abortions were safely provided in the year following legalization of TOP, alarmingly, an equal number of unsafe abortions occurred (Department of Health, 1997), mostly due to lack of information about, access to and availability of services. One surveillance study in 1998 revealed that as many as 60.5% of early pregnancy deaths and 38.8% of deaths from pregnancy-related sepsis resulted from 'unsafe' abortions (Department of Health, 1998).

Healthcare provider conscientious objection

Conscientious objection has been described as a provider's right to refuse to perform any treatment to which he has a conscientious objection, provided that he/she understands that the burden of proof of conscientious objection is his/her responsibility in the event of any judicial proceeding (Raynor and Marshall, 2002). Conscientious objection in its broadest interpretation can be described as an objection "in principle to a legally required or permitted practice" (van Bogaert, 2002:132). In medical practice specifically, however, invoking conscientious objection not only involves the rights and principles of the provider, but also the autonomy and best interests of the patient (van Bogaert, 2002). As such, while the rights of the provider to object should certainly be respected, one must also consider health professionals' legal obligations to the patient to provide or alternatively refer for services, as required by law. Furthermore, certain medical conditions or circumstances demand that the autonomous rights of the patient to seek and receive safe medical care supersede the objecting rights of the provider (Raynor and Marshall, 2002). Indeed, van Bogaert argues that physician conscientious objection to TOP is completely inapplicable "when the continuation of pregnancy poses a serious danger to life, or health, physical or mental" (van Bogaert; 2002:136). Moreover, van Bogaert and other authors argue, when lack of reproductive choice leading to 'unsafe' abortions threatens life and/or health, physicians are ethically bound to protect the patient, whose interests then supersede personal morality (van Bogaert, 2002; Wicclair, 2000).

Recently, a series of articles emerging from the debate over medical practitioners' rights versus patients' rights produced the following key guidelines for ethical duty of care in the medical setting:

> 1) "Conscientious objection does not exempt [medical practitioners] from being involved in any treatment to save a woman's life, nor from the duty to give *undiscriminating care* to *all women*;
>
> 2) "Duty of care includes giving women full and *unbiased* information and advice regarding antenatal screening and family planning, including termination of pregnancy;
>
> 3) "The Human Rights Act of 1998 affirms that the autonomy of both the woman and the medical practitioner should be respected; the rights of the foetus are controversial;
>
> 4) "Any conscientious objection must be declared and addressed prior to involvement in any termination of pregnancy procedure, including consultation (Marshall and Raynor, 2002:392) (Where possible, it is ethically accepted to refer the patient to a non-objecting health provider; where there is no one, the medical practitioner should then waive his/her rights to objection, in respect of the woman's bodily autonomy [van Bogaert; 2002]);
>
> 5) "It is critically important that medical practitioners are able to make the distinction between involvement in the procedure for termination of pregnancy and their legal and professional responsibilities in caring for women undergoing such procedures. These women deserve to be treated with dignity and respect, and they have a right to non-judgmental care." (Marshall and Raynor, 2002:577).

3.2 South Africa's Choice on Termination of Pregnancy Act

The demand for reproductive rights

A major human rights dimension exists to the debate on TOP; this argument focuses on bodily and personal integrity, autonomy, a woman's right to control over her own fertility, gender equality, socioeconomics, and equity in access to resources, health care, and education (UNAIDS and the Office of the UN High Commissioner for Human Rights, 1996:20-21). The human rights perspective has drawn avid support for

legalized TOP in the last few decades; indeed, the CTOP Act of 1996 emerged in part from the progressive social nature and human rights language of the South African Constitution (1994). Recognizing that not all South Africans had the education, transport, and means to acquire contraception, policymakers observed that unwanted pregnancies were likely to occur most often in economically disadvantaged and under-resourced areas of the country (Lee, 1996), creating inequalities in control over fertility. Furthermore, high rates of rape and domestic and sexual violence in South Africa translated into a large number of women being unable to control when, where and with whom they have sex, as well as what method of contraception- if any- is used (Hord and Wolf, 2004; Adamo, 2004). Inequitable gender dynamics in the country seem to promote a culture of violence against women, a feeling of entitlement to sex among some men, and socioeconomic abuse, in some cases (Adamo, 2004). Promoting gender equality- including a woman's right to work and earn wages comparable to a man's- certainly factors in to a woman's control over her reproduction (Adamo, 2004). In terms of equity, it is not difficult to understand that educated, economically stable, white women could have obtained safer, albeit still unlawful, abortions on demand prior to 1994 more easily than other women. Part of the justification for liberal CTOP legislation was to address this disparity. In designing the CTOP ACT, South African public health officials recognized the need to establish equitable practices in reproductive decision-making.

Provisions of the CTOP Act

With the liberalization of South African reproductive law in 1996, safe and legal termination of pregnancy was formally incorporated into women's health services. The legislation went into effect at the start of 1997. As one part of a series of progressive human rights initiatives undertaken by the burgeoning democracy, TOP provision was to extend to all provinces in South Africa, with free TOP services to be provided in public clinics and hospitals (Choice on Termination of Pregnancy [CTOP] Act, 1996). The legislation specifies that a woman can obtain an abortion on demand within the first 12 weeks of pregnancy without providing any justification. Between 13 and 20 weeks gestational age, a woman can obtain a TOP if one of four criteria are satisfied: if continuing the pregnancy would pose a risk to the woman's mental or physical health; if there is significant risk that the unborn child has a mental or physical handicap; if the pregnancy is the result of rape or incest; or if the pregnancy would be detrimental to the woman's socioeconomic condition (Lee, 1996). Beyond 20 weeks, TOP can be sanctioned only in medically necessary circumstances (Choice on Termination of Pregnancy [CTOP] Act, 1996).

The Act provides that termination of pregnancy must be performed by a certified medical practitioner and that during the first 12 weeks gestation of pregnancy, TOP may also be carried out by registered nurse-midwives, trained in abortion care (CTOP Act, 1996). Nurse-midwives and registered nurses are expected to play a critical role in the referral and counselling processes (van der Westhuizen, 2001). A 2004 amendment to the Act provides that registered nurses are also allowed to legally provide termination services; this amendment further expanded the number of facilities designated to provide TOP (IPAS, 2005). Medical and surgical terminations can only be provided in designated facilities, and facilities must both notify the Ministry of Health of TOPs performed and keep detailed records of TOPs and complications, while preserving patient confidentiality (CTOP Act, 1996). Pre- and post- non-directive counselling must be offered to women seeking terminations at all sites. Informed consent must be obtained from the woman undergoing the procedure; no other consent is necessary (partner, parent, or otherwise, unless the woman is physically or mentally unable to consent, in which case specific conditions apply) (CTOP Act, 1996).

In addition, the CTOP Act provides that all women requesting terminations of pregnancy must be informed of their legal rights under the CTOP law, irrespective of a provider's personal moral beliefs or objections to TOP (1996). Any person or provider attempting to obstruct access to a TOP facility (by coercive means, physical means, refusal to refer, or otherwise) or attempting to prevent women from obtaining lawful terminations could be punishable by law, including being fined and/or convicted to imprisonment (CTOP Act, 1996). Finally, any person or medical provider who disrupted the confidentiality and privacy of a woman's decision to obtain an abortion and/or disturbed the record-keeping and notification processes could be penalized by law and liable for conviction by fine or imprisonment (CTOP Act, 1996).

Implementation progress

In 2003, a report on the implementation of CTOP law concluded that of the 292 public and private facilities designated to provide TOP services by the national government, only 32% were functioning in 1999, and half the country's voluntary induced abortions were performed in Gauteng province, although only 19% of South African women of reproductive age lived in that province (Dickson et. al., 2003). Between 1997 and 2002, the Western Cape province made progress in increasing the number of functional facilities as a proportion of those designated to provide TOP services (Adamo, 2003). In 1997 in the Western Cape, 49% of public facilities designated to provide abortions were functioning, and 74% of NGO/private TOP-

designated facilities were functional. In 2002, 73% of these designated public facilities were operational, while the proportion of NGO/privately functioning facilities decreased somewhat to 60% (Adamo, 2003). In general across South African provinces, most facilities successfully rolling out TOP services in a timely manner were located in populated metropolitan areas (Althaus, 2000). Women from rural areas remain heavily disadvantaged in accessing and receiving timely care; the majority of TOP-functioning facilities were located near Pretoria, Johannesburg, and Cape Town (Dickson et. al., 2003). In the entire Northern Cape, only two facilities were designated by the government to perform TOP. Over half the women of reproductive age in this province lived more than 50 km from a first-trimester abortion facility, while two-thirds of women of reproductive age in the Northern Cape province resided further than 50 km from a facility providing second-trimester abortions (Dickson et. al., 2003). The poor distribution of services, lack of human resources, and lack of access described here does not take into consideration transport routes, cost, referral problems and waiting times, all of which contribute to diminished access to and availability of abortion services in reality.

Fortunately, in South Africa, the legal provision that nurses can be trained to perform TOP is an important strategy to help address the lack of providers in rural areas (Dickson-Tetteh and Billings, 2002). In other countries, limiting abortion provision to physicians only has dramatically decreased the number of providers available for providing safe abortion (Shotorbani et. al., 2004; Darney, 1993; Henshaw, 1995).

Barriers to effective implementation

The greatest barrier in implementing the SA TOP law is the lack of committed health personnel willing to train to become abortion providers (Dickson-Tetteh and Billings, 2002; Adamo, 2003; IPAS, 2002). Studies in South Africa and the US have demonstrated that service provision is nearly always dependent upon "a core of committed providers", often comprising a small minority of staff members (1 or 2 people willing to provide the service) (Dickson et. al., 2003, Adamo, 2003; Foster et. al., 2003; Joffe, 2003). When any one of these providers is on leave or absent due to illness or transfer of duties, frequently there is no one left in the facility to run the TOP services division. Moreover, lack of support for these individuals, within both provincial and local administrations, and the lack of available TOP training and/or rotation in medical education contributes to an environment of lethargy around the issue of provision (Joffe, 2003; Adamo, 2003; Westhoff, 1994; van Bogaert, 2002).

While values clarification workshops have been shown to be effective in facilitating dialogue on the issue of abortion and improving tolerance and attitudes towards women seeking abortion (Mitchell et al, 2005), these workshops are not, in and of themselves, sufficient in terms of recruiting new providers to the field (Adamo, 2003). The Western Cape's five-year report on implementation of the CTOP Act demonstrated that while high numbers of health workers attended values clarification workshops around TOP, less than half of those continued further to counselling training workshops or training programmes for providing abortion care (MVA technique) (Adamo, 2003). The Western Cape province, in particular, has reported extensively on problems of recruitment and retention, burn-out, lack of health providers willing or available for training, patient lack of access, unmet demand for services and overburdening of operating services, budgetary constraints, discrimination and stigma, and long waiting times which caused many women to enter another period of pregnancy for which abortion services were more difficult to obtain (Adamo, 2003). As an example of strained services, the Western Cape provincial 'roving team'- a 3-person mobile abortion services unit- has been providing the majority of TOPs throughout the region where personnel at designated facilities are unwilling to offer services (Adamo, 2004). This small team is severely strained to meet TOP demands of the entire province on a mobile basis, and its principle provider is returning to her home country in Europe. Identifying a committed replacement provider for her will prove to be a difficult task, as the workload is overwhelming, the support minimal, and the burnout high (Adamo, 2004). South Africa is not unique in this regard. Finding and retaining sufficient staff for providing TOP services remains the most significant challenge to overcome in many countries, including the US, Australia, and South Africa (Joffe, 2003; Edwards, 2001; Wear and Keck-McNulty, 2002; Australia Nursing Journal, 1997; and Dickson-Tetteh and Billings, 2002).

Medical curriculum development: opportunities in TOP training

A supportive legislative environment around TOP does not necessarily imply inclusion of TOP training and education in the standard medical curriculum, nor does it ensure provider availability to perform such services. Integration of abortion training and technique into rotations and residency programs remains sluggish in many contexts, even in those countries where liberal TOP laws have been enacted (Foster et. al., 2003; Harper et al, 2005). Lack of specific requirements and the failure of government to impose curriculum audits have meant that most advanced clinicians and medical doctors were never exposed to opportunities for TOP training (Westhoff, 1994). Indeed, only recently have many American medical universities incorporated TOP training into OB/GYN rotations and residencies, and this was largely made possible

through the intensive lobbying and advocacy of one student organization, Medical Students for Choice (MSFC) (Steinauer, 2000; Williams, 2002; Espey and Dorman, 2004; Wear and Keck-McNulty, 2002; Edwards, 2001).

In the US in the early nineties, the proportion of OB/GYN residency programs that offered or required abortion training since 1970 significantly dropped to 7-12% (Westhoff, 1994; MacKay and MacKay, 1995). In the last few years this trend has been somewhat reversed, and according to one report, some 81% of OB/GYN residency programmes now provide first-trimester abortion training- 46% as routine training and 34% as an elective course (Almeling et. al., 2000). However, another study released in 2005 among OB/GYN clerkship programmes in US medical schools found that 17% of programmes offered no formal education about abortion in either pre-clinical or clinical years (Espey et al, 2005). Additionally, although 45% of third year rotations offered a clinical experience in abortion and half offered a fourth-year reproductive health elective which included abortion training, both these training initiatives- as optional programmes- were poorly subscribed (Espey et al, 2005). Other optional, collaborative, trial-run programmes in abortion training during OB/GYN rotations and clerkships have been more successful, demonstrating that students are highly receptive to receiving instruction in TOP methods. For example, of the 68% OB/GYN clerkship students who opted to participate in a clinical experience in abortion care at the University of New Mexico, 38% reported a change in their attitudes towards abortion, and 94% became more supportive of women's access to abortion services as a result of the experience (Espey and Dorman, 2004). Regardless of the mandatory or elective nature of TOP training- where available at all- many students and TOP advocates feel that opportunities to receive education about TOP and TOP-related issues are severely limited (Espey et al, 2005; Edwards, 2001; Wear and Keck-McNulty, 2002).

The MBChB curriculum at the University of Cape Town currently offers a lecture on TOP law in the 3rd year, an ethics case study and discussion on TOP in the 4th year, and two trimester TOP observations in the 5th year. Students who conscientiously object to TOP can opt not to participate in these clinical observations.

In developing countries where TOP is legal, information is scarce regarding training programmes and opportunities for education in abortion care. Evidence from South Africa suggests that much more could be done to include abortion education in preclinical (first and second year) instruction and in rotation and/or residency programmes for general practitioners and advanced clinical practitioners (van der

Westhuizen, 2001; IPAS, 2002). In South Africa, the 5-year report on TOP legislation implementation in the Western Cape revealed that increased recruitment and training opportunities for health providers other than OB/GYN specialists was critical to ensuring adequate provision (Adamo, 2003). The design of the medical curriculum must evolve to include abortion training- optional or mandatory- in a variety of medical programmes, extending beyond OB/GYN residency programs into nursing and midwifery, general practice, and other relevant educational programmes (Foster et. al., 2003). In many South African communities, nurses and nurse-midwives are the main sources of health care for millions of women, particularly in rural and poor areas (Adamo, 2003; van der Westhuizen, 2001). Increasing the numbers of health professionals who are trained in providing abortions has the potential to address the geographic and socio-economic barriers to accessing TOP services in South Africa.

3.3 Knowledge, Attitudes, and Intentions With Respect to TOP

Health care providers

As primary sources for delivery of TOP services, health care providers are critical informants as to the feasibility, acceptability, and challenges of TOP provision.

The UK and Europe

Research on attitudes of general practitioners (GPs) in England towards abortion revealed that 82% of GPs identified themselves as pro-choice, and 60% supported liberalization of Britain's TOP law, that is, amending it to provide abortion on demand up to the first 14 weeks of pregnancy (Francome and Freeman, 2000). Two-thirds of broadly anti-abortion British doctors supported the current Abortion Act, indicating that while many GPs are personally opposed to TOP, they nevertheless recognize the current legislation as "preferable to having restrictive laws that could lead to a return to backstreet abortion or could force women to travel to other countries for treatment" (Francome and Freeman, 2000:190). Another study examining the influence of religious beliefs on general practitioners' attitudes towards TOP determined that Church of England Christians were less likely to agree with abortion for any reason than were physicians who reported no stated religion, demonstrating that religion can play an important role in influencing views towards abortion (Abdel-Aziz et al, 2004). Other personal characteristics, including age, sex, marital status, parental status, years practicing, and place of qualification, did not influence GPs' opinions on TOP significantly (Abdel-Aziz et al, 2004).

Unlike England, Ireland has no legal protection for abortion providers; the Northern Ireland legislature does not abide by the 1967 Abortion Act, and as a result, Irish women seeking abortion are forced to travel elsewhere to obtain the procedure (Black et al, 2001). Indeed, Irish physicians are liable for prosecution for providing abortions to women (Black et al, 2001). Notwithstanding the legal restrictions on TOP, several studies have indicated that Irish physicians feel that abortion should be legalized to protect women's health. Two-thirds of GPs believe a woman should be able to choose to have an abortion following consultation with her physician, and 73% indicated they would refer a woman for the procedure (Francome, 1997). However, different views were observed between Catholic physicians and doctors of other faiths (Francome, 1997). In a more recent survey of obstetricians, gynaecologists, and family planning doctors in Northern Ireland, the majority of respondents (90%) believed TOP should be legalized at least in some circumstances and that mifepristone (and other forms of medical abortion) should be licensed for termination of pregnancy in Ireland (Black et al, 2001).

A survey of midwives and gynaecologists in Sweden demonstrated that the vast majority agreed with the current law which legalizes voluntary abortion; respondents also believed that a woman alone should make the decision to abort her pregnancy (Hammarstedt et al, 2005). This study suggested that Swedish health professionals working in reproductive health had become more liberal with time, as compared with studies in previous years. Furthermore, the factors most closely linked to views on abortion included the extent to which health professionals had worked in abortion care (especially within the last year) and type of profession; personal experience of having obtained an abortion was somewhat surprisingly not associated with opinions (Hammarstedt et al, 2005).

In Russia, where TOP was used as the main method of birth control by women for years, gynaecologists responding to a survey indicated that they believed women would rather use contraception instead of abortion, but that information about both TOP and contraception was lacking in Russian communities (Visser et al, 1993). As such, the study concluded that Russian gynaecologists were critical sources for reproductive information among female patients seeking contraceptive methods and/or abortion. This study also suggested that Russian gynaecologists were receptive to providing family planning services and TOP services, as well as patient counselling in these areas of reproductive choice (Visser et al, 1993).

United States

In the US, opinions are varied on legal abortion, although most health professionals believe abortion should be legally provided in some form for certain circumstances (e.g., the pregnancy poses a risk to the woman's physical or mental health). A study in New York determined that the overwhelming majority of physicians were supportive of abortion for medical reasons, and many physicians were supportive of abortion for any reason (Aiyer et al, 1999). Attitudes were significantly associated with being non-Catholic and having received training in residency programmes that included abortion training (Aiyer et al, 1999). Willingness to provide abortion was mixed, but the most important factors influencing a physician's decision not to provide TOPs were lack of training and moral/religious beliefs (Aiyer et al, 1999). Among family and general practice physicians in Kansas, just over one half of respondents identified themselves as pro-choice, however, 78% believed abortion should be legal (Westfall et al, 1991). Only 8% reported that they believed that abortion should be criminalized, although one third identified themselves as pro-life, indicating perhaps that even some pro-life proponents may believe abortion is unavoidable in some circumstances. Factors associated with beliefs towards abortion included sex and age of the physician responding; in general, women and physicians older than 40 years were more likely to support a woman's reproductive choice (Westfall et al, 1991).

African countries and Brazil

Literature on the subject of provider knowledge, attitudes, and practices towards TOP in Africa is scarce. In Ghana, only recently has the law allowed abortions to be legally performed in three circumstances: 1) if the pregnancy is the result of rape, defilement, or incest; 2) if the pregnancy would risk injury to the woman's mental or physical health, and; 3) if there is serious risk that the foetus suffers from severe abnormality or disease (Lithur, 2004). In spite of the legal provision of TOP under these circumstances, great value is placed upon a woman's fertility in Ghanaian communities, and as such, many women continue to seek clandestine abortion outside formal health service facilities to avoid being discovered in their communities (Lithur, 2004). Physicians are therefore playing an important role in educating women about legal abortion, expanding community awareness of the risks and benefits of safe and unsafe TOP, improving access to services within formal health facilities, and helping to address the stigma towards reproductive choice in the community (Lithur, 2004).

In South Africa, evidence from studies conducted among registered nurses and midwives has demonstrated that significant numbers of these health professionals are willing to be trained in performing TOPs and are capable of providing high quality,

effective TOP care comparable to that provided by physicians (Dickson-Tetteh and Billings, 2002; van der Westhuizen, 2001). Other studies have demonstrated that values clarification workshops and educational initiatives around abortion can have significant positive effects on knowledge, attitudes, and behaviours among health professionals and other reproductive health and community stakeholders (Mitchell et al, 2005). According to Hord and Wolf, clinicians at all levels are often highly influential members of African communities and can be powerful motivators for policy change in African countries with regards to TOP law (2004). Considering the high burden of disease from abortion-related complications in African countries, physicians in these countries may have more direct experiences with adverse events and the long-term consequences of unsafe abortion and as a result, may be more likely to advocate for TOP policy change (Hord and Wolf, 2004).

In Brazil, a recent study found that among obstetricians and gynaecologists, less than half reported accurate knowledge about Brazil's abortion law- which is highly restrictive- and one-third reported having previously performed an abortion (Goldman et al, 2005). Seventy-seven percent believed the law must be liberalized to help address maternal mortality and morbidity resulting from unsafe abortion. Physicians who were in favour of liberalizing abortion laws were more informed about the current law, were more knowledgeable about various methods of safe abortion, and were in favour of public funding for abortion and abortion-related services (Goldman et al, 2005).

Health care providers in training

As the 'new generation' of health care providers, medical students in training are an important component of future provision of abortion services. Their knowledge, attitudes, and intentions with respect to abortion may provide insight about future practice, as well as point to opportunities for training, values clarification, and recruitment to the field of TOP care.

United States

Views of medical students towards abortion have been fairly well documented in the United States. For the most part, American medical students support the availability of legal abortion in many circumstances (Rosenblatt et al, 1999; Stennett and Bongiovi, 1991; Espey et al, 2004; Schwarz et al, 2005; Shotorbani et al, 2004; Klamen and Grossman, 1996). In one study at the University of Washington, the majority of medical students believed in the provision of reproductive health services, including abortion, and 58% felt that first trimester abortions should be legal on demand (Rosenblatt et al, 1999). Of the students who expected to enter either family practice

or OB/GYN care, more than 55% intended to personally provide TOP services. Age, sex, plans for specialization, and pro-life/pro-choice self-identity were all associated with attitudes towards and future intentions to perform abortions. Less that 10% of the whole sample believed TOPs should not be legal in any circumstances (Rosenblatt et al, 1999).

A study conducted in the early nineties among medical students at Columbia University in New York City determined that 86% of those surveyed by campus mail described themselves as pro-choice, and religion/religiosity and sex was significantly associated with self-identification in the pro-life contingency (Stennett and Bongiovi, 1991). Specifically, the anti-abortion group was largely comprised of men and people from Catholic backgrounds. Further, the vast majority disagreed with restrictions on abortion which would limit minors' access to services, restrictions which would limit service provision to cases of maternal risk, and those which would limit service provision to less than 20 weeks gestational age (Stennett and Bongiovi, 1991). Overall, 80% of respondents reported their attitudes towards abortion had not significantly changed since starting medical school; however, the students surveyed had completed only pre-clinical training and therefore were not representative of students who had finished the clinical years and OB/GYN rotations. Additionally, the vast majority of these students already supported abortion.

In South Africa and other similar settings, attitudes towards abortion may be more likely to change after completion of clinical training (Stennett and Bongiovi, 1991).

A self-administered questionnaire-based study among second year medical students (preclinical students) at one large urban university in the US revealed that students with previous sexual experience and students who had been tested for HIV held more liberal attitudes towards abortion than those with no sexual experience and students who'd never been tested for HIV (Klamen and Grossman, 1996). As to the statement, "I would never perform or refer a patient for an abortion under any circumstances" (14% of the sample agreed to this statement), men were much more likely than women to agree with the statement, as were people never tested for HIV. The authors concluded that as young people are increasingly exposed to social/sexual experiences they may become more liberal, suggesting an age and educational component to negotiating and renegotiating attitudes and beliefs about TOP (Klamen and Grossman, 1996).

Another study on attitudes and intentions of future health care providers at the University of Washington included students of medicine, as well as advanced clinical practitioners in the physician assistant programme and the School of Nursing (Shotorbani et. al., 2004). Researchers found that overall 70-73% of respondents supported "the availability of legal abortion under any circumstance" and the statement, "it's acceptable for a woman to choose abortion because of foetal anomaly or congenital disorder" (Shotorbani et. al., 2004:61). Significantly more nursing and physician assistant students than medical residents indicated that they would not have the opportunity in their respective curricula to train in abortion techniques (16-17% versus 3%). However, advanced clinical practitioners in training expressed interest in being trained in abortion techniques; significantly more nursing students and physicians assistant students than medical students agreed that advanced clinical practitioners should be able to provide abortion services. The authors suggest that this difference may be due to professional territoriality and defensiveness by medical students about perceived roles and duties, and a concern that TOP is outside the scope of training for advanced clinical students (Shotorbani et al, 2004). Increasing the number of advanced clinical practitioners who are trained in TOP and TOP-related services- including registered nurse-midwives- may help improve access, availability and quality of care.

In the University of Washington study, overall, 90% of respondents reported they would be willing to refer a patient for TOP services if they were unable to perform abortion themselves (Shotorbani et al, 2004). Sixty-five percent of all respondents agreed that "every program which addresses women's health should include abortion training". The overwhelming majority of students in the Washington study indicated their willingness to attend a program that required abortion training and their willingness to take an elective course in abortion and abortion-related services, demonstrating that TOP could and should be included in standard medical curriculum planning (Shotorbani et. al., 2004).

With the recent development and licensing of mifepristone (RU486) and other medical abortifacient agents in the US, many authors argue that provision of abortion should be extended to other healthcare professionals beyond the traditional OB/GYN providers to help address access concerns. One study in California determined that as many as 84% of family practice residents, 83% of gynaecology residents, and 42% of internal medicine residents were willing to provide medical abortion (Schwarz et al, 2005). In multivariable analysis, training factors- such as knowing how to perform 'backup' procedures in the event of incomplete abortion- were highly predictive of whether internists would be willing to provide medical abortion. This finding suggests

that better training in TOP techniques may make providers feel more comfortable offering abortion services because they feel appropriately qualified (Schwarz et al, 2005). Indeed, some studies have demonstrated that comprehensive clinical training in and exposure to abortion care can have a significant positive effect on student attitudes (Espey et al, 2004; Edwards, 2001). In one study at the University of New Mexico, the vast majority of students participating in a voluntary half-day clinical experience in abortion care in the third year rated the experience as highly informative and reported they would recommend it to other students (Espey et al, 2004). Moreover, 94% became more supportive of women's access to abortion services, and over eighty percent reported that the experience would enable them to better counsel patients about abortion and/or to provide TOP in the future (Espey et al, 2004).

Other barriers to future provision of TOP in the Schwarz et al study included having a personal moral opposition to abortion, being concerned about lack of adequate backup and ability to manage bleeding, being inadequately trained to counsel patients, and feeling that TOP services are not needed by most women. The majority of respondents also indicated that personal religious beliefs would not prevent them from providing medical abortion, even though nearly 80% reported that they were at least moderately religious (Schwarz et al, 2005).

South Africa and other countries

Literature on the subject is very limited in countries outside the United States. One study at the University of Transkei in South Africa assessed attitudes and practices of medical school students in a rural setting (Buga, 2002). Through their self-administered, anonymous questionnaire, investigators discovered that most of students agreed to the statement that abortion is murder either at conception or later (61%). However, the vast majority (87%) reported they would perform or refer for abortion if the patient met certain criteria. Students in the Transkei study- like the second year medical students in the previous US survey (Klamen and Grossman, 1996)- were more likely to report intentions to refer or perform TOP in cases of rape or incest, threat of physical harm to the mother, and physical defect or malformation in the foetus (Buga, 2002). Only 12.5% of participants in the Transkei study reported that they would perform or refer for abortion on demand, and 12.8% of participants reported they would neither perform nor refer for abortion under any circumstances (Buga, 2002). Religious affiliation was strongly associated with positive and negative responses of participants towards abortion services provision.

A study conducted among medical and non-medical students at four universities in Karachi, Pakistan, showed that medical students were more knowledgeable than non-medical students about the legality of abortion in Pakistan, medical students were more likely to view induced abortion as a serious health issue, and most medical students felt the need to modify the Pakastani law regarding abortion, particularly in situations of foetal abnormalities or rape (Kumar et al, 2002). Further, more non-medical students than medical students perceived abortion as a form of family planning (Kumar et al, 2002). Another study conducted in Sri Lanka showed that the vast majority of physicians and medical students (93% and 81%, respectively) felt that abortion was an acceptable course of medical action if a gross congenital defect was detected in the pregnancy, and an additional 87% of doctors and 80% of medical students supported a change in Sri Lankan law to allow safe, accessible termination of pregnancy (Simpson et al, 2003). Significant numbers of physicians and students were interested in advocating for liberalization of TOP law in this country (Simpson et al, 2003).

Limitations of the literature

Generalizability to the African context

The results of many of the studies on this topic may not be generalizable to other populations. As previously mentioned, most of the literature on medical students' knowledge, attitudes, and future intentions with respect to abortion is from the United States. Data from the US may not apply in the African context. Considering that the political and social conditions in South Africa are unique (i.e., history of apartheid, liberal CTOP legislation), literature from the United States may not accurately or relevantly reflect the socio-political nuances of the South African health system, as they affect TOP provision.

In addition, the literature presented here may not even be generalizable beyond the university or research context within which it was collected. For example, the University of Washington study and the University of Illinois study were conducted at large, urban universities in the US, where attitudes towards abortion may be more liberal than in other regions of the US and elsewhere (Klamen and Grossman, 1996; Shotorbani et. al., 2004). The US in recent years has politicized the abortion debate to such a degree that US health professionals in training may be significantly more polarized around the issue in certain regions of the States (Shotorbani et. al., 2004). Additionally, the Illinois study, UCLA study, and University of Washington study may not be generalizable to all students within their respective universities, because only second year medical students at Illinois, freshmen entering UCLA, and first and second year medical students at Washington were selected (Klamen and Grossman, 1996;

Reisberg, 1999; Rosentblatt et al, 1999). Younger people, as has been demonstrated, are more likely to hold conservative views compared to their older, more educated and more socially/sexually experienced peers (Klamen and Grossman, 1996; Reisberg, 1999; Rosenblatt et al, 1999).

The current study applies specifically to South Africa and is particularly important because it examines the knowledge, attitudes, beliefs, and intentions of future South African medical providers in the context of the CTOP Act, which has been effective now for nearly one decade. Further, this study examines all six years of medical school students from one large urban university in South Africa, rather than a sub-sample of students. Buga's University of Transkei study also examined knowledge, attitudes, and intentions of future health providers following passage of the CTOP Act, but limited its scope to a small rural medical university (2002). Additionally, Buga's data was collected soon after the law passed, before the Act could be effectively implemented. Although complete implementation remains a work in progress, significant strides have occurred in the last few years; thus, a more recent assessment of future health professionals' knowledge, attitudes, beliefs, and intentions is essential to TOP services planning.

Lack of data

A paucity of research exists around TOP in developing countries; most of the information we have on the topic comes from Westernized, developed nations. The University of Transkei study is likely more indicative of the South African climate around the abortion debate; however, this study, too, is not representative of all of South Africa, as it was conducted at a small university in a rural setting where people may hold more conservative views on the topic (Buga, 2002).

The current study contributes to the existing literature on the topic in that it investigates knowledge, attitudes, beliefs, and intentions among South African medical students in a large university in an urban environment. To our knowledge, currently no such research exists.

Response rate

Sample selection and proportion of sample responding are important considerations in an attitudes and intentions survey. In several of these studies response rates were well below 80%, particularly in studies using mailed questionnaires. An in-person sampling mechanism using a full cohort sample therefore emerged as the best mode of collecting

truly representative data in the cross-sectional survey we conducted (Shotorbani et. al., 2004; Cook and Jelen, 1993).

Our study achieved a high level of response by recruiting students directly through course lectures, which most medical students attend regularly. Access to medical students in the classroom was made possible by obtaining prior approval from the instructors. By approaching students in this manner, as opposed to mailing questionnaires or using telephone surveys, we achieved a better response rate and captured more of the student population in all six years of medical school.

Predicting service provision: the strength of the questionnaire

Another major limitation in several studies is that the intention to seek out TOP training and the intention to provide or refer for abortion may not directly predict service provision in the future. As most the studies were anonymous and did not include follow-up, there is no way to reasonably track student careers to determine whether intentions accurately reflect future practice (Shotorbani et. al., 2004). Optimally, studies would follow a cohort of students through a specified time period to determine the outcome of provision; however, this is extremely difficult given the sensitive nature of this issue, and in some cases, ethical considerations concerning the climate of violence, harassment, and stigma around abortion providers. Furthermore, external issues including malpractice/provider insurance premiums with TOP clauses and administrative or facility-based regulations or infrastructure constraints preventing TOP provision may be deterrents to actual services being offered in the future, despite the clinician's openness to being trained and to providing TOP services.

Methodological considerations: specificity of the instrument

Finally, some studies are limited by the type and form of questions they included on their instrument. In one article reporting on methodological and substantive concerns in measuring attitudes around TOP, data from abortion polls in the US were analyzed by the type of questions (generic or specific) posed to survey participants (Cook and Jelen, 1993). The authors reported that general questions (such as "I align most with the [pro-choice/anti-choice/don't know] contingency") and/or questionnaires that were too brief/non-specific regarding TOP tended to produce more dichotomous and seemingly stronger opinions on the subject, than did questionnaires employing more specific questions. When specific questions were utilized, respondents appeared much more ambivalent about the issue of abortion, suggesting a finer distinction in gauging attitudes and beliefs, than was previously reported in large polls. Moreover, wording and question order had important roles in determining subject response. Using

seemingly repetitive questions, worded slightly differently, produced a more nuanced assessment of peoples' attitudes and highlighted inconsistencies in subjects' responses, all of which when considered made for a better measurement tool (Cook and Jelen, 1993). Comparing Cook's and Jelen's questionnaire construction technique to the instruments used in the previously described studies, it is evident that several of them were far too generic and/or too brief to be completely trustworthy indicators of respondents' attitudes.

Another major concern surfaces with the grouping of certain attitude/intentions questions into one question, namely the grouping of questions dealing with provision with questions dealing with referral. The intention to provide and the intention to refer are considerably different positions, yet many of the instruments utilized grouped these two together (example, "I would neither provide an abortion, nor refer a patient for an abortion under any circumstance") (Klamen and Grossman, 1996; Buga, 2002; Francome, 1997). Such a question is not necessarily exhaustive or exclusive. A better questioning technique was developed in the Washington study, which fully separated intentions to provide and intentions to refer, as well as attitudes relating to provision and referral (Shotorbani et. al., 2004). An ideal instrument would be able to identify different levels of willingness, reflecting the nuances of attitudes towards training, education, provision, and referral. Using Cook's and Jelen's guidelines for instrument development, separating questions where there is confusion and/or ambivalence is a far more desirable approach to gaining a true assessment of respondents' feelings on sensitive issues, though the questionnaire may be lengthened by the effort (1993).

The instrument used in the current study was specifically developed for the purposes of this research and was informed by previous literature on developing questionnaires reflecting knowledge, attitudes, beliefs, and intentions about TOP. We aimed to develop both broad and specific questions to better identify nuances in respondents' views, and we specifically incorporated some repetitive ideas to effectively gauge consistency in responses. Questions about intentions to provide TOP versus intentions to refer patients for TOP were explicitly separated to ascertain different views about each element of involvement in TOP service provision. A Likert scale was utilized to attempt to accurately measure fine distinctions in opinions about abortion. More information on development of the questionnaire is detailed in the methods section of this paper.

The questionnaire was piloted among a small sample of women's health faculty members, health sciences students not involved in this particular study, and other

collaborators for this project. Following piloting, suggestions and concerns about content and format were incorporated into the questionnaire.

4.0 METHODOLOGY

4.1 Study Design

This was a cross-sectional, quantitative survey.

4.2 Population

The population was all medical students (years one through six), currently enrolled at the University of Cape Town in the MBChB medical training programme.

4.3 Sampling

This study intended to capture a whole sample of first through sixth year medical students attending the MBChB programme at the University of Cape Town.

The following people were excluded from this study:

a) Students not attending the designated class lecture or meeting when the instrument was disseminated (We did not make attempts to seek out these individuals.)

b) Occasional students or any other person 'sitting in' on class lectures

Lists of total class numbers were obtained from the medical faculty to determine what proportion of medical students responded to the study. Response rate information is detailed in Appendix A, Table 9.

4.4 Data Collection Procedures

First through sixth year students were approached at the beginning of one of the core curriculum lectures or mandatory class meetings. Prior arrangements were made with medical faculty members and/or lecturers to organize and designate an appropriate time to administer the questionnaire. Voluntary consent to participate was obtained from students following an explanation of the purposes and intentions of the study. Consenting students agreed to participate by indicating their consent with a mark (in an effort to maintain complete confidentiality). The consent form was included on the

first page of the questionnaire (see Appendix B). Students who agreed to participate completed one self-administered, structured questionnaire (see Appendix B) during the beginning of a scheduled medical lecture or class meeting period. The questionnaire required approximately 15-20 minutes of class time to complete.

4.5 Development of Study Instrument

Structure and content

The study instrument was developed based on experiences and limitations reported in the literature (Buga, 2002; Rosenblatt et al, 1999; Stennett and Bongiovi, 1991; Schwarz et al, 2005; Mogilevkina et al, 2001; Simpson et al, 2003; Kumar et al, 2002; Francome, 1997; Klamen and Grossman, 1996; Carlton et. al., 2000; Cook and Jelen, 1993; Francome and Freeman, 2000; Espey et. al., 2004; Shotorbani et. al., 2004). According to Cook and Jelen (1993), the wording of questionnaires designed to capture knowledge, attitudes, and beliefs about abortion is of critical importance. In their analysis of several types of survey questions from abortion polls in the US, the investigators found that too general questions "overstate the strength of sentiments for positions at either end of the scale" (Cook and Jelen, 1993:120), while more specific questions allow for a considerably more nuanced assessment of subjects' attitudes and feelings about TOP. In sensitivity analyses comparing wording of questions (general or specific) among the same study subjects, these authors discovered that specific questions regarding views on TOP tended to produce more "middle-roaders" on the issue than previously reported. We therefore attempted to include as many specific questions as possible in our instrument design and to insert several general questions as well to gauge consistency and internal validity in the data.

The instrument was quantitative and structured, with closed-ended questions. A comments and questions section was included at the end of the questionnaire. Slightly different versions of the instrument were used for the six medical classes, due to class time available for completion of the questionnaire. However, the core questions were exactly the same. The complete, anonymous, 63-item questionnaire utilized true/false questions and five-point Likert scale questions (e.g., "1" was equivalent to "highly agree", whereas "5" was equivalent to "highly disagree") and consisted of five domains: 1) sociodemographic information; 2) knowledge and understanding of TOP legislation; 3) attitudes towards TOP; 4) medical curriculum and training in TOP services; and 5) future intentions pertaining to TOP provision (See Appendix B).

Pilot study

The instrument was piloted among a small sample of women's health faculty members, health sciences students not involved in this particular study, and other collaborators for this project. Following feedback, the instrument was edited and revised to reflect issues raised during the piloting period. The pilot study enabled us to:

a) Assess the viability of classroom administration (among health sciences students)

b) Test the consent form, instrument and timing, and coding of data

c) Determine appropriateness of questions and willingness to respond to sensitive and/or thought-provoking questions

d) Check internal validity of questionnaire (through similar questions posed differently to gauge reliability of subject's response and strength of instrument to detect attitudes, knowledge and intentions)

Language

As primary instruction in the medical programme is delivered in English, we did not translate the questionnaire into other South African languages.

4.6 Quality Control and Data Entry

Each student record was identified only by a unique ID number. Under direction of the principal investigator, the data was checked and rechecked for completion, clarity. Data was coded, where appropriate, and prepared for data entry. Information was then entered into a backed-up, password-protected Access database using a data entry template designed for this study, with built-in error checking. Frequencies were tabulated in Stata (version 8; Stata Corporation, College Station, TX), and where appropriate, outliers and inconsistencies were checked against the original forms for manual correction if required. Missing variables and incomplete questions were coded "missing". All files and original forms were securely maintained and were accessible only by study staff.

4.7 Data Analysis

Descriptive analysis

Data was first analyzed for descriptive outcomes, including proportions, means, medians, and ranges. All data was stratified according to medical class. For Likert scale questions, variables were transformed from five-scale responses into general

three-scale fields ("agree" / "neutral/don't know" / "disagree"), and basic univariate analyses were repeated for the transformed data.

After calculating overall frequencies and descriptive statistics, Likert scaled responses were further collapsed into simple binary variables to test against a variety of sociodemographic and other controlling variables for any associations in the data: Core questions were systematically selected for bivariate analysis based on the literature. For these variables, a dichotomous variable was generated, (collapsing "agree" and "strongly agree" to "Supportive" versus "disagree" and "strongly disagree" to "Unsupportive"). For this analysis, neutral responses were not included. While neutral responses were not considered in the comparative bivariate analysis, the raw numbers of people and proportions of people responding neutrally are reported in the descriptive/frequency distribution tables.

Bivariate analysis

Bivariate associations between knowledge, attitudes, and beliefs around TOP and personal characteristics of participants were reported using cross-tabulation. Statistical analysis utilized Pearson's chi-square tests and Fischer's exact tests, as appropriate. P-values of 0.05 or lower were considered statistically significant.

Multivariate analysis

Multivariate analysis was not employed, as it was not necessary to achieving the objectives of this study.

All analyses were performed in Stata (version 8; Stata Corporation, College Station, TX).

5.0 APPROVALS

Permission to conduct this research survey was obtained from the following parties:

- Administrators and convenors in the University of Cape Town MBChB programme
- Individual lecturers in whose lecture period the surveys were disseminated
- Head of the School of Public Health and Family Medicine, UCT
- School of Public Health research committee, UCT
- Formal ethical approval was granted on February 25, 2005, by the Research Ethics Committee within the University of Cape Town's Faculty of Health Sciences.

6.0 HUMAN SUBJECTS PROTECTION

Ethical considerations for study participants followed the International Guidelines for Ethical Review of Epidemiological Studies (1991).

6.1 Consent Procedure

The investigators obtained informed consent from subject participants prior to conducting data collection. The information and consent process explained:

a) Purpose of the study

b) Voluntary nature of participation (No incentive was offered, and subjects had the right to terminate involvement at any time.)

c) What would be involved in participation, including the time required to complete the questionnaire

d) Protection of participant privacy and confidentiality

e) Complete anonymity of involvement (No names were recorded anywhere on the study instrument or on the consent form.)

f) Risks and benefits of participation

g) Participant's rights to decide not to be involved, to refuse to answer any question, or to withdraw with no penalty

h) Participant's right to ask questions or express any concerns

Prior to distributing the questionnaire and consent form (the consent form was located at the beginning of the questionnaire for students' convenience), the researcher explained to students the purposes and guidelines for involvement and allowed an opportunity for questions.

Because primary instruction in the medical programme is delivered in English, we did not translate verbal instructions and study information, the consent portion of the questionnaire, or questionnaire itself into other South African languages.

6.2 Protection of Privacy and Confidentiality

Data was collected from medical students using an anonymous, self-administered questionnaire, which required approximately 15-20 minutes to complete, depending upon the version of the instrument used. Following completion, the questionnaires were returned to the researcher, placed in a manila envelope, and taken immediately to the office of the principle investigator. These were secured until data entry began,

accessible only by the researcher and principle investigator. No names were recorded onto the instrument, and no personal identifying information has been, nor will be, disclosed in reports, publications, or presentations. Lecturers and medical faculty had no access to any students' forms, nor did anyone else outside the research team. All paper and electronic data were identified by a unique identification number and were kept in a secure place at all times. Following completion of this research, paper files will be held for a minimum of five years and subsequently destroyed.

6.3 Risks and Benefits of Participation

This research was non-invasive and anonymous. There were no direct risks of causing physical or economic harm to participants in this study. While some of the questions are clearly sensitive in nature, participants were fully informed of their rights to refuse to answer or to withdraw at any time. Moreover, participants were encouraged to consult the research investigator if they had questions or concerns while participating. Participants were also encouraged to discuss their feelings about TOP and TOP-related activities with a UCT student mental health counsellor or therapist in the event that completing the questionnaire caused emotional or mental discomfort.

Loss of protection of confidentiality is unlikely, as no names were recorded, and forms were viewed only by the research team. Stringent procedures for observing protection of privacy and anonymity were followed.

There were no immediate benefits to future health professionals completing this survey. However, results provide an indication of the current level of knowledge about and demand for TOP training in the medical programme curriculum, and may help direct curriculum development for prospective students. Furthermore, information about attitudes and intentions of future health providers may inform stakeholders about the challenges and demands of TOP delivery and TOP legislative roll-out in coming years. Benefits to the community as a whole include potential improvement of reproductive health services and increased availability and access to services where there is currently unmet demand for TOP.

Findings from this research will be disseminated widely among reproductive health and health policy stakeholders, medical administration and curriculum development faculty at UCT and other universities, and the community at large.

7.0 RESULTS

882 students completed the self-administered questionnaire out of 1100 eligible enrolled students in 2005, for an overall response rate of 80.2%. Among medical classes, the response rates did not vary significantly, with the exception of sixth year students (response rate 55.9%). Overall and class-specific response rates are further detailed in Appendix A, Table 9. Respondents consisted of 186 first year students (21%), 177 second year students (20%), 118 third year students (13%), 150 fourth year students (17%), 166 fifth year students (19%), and 85 sixth year students (10%).

7.1 Socio-demographic Characteristics (Table 1)

The socio-demographic characteristics of respondents are summarized in Appendix A, Table 1, stratified by medical school class.

The majority of the MBChB student population was female (63%).

In terms of religious affiliation, the majority of students identified themselves as "Christian, non-Catholic" (56%), while 14% were Muslim, followed by 11% Catholic, 7% Hindu, 7% agnostic/atheist, 3% "other religion", and 3% Jewish. In terms of frequency of religious service attendance, most students attended services regularly (44%). Twenty-three percent of all respondents reported that they did not attend services often, while eleven percent of the sample reported never attending religious services.

First through third year students were asked about nationality and the area where they were raised, in terms of province (if South African) and type of residential area. Of these students, 87% reported South African nationality, while 65 students reported having another nationality, the majority of which were other African nationalities. Of the South African students, the majority (37%) grew up in the Western Cape. Another 22% reported growing up in Kwa-Zulu Natal, while 16% reported the Eastern Cape and 12% reported Gauteng. In terms of type of residential area raised in, most students reported either an urban/city environment (42%) or suburban environment (35%). Eleven percent reported having grown up in a township, while another eleven percent reported having been raised in a rural or farming community.

All students were asked about the population group with which they most closely identified themselves. Overall, more than one third answered "African", while another

31% of students answered "White". The remaining students consisted of fourteen percent answering "Coloured", seventeen percent answering "Indian", and three percent replying "other".

7.2 Sexual History and Relationship Status (Table 1)

Sexual history and relationship history characteristics of respondents are shown in Table 1. Nearly 39% of all students were single, but currently dating someone. Thirty-seven percent were single and not currently in a relationship, while roughly one-fifth of students reported that they had never been in any relationship. Upperclassmen were more likely to report having been involved in at least one relationship compared to younger students (36% of first years reported never having dated someone, compared with 24% of second years, 19% of third years, 10% of fourth years, 13% of fifth years, and 13% of sixth years).

In terms of sexual experience, almost 40% had engaged in sexual intercourse. Upperclassmen were more likely to report having ever had intercourse (62% of sixth years and 52% of fifth years had ever experienced sexual intercourse compared with 21% of first years and 34% of second years).

7.3 Knowledge of Abortion (Table 2)

Table 2 presents knowledge about abortion, abortion legality, and related topics. Respondents were asked to indicate "true", "false", or "don't know/uncertain" in response to a series of statements listed on the questionnaire.

Availability of abortion on request

Students were asked whether legal abortion on request was available in South Africa. The correct answer to this question was "true". The overwhelming majority of students knew that legal abortion on request was available in South Africa (95%). Students were also asked to indicate whether women could obtain an abortion for any reason up to 12 weeks gestation. The correct answer to this question was "true". Nearly 86% of all respondents answered correctly. However, one-third of first year students and 21% of second year students answered "don't know/uncertain" to this question, while over 94% of all third through sixth year students answered this question correctly.

Knowledge was relatively poor regarding the following statement: "Between 13-20 weeks, women can obtain an abortion ONLY if the pregnancy presents physical harm to the mother", 48% indicated that the statement was true, while 36% indicated the statement was false, and another 16% were uncertain. The correct answer to this statement was "false". Again, first and second year students tended to respond "don't know/uncertain" at higher proportions than their upperclassmen counterparts (43% of first years and 27% of second years answered "don't know/uncertain"). With respect to the statement, "Beyond 20 weeks, abortion is illegal" (the correct response should have been "false"), one-third indicated that the statement was true, 44% indicated that it was false, and nearly a quarter were uncertain, with more first and second year students answering "don't know/uncertain" than other students (47% of first years and 38% of second years). The majority of third, fifth and sixth year students, however, answered both of these questions correctly.

Abortion facilities

Students were asked to indicate whether they knew of at least one clinical facility where a woman could obtain TOP services. Sixty-nine percent were aware of at least one facility where abortions were performed (90% of fifth years and 94% of sixth years knew of a facility, compared to 45% of first years and 59% of second years). Respondents were also asked to indicate whether they knew someone who had an abortion; 42% of all students indicated they did know someone, while 47% indicated they did not.

Cost of abortion in public health facilities

When asked to respond to the statement "Abortion is free in public health facilities in South Africa", the majority (61%) of all students answered "true", which was correct. Higher proportions of third through sixth year students answered "true" than first and second year students (only 27% of first years and 57% of second years answered that this statement was true, compared to 66-84% of all other students). The majority of first years (62%) were uncertain as to whether abortion is free in South African public health facilities.

Providers of abortion

With respect to the statement, "Only doctors can perform TOP", most students correctly indicated that this statement was false (56%), with variation among the medical cohorts (94% of third years and 81% of sixth years answered false, compared to 36% of second years and 43% of fourth years answering false). Higher proportions

of first and second year students were uncertain about this statement than were other classes (45% and 36%, respectively).

Safety of TOP when performed by trained and untrained providers

When asked whether TOP procedures are safe when performed by trained medical professionals, over three-fourths of all students indicated that the statement was true. While 82-92% of third through sixth year students indicated that abortions are safe when performed by trained clinicians, only 64% of first years and 63% of second years answered "true" to the statement. 20% and 15% of first and second year students, respectively, were uncertain about this statement. Upon being asked to reply to the statement "When performed by an untrained person, TOPs are safe", the overwhelming majority of respondents replied that this statement was false (92%).

Characteristics associated with knowledge about TOP

Tables 2a and 2b present the socio-demographic and personal characteristics associated with knowledge about TOP. With respect to the statement "Legal abortion on request is available in South Africa", women were slightly more knowledgeable than men (females 99%; males 97%; $p<0.05$). Membership within certain population groups was significantly associated with correct responses to this statement ($p<0.01$); people identifying themselves as African or Coloured were better informed about the legality abortion in South Africa.

Regarding the statement "I know of at least one facility where a woman can obtain a TOP", as year in medical school increased, so did proportions of people who knew of a facility where abortions could be obtained ($p<0.0001$). Men were more likely than women to know of a facility were abortions could be obtained (85% versus 83%; $p<0.05$), as were people who had ever engaged in sexual intercourse (89% versus 81%; $p=0.005$) and people who knew someone who had an abortion (89% versus 80%; $p=0.007$). Having ever been involved in a relationship was also associated with affirmative responses to this statement ($p=0.03$).

7.4 Abortion Attitudes and Beliefs (Table 3)

Responses to questions associated with abortion attitudes and beliefs are summarized in Table 3. Most students (62%) did not support the statement "TOP should be legal for any reason". Twenty-four percent agreed that abortion should be legal regardless of reason, and approximately 14% were neutral. With each increasing year in medical

school, a higher proportion of respondents agreed that TOP should be legal for any reason (i.e., 11% of first years in agreement to 42% of sixth years).

Most students (51%) disagreed with the statement "I believe abortion is morally unacceptable for any reason", with proportionally more students disagreeing with increasing year of medical school (31% of first years, 49% of second years, 61% of fourth years and 76% of sixth years).

Over two thirds of students were unsupportive of the statement "I believe that abortions should not be provided for any reason". Again, a greater proportion of students answered in disagreement with increasing medical education (83% of sixth years disagreed compared with 51% of first years and 60% of second years).

With respect to the statement "I believe that a woman should have the right to decide for herself whether or not to have an abortion", most students agreed (69%). Likewise, most students also indicated that they agreed with the statement "I believe that abortion should be a personal choice" (62%).

When first through third year students were asked whether safe abortion should be legal and accessible, students were mixed in their opinions, with a slight majority (46%) agreeing, 39% disagreeing, and 15% reporting that they were neutral.

When students were asked about the legality of abortion with certain restrictions, 84% agreed with the statement "TOP should be legal if a woman's physical health is endangered by the pregnancy". Higher proportions of fourth years (97%) and sixth years (91%) agreed with this statement than other years (for example, only 71% of first years were in agreement). Two-thirds of respondents agreed that TOP should be legal if a woman's mental health is endangered by the pregnancy, and 64% of all students agreed that elective abortion should be legal if congenital defect or malformation is present in the pregnancy. Proportions of students in agreement with these two questions increased with increasing year in medical school. The majority of students also agreed to the statements "TOP should be legal if a woman was raped and became pregnant" (63%) and "TOP should be legal if pregnancy was the result of incest" (55%). Support for these statements increased as years spent in medical school increased.

Students were more mixed in their views when the pregnancy's effect on a woman's socioeconomic status was a consideration. 49% disagreed with the statement "TOP

should be legal if a woman cannot afford to have a child", while nearly one-third agreed with the statement, and 19% were neutral. The majority of students also disagreed with the statement "TOP should be legal if a woman would be forced to drop out of school to continue the pregnancy" (52% disagreed, 27% agreed and 21% were neutral). When asked whether TOP should be legal if the pregnancy was unplanned, the majority of students disagreed (55%, compared with 30% in agreement and 15% neutral); higher proportions of first year students answered that they did not support this statement (73%) compared with students in all other classes (42-58%).

First through third year students were asked about imposing legal restrictions on abortion. The majority of students indicated that they supported the following legal restrictions on abortion provision: requiring parental notification for girls under 18 years old (61%), specifying that an abortion cannot be performed after 12 weeks of pregnancy (42%), specifying that an abortion cannot be performed after 20 weeks of pregnancy (46%), requiring a doctor's statement that the woman's health is at risk (70%), and requiring a 5-10 day waiting period (68%). Most students indicated that they disagreed with imposing the following restrictions on abortion: requiring parental consent for girls under 18 years old (41%) and restricting a woman to only one abortion in her lifetime (46%). Respondents were mixed with respect to restrictions requiring partner consent (40% disagreed, while 39% agreed and 21% were neutral) and restrictions specifying that TOP could not be performed after 16 weeks pregnancy (38% agreed, 38% disagreed, and 24% were neutral).

The majority indicated that they believed the government should be responsible for providing TOPs as part of free, public health care (49% in agreement, compared with 30% in disagreement and 21% answering neutrally). When responses are examined by medical class, only first year students answered that they disagreed with the statement in higher proportions than they agreed (52% disagreed, while 28% agreed).

Characteristics associated with abortion attitudes and beliefs

Table 3a presents the characteristics associated with responses to the statement "Safe abortion should be legal and accessible". Because of time constraints, this question was posed only to first through third year students only. As years spent in medical school increased, students agreed with the statement in higher proportions ($p=0.001$). Religious affiliation impacted responses to this statement ($p<0.0001$), with people identifying themselves as Hindu, Jewish, agnostic/atheist, or practicing "other" religions expressing agreement with the statement in highest proportions (96%, 93%, 91%, and 75%, respectively). On the other hand, Catholics, non-Catholic Christians

and Muslims tended to disagree with legal and accessible abortion, with over seventy percent of Muslims being opposed to the statement. Few students who attended services regularly agreed with the statement (22%) compared to people reporting semi-regular attendance (72%) and people who attended not often (88%) or never (87%) ($p<0.0001$). Students who reported being single and currently in a relationship supported legal and accessible abortion in significantly higher proportions ($p<0.0001$), as did students who had ever engaged in sexual intercourse ($p<0.0001$).

Table 3b shows socio-demographic and personal attributes associated with responses to the statement "TOP should be legal for any reason". Factors associated with agreement included having been in medical school longer ($p<0.0001$), knowing someone who had an abortion ($p=0.004$), being non-Christian or non-Muslim ($p<0.0001$), not attending religious services regularly ($p<0.0001$), having been in any relationship ($p<0.0001$), having engaged in sexual intercourse ($p<0.0001$), and identifying one's self as white, African, or Indian (white 34% agreement, African 30% agreement, Indian 26% agreement; $p=0.02$).

Characteristics associated with responses to the statement "The government should be responsible for providing TOPs as part of free, public health care" are summarized in Table 3c. Factors associated with support for this statement included knowing someone who had an abortion ($p=0.004$), having been in medical school longer ($p<0.0001$), identifying one's self as Hindu, Jewish, "other" religion, or agnostic/atheist ($p<0.0001$), attending religious services semi-regularly, not often or never ($p<0.0001$), having been in a relationship ($p<0.0001$), and having had sexual intercourse ($p<0.0001$).

Those students who believed abortion is morally unacceptable for any reason tended to have spent fewer years spent medical school ($p<0.0001$). They were also more likely to know no one who had an abortion ($p=0.001$), to be Catholic, non-Catholic Christian, or Muslim ($p<0.0001$), to attend religious services regularly ($p<0.0001$), to have never had a romantic relationship ($p<0.0001$), to have never engaged in sexual intercourse ($p<0.0001$), and to be raised in a rural/farming community, suburban, or "other" community ($p=0.01$). These results are summarized in Table 3e.

Table 3f presents characteristics associated with responses to the statement "Abortions should not be provided for any reason". Although overall, most people disagreed with this statement, those who believed that abortions should never be provided were typically early in their medical education ($p<0.0001$), non-Catholic Christian

(p<0.0001), South African (p=0.007, as compared with non-South Africans), attending religious services regularly (p<0.0001), single and having never been in a relationship (p<0.0001), and sexually inexperienced (p<0.0001). Furthermore, people supporting this opinion tended to be uncertain as to whether they knew anyone who had an abortion previously (p=0.005)

Personal and socio-demographic attributes associated with responses to the statement about a woman's right to decide for herself to have an abortion are presented in Table 3g. Factors significantly associated with believing a woman should have the right to decide whether or not to have an abortion included: being beyond one's first year in medical school (p=0.01), being female (p=0.001), being non-Christian (Catholic and Protestant) and non-Muslim (p<0.0001), not attending religious services regularly (p<0.0001), being single but involved in a relationship (p=0.01), and having ever engaged in sexual intercourse (p<0.0001). Similar characteristics were associated with attitudes and beliefs regarding the statement "I believe that abortion should be a personal choice". These are summarized in Table 3h.

7.5 Attitudes about Health Care Providers' Rights and Responsibilities With Respect to Abortion (Table 4)

Table 4 summarizes responses to questions related to attitudes about health care providers' rights and responsibilities with respect to abortion. Regarding the statement "Health care providers who conscientiously object to TOP should be allowed to refuse to perform abortions", the majority of all respondents agreed (91%) across all six classes. Most respondents also agreed with the statement "Health care providers who conscientiously object to TOP should be required to refer patients seeking abortion to a non-objecting provider" (73%), with fourth year students supporting this statement in highest proportions (85%). First through third year students were asked about the statements "Health care providers who conscientiously object to TOP should be required to tell patients seeking abortion that they conscientiously object" and "Health care providers who conscientiously object to TOP should be required to tell patients about their right to have an abortion". Overall, the majority of these students responded that they supported both statements (59% supported informing patients of their objection, while 69% supported informing patients about their right to an abortion).

When asked whether in addition to doctors nurses should also be trained to provide abortions, the majority of students agreed (47%), while 30% disagreed, and 23% were

neutral. First and second year students answered neutrally in higher proportions than did upperclassmen. Third year students and sixth year students were in highest agreement with the statement (60% and 59%, respectively).

Characteristics associated with attitudes about health care providers' rights and responsibilities

Table 4a summarizes the characteristics associated with the belief that objecting providers should be required to refer patients seeking an abortion to a non-objecting provider. Personal characteristics significantly correlated with agreement with this statement included: being single and in a relationship ($p=0.001$); having engaged in sexual intercourse ($p<0.0001$); identifying one's self as Hindu, Jewish, agnostic/atheist, or another religion not listed ($p<0.0001$); and attending services irregularly or not at all ($p<0.0001$).

7.6 Attitudes towards Abortion Training (Table 5)

Forty-six percent of students believed that abortion training should be incorporated into the medical curriculum because it is a routine medical procedure (32% disagreed with the statement and 22% were neutral). 57% of sixth year students agreed with incorporating abortion training into the curriculum (57%) compared to 42-48% of other classes. First year students answered this question neutrally in highest proportions, compared to all other students. When students were asked whether they would be willing to attend a university whose curriculum required abortion training, 37% disagreed, 39% agreed that they would attend such a university, and nearly a quarter were neutral, with no particular trend among classes. Regarding the statement "I would be willing to attend a workshop on abortion and related issues", 67% of all students agreed that they would be willing. On the other hand, when students were asked if they would be willing to take a class that involved training in performing voluntary abortions, 41% indicated that they would not be willing to take such a class (39% in favour of taking the class and one-fifth neutral).

Most students agreed that issues related to abortion required more attention in the MBChB curriculum (54%, compared with 20% in disagreement and 26% neutral). Fifth and sixth year students, particularly, indicated in highest proportions that these issues required more attention in the curriculum (56% and 68%, respectively), and first, third, and fourth year students answered neutrally in higher proportions than did other classes (31%, 29%, and 35%, respectively).

When asked to respond to the statement "I think that most of my teachers and professors feel that abortion should be legal", the majority of all students were neutral (52%), compared with 37% in agreement and 11% in disagreement. However, upperclassmen answered affirmatively in much higher proportions than did first and second year students (44-58% of third through sixth years agreed, compared to 14% of first years and 21% of second years), and first and second years answered that they were neutral in much higher proportions than did other students. The large majority of third through sixth years agreed that most of their professors feel abortion should be legal; i.e., underclassmen generally did not know whether their professors were pro-life or pro-choice.

Most students agreed that they would like to receive more information about abortion and abortion-related health services (59%, compared with one quarter who were neutral and 16% who did not want to receive more information). Likewise, most students indicated that they intended to seek out opportunities to learn about abortion and abortion-related health services (42%, compared with 32% who were neutral and approximately a quarter who answered negatively).

Characteristics associated with attitudes about abortion training

Tables 5a and 5b summarize the socio-demographic and personal characteristics associated with positive attitudes towards the statements "Because it is a routine medical procedure, TOP training should be incorporated into the medical curriculum" and "I would be willing to attend a workshop on abortion and related issues". Factors significantly related to agreement with these statements were: not attending religious services regularly, being Hindu, Jewish, agnostic/atheist or answering "other" religion, being in a relationship currently, and having ever engaged in sexual intercourse. Additionally, with respect to the second statement "I would be willing to attend a workshop on abortion and related issues", nationality and plans for specialization played a clearer role (non-South Africans supported the statement in higher proportions, and those students who had no intentions of specializing in OB/GYN were least willing to attend an abortion workshop).

Tables 5c and 5e detail characteristics associated with willingness to take a class which involves training in performing voluntary abortions and related topics and willingness to receive more information about abortion and related topics. Generally, being non-Christian and non-Muslim ($p<0.0001$), attending religious services irregularly or not at all ($p<0.0001$), being of non-South African nationality ($p=0.01$), and having had sexual intercourse ($p<0.0001$) were all significantly associated with expressed willingness to

take such a class or receive more information. Further, males were more willing to take a class involving training in performing voluntary abortions (56% versus 44%; p=0.002). In terms of the statement "I intend to seek out opportunities to learn about abortion and abortion-related health services", similar associations emerged as significant (being Hindu, Jewish, or agnostic/atheist, reporting non-South African nationality, having had sexual intercourse, and being neutral about plans for specialization); additionally, age was significantly associated with intentions to seek out learning opportunities (22-23 year olds agreed most often; p=0.007). These are summarized in Table 5f.

The belief that issues related to abortion required more attention in the MBChB curriculum was significantly associated with year in medical school, religious service attendance, and relationship status. With respect to year in medical school, 84% of sixth years who had a non-neutral opinion agreed that abortion required more attention in the curriculum, a significantly higher proportion than was expressed in other classes (p=0.04). In terms of religious service attendance, students attending services regularly were more likely to respond that abortion-related topics did not require more attention in the curriculum (p<0.0001). Refer to Table 5d for a summary of these results.

7.7 Perception of Others' Attitudes towards Abortion (Table 6)

Participants also reported on the extent to which they agreed with a series of statements about others' attitudes towards abortion, specifically, their families' and friends' opinions. When presented with the statement "I believe most my friends think abortion should be legal", a slight majority of all students agreed (42%, compared with 33% who disagreed and one-fourth who answered neutrally). On the other hand, when presented with the statement "I think most of my family think abortion should be legal", most students disagreed (49%, compared with 27% who agreed and roughly one quarter who answered neutrally).

7.8 Intentions to Provide Abortion Services (Table 7)

Students were presented with a series of questions regarding intentions to provide terminations and to refer patients for abortion services. Results are summarized in Table 7. With respect to the statement "I intend to provide legal abortion services to women once I am qualified", the majority of students disagreed (over half, compared to 24% answering neutrally and 21% answering in agreement). First year students,

particularly, were most opinionated in terms of their disagreement; nearly two-thirds of first years disagreed with the statement, compared to 45-60% of students in other cohorts.

With respect to the statement "I would refer patients for abortion services, in situations where I cannot or will not provide those services myself", 72% agreed with nearly equal proportions (14%) answering neutrally or in disagreement. Importantly, only 6% of sixth years answered that they would not refer patients for abortion services when they could not or would not perform the procedure themselves, compared with 11-18% of students in all other classes.

Nearly half (46%) of respondents agreed with the statement "I would only refer women for abortion in certain restricted circumstances"; noticeably, first and second year students agreed with this statement in higher proportions than did other students (63% and 51%, respectively, compared to 36-40% in the other classes).

Several situations were posed to first through third year students only, and respondents were asked under which circumstances they would consider performing an abortion. With respect to most of these questions, students specified that they would perform an abortion under very restricted conditions. For example, most students agreed with the following statements: "I would perform an abortion if the pregnancy posed a risk to the mother's life" (53%), "I would perform an abortion if the pregnancy posed a risk to the mother's mental health" (40%), and "I would perform an abortion if it were a medical emergency" (69%, with only 12% in disagreement). However, the majority of students disagreed with the statement "I would perform an abortion in a situation of rape" (47%), and most also disagreed with the statement "I would perform an abortion under any legal circumstances" (59%). Students were mixed about the statement "I would perform an abortion in cases of severe foetal anomaly/defect", with 38% in disagreement, 36% in agreement, and over one quarter answering neutrally. In all of these 'circumstantial' questions, a significant proportion of students answered neutrally, ranging from 19-28% of all students' responses for the various questions.

Forty-seven percent of all respondents disagreed with the statement, "I would not perform an abortion under any circumstances", while 31% agreed with the statement and 22% were neutral. The majority of first years (40%) indicated that they would never perform an abortion, while only 24% of sixth years and 21% of fourth years reported the same. Twenty-nine percent of first years answered neutrally to this question, while only eleven percent of sixth years answered neutrally. The

overwhelming majority of fourth years (60%) and sixth years (66%) disagreed with the statement. In response to the statement "I would not refer a patient for abortion under any circumstances", nearly three-quarters disagreed, with only 11% agreeing and 16% answering neutrally. Again, a noticeable gradient appeared in responses to this question correlating with years spent in medical school; with each increasing medical school class, students were less willing to say that they would never refer a patient for an abortion (89% of sixth years disagreed with the statement, compared with 79% of fifth years, 84% of fourth years, 72% of third years, 70% of second years, and 54% of first years).

Most respondents indicated that if a female patient requested an abortion, they would not try to discourage her from seeking the procedure (42%, compared with 32% who said that they would try to discourage the woman and 26% who answered neutrally). Nearly half (48%) of first years indicated that they would try to discourage the woman, 27% of first years were neutral, and one quarter indicated they would not try to discourage her. By contrast, only 13% of sixth years indicated that they would try to talk a woman out of the procedure, 23% answered neutrally, and an overwhelming 64% reported that they would not try to discourage a woman from seeking an abortion. When asked to comment on the statement "I would try to convince other health care providers not to perform abortions", most students disagreed (59%, compared to 23% answering neutrally and 18% in agreement). While 31% of first years and 24% of second years indicated that they would try to convince others not to provide abortions, only 13% of third years, 12% of fourth years and fifth years, and 7% of sixth years agreed that they would try to convince others not to perform TOP procedures.

Finally, students were asked whether they thought they would be discriminated against or stigmatized if they provided abortions to women. With respect to this statement, 39% disagreed, while one-third agreed and 28% answered neutrally. Forty-four percent of fifth years and 52% of sixth years believed they would not be discriminated against or stigmatized, compared to 29-41% of students in other classes. Only 19% of sixth years believed they definitely would be discriminated against as a result of providing abortions, compared to 29-43% of students in all other classes.

Characteristics associated with intentions to provide abortion services

Socio-demographic and personal characteristics associated with intentions to provide and to refer women for legal abortion services after receiving qualification are summarized in Tables 7a and 7b. Factors emerging as significant in terms of intentions

to provide and to refer women for TOP services were year in medical school, being Hindu, Jewish, or agnostic/atheist, attending religious services irregularly or not at all, being single but having been involved in at least one relationship, and having had sexual intercourse. These associations were all significant. The same socio-demographic and personal characteristics were significantly associated with disagreement with the restriction that one "would only refer women for abortion under certain circumstances", with two notable exceptions: age and population group were also significantly associated with willingness to refer to "certain circumstances" (in general, 20-25 year olds and people identifying themselves as white or Indian were less supportive of restricting referral to certain circumstances). Refer to Table 7c.

Tables 7d and 7e summarize characteristics associated with participants' responses to the statements "I would not perform an abortion under any circumstances" and "I would not refer a patient for abortion under any circumstances". Generally, being a first year student, being Christian (Catholic or Protestant) or Muslim, and attending religious services regularly were significantly correlated with agreement with these two statements. Additionally, asserting that one would not perform an abortion under any circumstances was significantly correlated with being sexually inexperienced ($p<0.0001$). Asserting that one would not refer a patient for abortion under any circumstances was additionally significantly associated with being male ($p=0.03$) and being single and not currently seeing someone or being single and having never been in a relationship ($p=0.001$). In general, students who reported being single and in a relationship were significantly less willing than other groups to say that they would never perform an abortion ($p=0.01$).

Variables significantly associated with responses to the statement "If a female patient requested an abortion, I would try to discourage her from seeking the procedure" and to the statement "I would try to convince other health care providers not to perform abortions" are detailed in Tables 7f and 7g. Factors associated with intentions to discourage patients from pursuing elective abortion included being a first or second year medical school student ($p<0.0001$), being male ($p=0.03$), identifying one's self as Muslim or Christian, non-Catholic ($p<0.0001$), attending religious services regularly ($p<0.0001$), having never engaged in sexual intercourse ($p<0.0001$), considering specialization in OB/GYN ($p=0.04$), and either considering specializing in Family Medicine or being neutral towards specialization in Family Medicine ($p<0.05$). Additionally, younger age was associated with intentions to discourage a woman from seeking an abortion (being 17-19 years old, specifically; $p=0.02$). Conversely, those students who reported being single and in a relationship were more prone to disagree

with trying to discourage a patient from seeking an abortion procedure (66%; p=0.001) and to attempting to change other providers' minds about abortion provision (88% disagreed with the statement; p<0.0001). Interestingly, significantly more people who identified themselves as being "Indian" indicated that they would not try to prevent other providers from performing abortions, when compared to other population groups (87%; p=0.02).

7.9 External Influences on Beliefs about TOP (Table 8)

Respondents were asked several questions regarding external influences upon the formation of their values and beliefs with respect to TOP; these results are detailed in Table 8. When asked whether they thought their attitudes had changed since starting medical school, the majority of students reported "no" (52%), while 38% said "yes" and 9% reported that they didn't know or were uncertain. The majority of sixth year students (60%) and the majority of fourth year students (55%) answered "yes" to this question; by comparison, only 18% of first year students reported that their attitudes towards abortion had changed since beginning medical school.

The most important external influence reported by students was undoubtedly religion; over three-quarters of all students attributed some part of the development of their beliefs to personal religion. Nearly half of all students reported that personal religion had influenced them greatly in forming their beliefs and opinions about abortion, while 28% indicated that religion had "somewhat" influenced them, and only 23% said religion did not influence them at all with respect to TOP. It appears that with increasing years spent in medical school, students attribute considerably less of their personal values and beliefs about abortion to religion (for example, 57% of first years and 55% of second years indicated that religion influenced them "very much", while only 36% of fourth years and 38% of sixth years reported the same).

8.0 DISCUSSION

Introduction

This research was focused on future medical professionals in training in the MBChB programme at the University of Cape Town in South Africa. Ten years after the liberalization of South Africa's termination of pregnancy law, the rollout of legal, safe, and accessible abortion has been considerably impeded by the following:

- the lack of directed resources for TOP services,
- inequitable access to care,

- resistance of and obstruction by health care management to providing services,
- stigmatization of providers,
- poor understanding of the CTOP Act at the community and provider level, and
- limited numbers of health care professionals trained and willing to provide abortion care (van der Westhuizen, 2001; Varkey, 2000; Althaus, 2000; Adamo, 2003; and Dickson et al, 2003).

Without willing providers, termination of pregnancy services can never fully be made available and accessible to the extent that South African law requires. Overwhelmed, overworked, and underappreciated TOP providers are thinning in an already thin provider base, creating a massive void for the public health system in South Africa. Medical students in training are therefore an important population to examine in terms of future provision of TOP services.

This study described knowledge, attitudes, beliefs, and intentions of future health care professionals with respect to abortion and provision of TOP services. This study also elucidated socio-demographic and behavioural characteristics associated with knowledge, attitudes, beliefs, and future intentions to provide abortion services. Additionally, the demand for and exposure to TOP training in the general curriculum and in clinical rotations was determined from medical students' reported experiences. This study represents the first of its kind in a large, urban university in South Africa.

Summary of main findings

Participants in this study were students from all six years of the MBChB medical class cohorts at the University of Cape Town.

The response rate was high (80.2%). Thus, the sample of students surveyed in this study is likely to be representative of the medical school classes studying at the University of Cape Town. Furthermore, comparative analyses demonstrated that the gender and medical school class distribution of participants in our study accurately reflected that of the 2005 MBChB programme.

Religion proved to be an important factor in bivariate analyses in this study, with Christianity being the most commonly reported religion among respondents. Only 7% of students reported to be agnostic or atheist, and most students reported attending religious services regularly (44%). Religious affiliation and regular service attendance in this population was similar to that discovered in another medical student population in a small, rural South African university (Buga, 2002). In terms of nationality, nearly 87% of

respondents were South African, and the majority of these reported growing up in the Western Cape, which was expected due to the location of the University. Approximately one third of respondents considered themselves African, while 31% reported their population group as white. More fourth and sixth years reported being white compared to other class cohorts, while more first, second, and third years reported being African. This finding is not necessarily surprising, due to the fact that educational opportunities for non-white students have gradually improved in the past eleven years since South Africa became a progressive democracy.

Sexual experience and relationship status/history were also critical factors in the bivariate analyses. Most students were sexually experienced, and the majority of students were single, but engaged in a romantic relationship; first year students were least experienced sexually and many had never been in a romantic relationship, which makes sense due to their relative young age and social naivety. By comparison, considerably more students were sexually experienced in a study among medical students in a small, rural South African university (40% in the current study versus 69% reported in the previous study) (Buga, 2002). Nearly one-fifth of respondents in our study had never been involved in any romantic relationship.

In terms of plans for specialization, the majority of students indicated that they neither intended to specialize in OB/GYN nor Family Medicine. Many students were neutral or uncertain about specialization, especially underclassmen, which was expected considering their low level of exposure to specialization tracks as well as lack of medical experience and rotational training.

Overall, 95% of students knew that legal abortion was available in South African public health facilities; however, the details of legal provision of care were unknown to many students, especially first and second years. For the most part, students believed that women should have the right to decide whether or not to have an abortion and that the government should be responsible for providing free TOP services. Nearly two-thirds of students also believed that abortion should be a personal choice. However, many students expressed that they would impose restrictions on abortion provision, and 62% of all students disagreed with the statement "TOP should be legal for any reason". Moreover, more than half of students stated that they did not believe TOP should be legal if the pregnancy was unplanned. The majority of medical students at the University of Cape Town (60-75%) believed that clinicians have professional obligations to patients with respect to TOP care. These obligations included informing women of their rights to TOP care, referring women for TOP services in situations where the clinician cannot personally

provide terminations, and disclosing conscientious objection, where applicable. For the majority of students, patients' rights to accurate, unbiased information seemed to supersede providers' personal objections to abortion provision. In addition, most students agreed that abortion training should be more widely incorporated in the medical curriculum, that the current MBChB curriculum was lacking in abortion training and related topics, and that they intended to voluntarily seek out opportunities to learn more about abortion. Other literature from around the world has indicated that abortion training and discussion of abortion-related topics is substantially lacking in the routine preclinical curriculum, in OB/GYN rotations, and in residency training (Espey et al, 2004; Shotorbani et al, 2004; Visser et al, 1993; Westhoff, 1994; Foster and Steinauer, 2003; Espey et al, 2005; Wear and McNulty, 2003; and Goldman et al, 2005).

Generally, age and medical socialization, religion and religious attendance, and sexual experience and relationship experience had the greatest impact upon attitudes, beliefs and intentions with respect to abortion and abortion provision among medical students in training. In terms of age and medical socialization- which are interrelated variables by nature- younger and less medically experienced respondents tended to be more neutral or uncertain in their knowledge about abortion and abortion law, more conservative/ intolerant in their personal views towards abortion, more likely to report that they would not provide/refer patients for abortion in the future, less decided about medical training, and more influenced by religion and family with respect to abortion. Older students- and more advanced medical students- tended to be more knowledgeable, more liberal in their views, more tolerant and understanding of abortion and women's personal experiences prompting them to seek TOP services, less willing to say they would never perform abortions or refer women for TOP services, more opinionated about medical training and the need for more discussion of abortion in the MBChB curriculum, and less likely to be strongly influenced by religion. First year students and sixth year students were quite polarized in their responses to many questions, particularly questions regarding intentions and future practices. For example, first years were much less likely than sixth years to report intentions to provide or refer for abortion services; on the other hand, first years were much more likely to report intentions to discourage women against seeking terminations and intentions to discourage other providers against performing abortions. Additionally, upperclassmen reported a greater change in attitude as a result of their experiences in medical school than did first and second year students. This finding is logical, considering the increased opportunity for educational influence with time spent in medical school. These observations are in accordance with results from a study analyzing the opinions only of medical students in a small, rural, South African university. In that study, the author reported, "Medical training and socialization appears to change the

professional views of students as they become more senior... the attitudes of medical students to abortion become more liberal during their time at medical schools" (Buga, 2002:262). Another study among preclinical students at the University of Washington in the US also reported a shift in attitude with respect to level of medical education; Rosenblatt et al suggested that life experience and medical education afforded students "a broader understanding of the vagaries of existence that make abortions at times unavoidable" (1999:199). Other studies from the US in the early nineties further demonstrate that attitudes may become increasingly more tolerant or more liberal towards abortion with medical socialization (Leiblum et al, 1993; Westfall et al, 1991). On the other hand, some studies have indicated that age and medical education have no impact on positive or negative views of abortion and abortion legality (Dans, 1992). Over 80% of medical students surveyed at Columbia University reported no change in their attitudes toward abortion as a result of their medical education experience (Stennett and Bongiovi, 1991). However, it is important to note that the majority of students in this study held positive attitudes towards abortion early in their medical career. Studies of physicians' attitudes in the US and Britain showed no consistent association between increasing age and TOP tolerance (Aiyer et al, 1999; Francome and Freeman, 2000). In the Stennett and Bongiovi study, of the 20% of students reporting a change in attitude, the majority of the shift in opinion was attributed to training received during the clinical years, indicating perhaps that students are more receptive to changing their opinions during clinical years.

Religion was significantly associated with most responses to questions regarding attitudes, beliefs, and future intentions. In terms of religious affiliation and commitment to religious service attendance, students who reported being Catholic, non-Catholic Christian, or Muslim and students who reported regular service attendance were considerably more conservative in their views of abortion. Students claiming to be Hindu, Jewish, agnostic/atheist, or "other" religion were significantly more tolerant of abortion and of the circumstances prompting women to seek out abortion services, more interested in receiving training and seeking out opportunities to learn about TOP, less willing to support highly restrictive legal barriers to receiving care, and more supportive of government provision of free abortion on demand. Christian (Catholic and Protestant) and Muslim respondents were significantly more insistent that abortion is morally unacceptable for any reason and that they would never provide or refer patients for elective abortion; additionally, these religious groups tended to be much less supportive of patients' rights in questions of conscientious objection. Personal religion was most commonly reported as an important external factor reported by students to have influenced the formation of their values and beliefs with respect to abortion, with 77% of all students indicating that religion had influenced them either "very much" or to some

extent. Religious influence has been previously reported by many authors to have a strong impact on abortion-related attitudes among clinicians and medical students (Espey et al, 2004; Stennett and Bongiovi, 1991; Buga, 2002; Francome, 1997; Abdel-Aziz et al, 2004; and Aiyer et al, 1999). However, some studies have suggested that future health care providers recognize the distinction between personal and professional attitudes towards abortion and that a personal religious objection would not prevent them from providing legal services to women, including non-directive counselling, referrals, and surgical and medical abortion (Schwarz et al, 2005; Buga, 2002; and Shotorbani et al, 2004). While most respondents in the present study reported that they would support patients' rights in cases of provider conscientious objection, the majority of Catholic and Muslim respondents attending services regularly indicated they would never perform an abortion or attend a class involving training in performing abortion, regardless of the circumstances warranting the procedure.

Sexual experience and relationship status/history were associated knowledge, attitudes, beliefs, and intentions with respect to abortion. Students who previously had engaged in sexual intercourse and/or students who had been involved in at least one romantic relationship were generally more knowledgeable about abortion, more in favour of legal, free, and accessible TOP, less restrictive regarding the circumstances under which women seek abortion, more supportive of a woman's autonomous right to decide, more interested in seeking out opportunities to learn about abortion, less likely to support restrictive conditions on abortion, and more apt to intend to provide or refer women for services in the future. These results were expected, because it was hypothesized that these individuals had a closer personal connection to the woman who became unexpectedly pregnant and could relate more easily with her situation. Sexual experience has been closely associated with more liberal attitudes towards abortion in previous literature in the US (Klamen and Grossman, 1996); however, sexual experience among medical students in a rural South African university was not significantly correlated with personal attitudes towards abortion (Buga, 2002). This study represents a departure from that finding. Additionally, in the literature, prior personal experience with abortion- either having an abortion one's self or knowing someone who has undergone an abortion- was significantly associated with more tolerant and more supportive attitudes towards voluntary termination (Carton et al, 2000; Klamen and Grossman, 1996). In the present study, knowing someone who has undergone an abortion was significantly associated with support for government provision of elective abortion as part of free public health care and with the belief that safe abortion should be legal for any reason. Furthermore, sexual experience was closely associated with knowledge of a facility where abortions were provided; this finding is consistent with the notion that sexual activity leads to increased

familiarity with the location of and information about reproductive health services made available to the public.

The following sections discuss in more detail specific findings- grouped by subject domains- and relate the current research more explicitly to earlier literature on knowledge, attitudes, beliefs, and professional intentions with respect to TOP.

8.1 Knowledge of Abortion and CTOP Act Provisions

The majority of respondents answered correctly that legal abortion on demand is available in South Africa. Although most students were aware that legal abortion is available in South Africa and that women can obtain abortion on demand up to 12 weeks gestation, knowledge was poor regarding abortion legality after 13 weeks and after 20 weeks gestation. Particularly, underclassmen were the least informed about TOP legality, with 27-47% of first and second year students answering that they were uncertain about both questions on legality after 13 weeks. By comparison, third through sixth year students were better informed of the provisions under the law; these results were expected, as upperclassmen likely have had more exposure to abortion topics and medical law topics than first and second year students. Moreover, one quarter of all respondents and over half of all first years reported that they knew nothing of abortion legality under apartheid, indicating a poor understanding of the history of abortion legality in South Africa. While most students knew that TOP services were free in public health facilities, 62% of first year students were uncertain about the cost of TOP services, demonstrating again an (expected) elementary understanding among first years of the CTOP provisions.

When asked about the safety of abortion as performed by trained and untrained personnel, the overwhelming majority of respondents replied that terminations performed by untrained individuals are dangerous. During the lobbying effort and media play surrounding adoption of the CTOP Act, several public reports were published in South Africa about the risks- including high maternal mortality and morbidity- and significant health burden resulting from unsafe abortion (Hord and Xaba, 2002; Fawcus et al, 1997; Rees et al, 1997). The ANC rallied around the issue of abortion, insisting that all ANC officials support adoption of the CTOP Act, and it is likely that the media attention surrounding abortion liberalization circulated widely throughout the public (Hord and Xaba, 2002; van der Westhuizen, 2001; Lee, 1996; Varkey, 2000; Dickson et al, 2003). Therefore, it is not necessarily surprising that 92%

of medical students were quite familiar with the risks of "backstreet" or clandestine abortion procedures.

8.2 Abortion Attitudes and Beliefs

As was reported in literature from the United States (Shotorbani et al, 2004; Rosenblatt et al, 1999; and Espey et al, 2004), most medical students in the current study were supportive of some form of safe, legal, and accessible abortion, although in lesser proportions than American medical students. This particular question was posed only to first through third year students; nevertheless, it is worth noting that 46% of them agreed with safe, legal and accessible TOP, compared with 70% of first and second year medical students at the University of Washington (Shotorbani et al, 2004) and 68-95% of third year medical students at the University of New Mexico (Espey et al, 2004). In another study conducted in the US among future medical professionals, only ten percent of the population felt that abortions should not be provided for any reason (Rosenblatt et al, 1999). America's history with abortion liberalization is extensive and particularly politicized, dating back to the 1950's and 60's, with medical professionals in many respects leading the charge for legalized abortion as a matter of public health concern (Cates et al, 2003; Wear and Keck-McNulty, 2003; and Joffe, 2003). By comparison, South Africa's political and medical debate over abortion legalization has occurred rather recently (post-apartheid) and was largely spearheaded by ANC politicians in the name of human rights and equitable access to health care (Varkey, 2000; Althaus, 2000). Furthermore, American medical students are arguably more organized in their professional support for a woman's choice and are actively involved in public advocacy for TOP, both inside medical universities and in American society, perhaps resulting in more widespread institutional support for TOP (Wear and Keck-McNulty, 2003; Edwards, 2001; Dowling and Bates, 2000; and Williams, 2002). The combination of these two historical and organizational differences may help explain why more South African students are neutral or unfavourable towards safe, legal abortion in comparison with American medical students. In the present study, factors significantly associated with support for legal, accessible abortion included being older, being more advanced in medical school, being non-Christian and non-Muslim, attending services irregularly, having been in a relationship and having had sex, and planning to specialize in Family Medicine. We expected age/socialization, religion and religious attendance, and relationship status and sexual history to be associated with responses to this question, as was indicated in literature from other countries (Espey et al, 2004; Stennett and Bongiovi, 1991; Klamen and Grossman, 1996; and Carlton et al, 2000).

In the current study, over two-thirds of respondents were unsupportive of the statement "I believe that abortions should not be provided for any reason". Further, the majority (51%) disagreed that abortion was morally unacceptable for any reason. By contrast, seventy percent of all medical students in a small, rural South African university reported that they personally believed abortion was murder and morally repugnant (Buga, 2002). On the other hand, only one-third of college students at a mid-sized south-eastern American university believed abortion was morally unacceptable for any reason (Carlton et al, 2000), and only 30% of preclinical students in a large urban American university believed that abortion was murder (Klamen and Grossman, 1996). Hence, from our findings, medical students at the University of Cape Town are situated somewhere between the two in terms of their views about the morality of abortion. While we expected American medical students to be slightly more tolerant with respect to the morality of abortion, the considerable differences in opinion between medical students in the current study and those in the Buga study may have been attributable in part to differences between rural and urban settings, in that people living and studying in rural areas may be more likely to hold onto conservative or traditional beliefs.

Most South African medical students surveyed in this study supported the government's legalization and regulation of some form of safe, accessible abortion (64%) and believed the government should be responsible for providing TOPs as part of free, public health care (49%). Significantly more upperclassmen supported these views. These findings would suggest that University of Cape Town medical students- despite their own personal beliefs about abortion- nevertheless believe that some form of legal, safe, accessible (free) termination of pregnancy should be made available in a concerted, coherent effort perhaps to help reduce maternal mortality from unsafe abortion. In Brazil- where abortion laws are highly restrictive and an estimated 1.4 million clandestine abortions are performed annually- over 95% of OB/GYN clinicians supported full government funding of legal abortion services, and 77% believed the government must reform its abortion laws to take a more liberal and tolerant form (Goldman et al, 2005). Moreover, over 97% of OB/GYNs in that country disagreed that abortion should only be legal in cases that are currently allowed by law; as such, like South Africans, many Brazilians are in favour of a widespread government effort to make accessible abortion services available on demand to all women, at least in some circumstances (Goldman et al, 2005). Francome and Freeman observed a similar phenomenon in Britain: "...two thirds of doctors who were broadly anti-abortion supported the Abortion Act. While these doctors are not personally in

favour of legal abortion, they nevertheless recognize it as preferable to having restrictive laws that could lead to a return to backstreet abortions or could force women to travel to other countries for treatment" (2000:190). Additionally, these authors reported that only one in five respondents believed that abortion should not be funded by the Britain's National Health Service (Francome and Freeman, 2000).

Most medical students in this study supported a woman's right to decide (69%), and most also agreed that abortion should be a personal choice (62%). This finding is consistent with results from similar studies in 'developed' country settings; in the US, Sweden, Ireland, and Great Britain, research conducted among medical students and/or practicing clinicians demonstrated that the vast majority of respondents supported a woman's right to decide (Stennett and Bongiovi, 1991; Lalos et al, 2005; Francome, 1997; Francome and Freeman, 2000; and Carlton et al, 2000). In the current study, one of the factors significantly associated with supportive views towards a woman's choice was being female Westfall et al reported that among family and general practice physicians in Kansas, 74% of female physicians, compared with 52% of male physicians, agreed that a woman's personal decision was sufficient reason for an abortion procedure (1991). Gender is logically linked to beliefs about a woman's right to decide to have an abortion, because women may be more likely to take a personal interest in choice issues and health policies that concern them directly, and women are considerably more likely to want to expand their reproductive options as a matter of personal freedom. However, gender is not always linked to choice in the literature; results from another study in an American university concluded that gender was not significantly related to opinions about a woman's choice (Carlton et al, 2000).

With respect to the statement "I believe TOP should be legal for any reason", less than one quarter of respondents in the current study agreed. By comparison, 70% of University of Washington medical students believed elective abortion should be legal under any circumstance (Shotorbani et al, 2004), indicating once again that American medical students were considerably more supportive of elective abortion on demand. In the current study, factors significantly associated with support for this statement included being more advanced in one's medical education, being non-Christian and non-Muslim, not attending religious services regularly, having had intercourse, having been involved in a relationship, and reporting to be white, African, or Indian, as opposed to Coloured or "other". As previously mentioned, medical association, sexual experience and relationship experience, and religiosity were all reported in the literature to be associated with views about abortion legality. It is interesting, however, that those individuals identifying themselves as Coloured or an "other" population group

were less likely to agree with legal abortion for any reason. There may be cultural reasons for this significant finding; perhaps those individuals belonging to Coloured and "other" social communities have more traditionally held values that prevent them from condoning abortion in any circumstances. More investigation of this finding could be further explored but is beyond the scope of the current study.

Within our population, many students' views on abortion were conditional upon circumstances related to the pregnancy. As mentioned previously, medically experienced students were more likely to be in favour of TOP- regardless of the circumstances- compared with underclassmen. In this study, 84% of all students believed TOP should be legal if the woman's life was endangered by the pregnancy, and two-thirds asserted that TOP should be legal if the woman's mental health would be negatively affected by the pregnancy. While the literature suggests that most medical students and practicing physicians agree with abortion when the pregnancy poses a health risk to the woman (Stennett and Bongiovi, 1991; Westfall et al, 1991; Goldman, 2005; and Buga, 2002), the fact that most students supported TOP when the mother's mental health was endangered is an interesting finding. According to Buga, only 21% of students at a small medical university in South Africa reported that they would refer or perform an abortion if the courts ruled that the mother was incompetent (2002). Students in that study reported somewhat inconsistent views about mental health, as approximately half also indicated they would refer or perform if the mother's mental health would be severely impacted by the pregnancy (Buga, 2002). One of the many reasons South Africa's TOP legislation is widely considered to be highly progressive is because it allows abortion to be obtained after the 12th week gestation when the pregnancy poses a mental health risk to the woman (Dickson et al, 2003). This allowance in the law was contentious to many and could help explain why the students in Buga's study were mixed about mental health and why significantly fewer students in the current study supported TOP in cases of mental health endangerment as opposed to the 84% who supported TOP if the woman's life or physical health was at risk. Mid-term abortion justified in light of mental health risk remains a controversial topic within and outside South Africa.

Sixty-four percent of medical students in the current study agreed that abortion was acceptable if a congenital anomaly or foetal malformation was present. According to Shotorbani et al, 73% of University of Washington medical students reported that abortion was appropriate when a foetal anomaly or congenital disorder was discovered (2004), while in Sri Lanka, 93% of physicians and 81% of medical students believed TOP was an appropriate course of action when a congenital disorder was detected

(Simpson et al, 2003). Another 65% of physicians in Kansas believed abortion was an acceptable course of action when foetal malformation was present, indicating that our results were largely in line with previous research (Westfall, 1991). Significantly fewer first and second year students condoned TOP when congenital problems were detected. Furthermore, many of these students indicated they were neutral or uncertain about the condition of congenital defect/foetal anomaly, perhaps demonstrating a poor understanding of this terminology among first and second year students.

Sixty-three percent of our sample believed TOP should be legal in situations of rape, while 55% believed TOP was justified under circumstances of incest. First and second year students were more reserved in condoning abortion in situations of incestuous abuse. One possible explanation is that less experienced medical students may be more unfamiliar with this language. Rape, as opposed to incest, may be a more recognizable term. It seems unlikely that those people who supported abortion in situations of rape would oppose abortion when a young girl was sexually abused or sexually involved with a male relative. In the literature, the vast majority of medical students and medical practitioners surveyed believed that abortion was equally justified when the pregnancy resulted from rape or incest (Westfall et al, 1991; Goldman, 2005; Carlton, 2000; and Buga, 2002).

The majority of respondents in this study did not believe abortion was justified because a woman was unmarried and a single mother (61%). Most respondents also did not think abortion was justified if the woman could not afford to have a child (49%), if the pregnancy was unplanned (55%), or if the woman would be forced to drop out of school (52%). The responses to these questions about conditionality indicate that in general, most respondents believed TOP was appropriate when a woman's health was impacted by the pregnancy, when the foetus was malformed, or when the pregnancy was the result of abuse. However, respondents generally did not support statements or conditions that reflected a woman's choice to have an abortion to control fertility, in light of her socioeconomic status, marital status, or personal situation. As further proof of this, the majority of students (45%) disagreed with the statement "TOP should be legal if a woman chooses the procedure on her own". As expected, the proportion of students in opposition to a woman's choice noticeably waned with increasing years spent in medical school; however, taking age and medical socialization into consideration, studies from European countries indicate a much higher level of support for a woman's autonomous choice. Most respondents in a British study among general practitioners believed that the woman alone should make the decision

whether to have an abortion (Francome and Freeman, 2000), and nearly 70% of Irish general practitioners believed the choice to continue a pregnancy should be left entirely to the woman (Francome, 1997). Furthermore, 86% of Swedish midwives and 92% of Swedish gynaecologists believed a woman should have the right to decide autonomously whether or not to have an abortion (Lalos et al, 2005). Clearly, the results from our study indicate a lower level of support for a woman's autonomous choice.

With respect to legal restrictions on abortion provision, many South African medical students in this study supported requiring parental *notification* for girls under 18, specifying that abortion cannot be provided after 12 weeks gestation, specifying that abortion cannot be provided after 20 weeks gestation, requiring a doctor's statement that a woman's health is at risk with continued pregnancy, and requiring a 5-10 day waiting period. By comparison, 83% of respondents in an American study evaluating medical students' responses to similar restrictions placed on abortion disagreed with such restrictions (Stennett and Bongiovi, 1991). It is interesting to note that while most respondents in the current study did not agree with requiring parental *consent* for girls under 18 or restricting a woman to one abortion only in one lifetime, the issue of partner consent was a contentious one. Forty percent of respondents disagreed with requiring partner consent for an abortion procedure to be performed, while 39% agreed with requiring partner consent, a finding that indicates that respondents believe strongly in a male's role and responsibility in conception and in his right to be involved in decision-making regarding the continuation of pregnancy. While the majority of students supported a woman's "right to decide" (69%), most of them were supportive with some conditionality placed upon that right.

8.3 Attitudes about Health Care Providers' Rights and Responsibilities

In all four questions about conscientious objection, the majority of respondents indicated that they *strongly* agreed with the statements, indicating a high level of expectation among future medical practitioners with respect to provider responsibilities and appropriate disclosure of objection and patients' rights. Most respondents believed that health care personnel had certain professional obligations to patients regarding disclosure of conscientious objection (59%), informing patients of their rights to choose to have an abortion (69%), and referring patients to a non-objecting provider for TOP services (73%). On the other hand, the overwhelming majority of medical students in this study indicated that objecting health care providers should be allowed to refuse to perform abortions (91%). In all questions about conscientious

objection, the majority of respondents reported that they *strongly agreed* with the statements, indicating a strong conviction among University of Cape Town medical students that medical professionals have certain ethical and legal obligations as providers of care, despite personal moral judgment about abortion. These findings were in line with results from a British study among general practitioners which reported that 85% of respondents believed "if a general practitioner conscientiously objects to abortion, he/she should be required to declare this [objection] to a woman seeking access to abortion services" (Francome and Freeman, 2000:190). Among general practice physicians in Kansas, 77% of all physicians reported referring women for TOP services when they could not or would not provide services in their own offices (Westfall et al, 1991). However, 61% of "pro-life" physicians indicated that they did not refer women seeking an abortion to a non-objecting provider (Westfall et al, 1991). Clearly, a provider's role in determining access is critical, even when the physician himself or herself is not directly providing services, but is part of the referral process. When the referral process fails and physicians neglect to completely inform patients of their rights and of health services that may benefit them, patients are being denied informed choice, which is a considerable disservice. Factors associated with believing a provider has an obligation to refer patients for abortion services included being in a relationship, having had sexual intercourse, identifying oneself as Hindu, Jewish, agnostic/atheist, or "other" religion, being a second, third, fourth, or sixth year medical student, and attending religious services irregularly or not at all. Not surprisingly, these were similar factors as those associated with responses to general attitude questions; that is to say, for the most part, these characteristics were clearly associated with liberal views about abortion regardless of the particular question posed. As previously discussed, age, religion, and personal sexual and relationship experiences are understandably correlated with views on abortion, because these factors plausibly impact tolerance, empathy towards women seeking abortion, and the likelihood of personal exposure to abortion issues.

With respect to nurses and midwives being trained to provide abortion services, students in the current study tended to support broadening the provider base for terminations and including nurses and midwives in training (47% compared with 30% who were not supportive and 23% neutral). This finding demonstrates that University of Cape Town medical students recognize the value these advanced clinicians bring to the abortion issue as potential providers. Furthermore, such a response indicates little professional territoriality around the question of TOP provision- an encouraging finding, but one that may change as these students graduate and become health care providers themselves (van der Westhuizen, 2001; Dickson-Tetteh and Billings, 2002).

As an example of professional territoriality, 72% of respondents in the nursing program, 45% of respondents in the physician assistant program, and only 21% of medical students in a University of Washington study believed that non-doctors should be trained to provide elective surgical abortion (Shotorbani et al, 2004). In South Africa's current situation, the shortage of abortion providers calls for increased training of nurse-midwives to perform abortion procedures and to counsel TOP patients; if for no other reason, an increased provider base increases the chances of the CTOP law being implemented to its full potential (Dickson-Tetteh and Billings, 2002; Warriner and Shaw, 2006).

8.4 Attitudes towards Abortion Training

Most respondents in the current study indicated that they felt that abortion training should be incorporated into the formal medical curriculum because it is a common medical procedure (46%); this finding was generally consistent with literature from the US, although significantly proportions of American students believed abortion should be part of the medical curriculum. In the US, 65% of future health care providers surveyed at the University of Washington believed that "every program that addresses women's health should include abortion training" (Shotorbani et al, 2004:60), and Espey et al demonstrated that the overwhelming majority of third year medical students (84-99%) at the University of New Mexico believed that abortion and TOP-related services should be an integral component of any medical curriculum (2004). Significantly more students who participated in a voluntary clinical experience in abortion care believed abortion should be mandatory in medical training (99% versus 84% who did not participate in the voluntary clerkship opportunity (Espey et al, 2004). Concerning these differences between South Africa and the US, it is plausible that higher proportions of American medical students support inclusion of abortion in medical training due to the highly organized efforts of special interest groups such as Medical Students for Choice, the National Abortion Federation, and Ipas. Moreover, because the United States legalized abortion in the 1970s, health providers and medical institutions have had more time to grapple with the issue of abortion in the formal medical curriculum, and as a result, its place in the curriculum may be more widely accepted. It is worthwhile to note that in the current study, 57% of sixth year students supported incorporating abortion training into the medical curriculum, compared to 42-47% of students in other classes, indicating that upperclassmen, particularly sixth years, having completed more of their medical training, were more likely to identify deficiencies and to make critical judgments about the quality of their medical education. First and second year students answered neutrally more often to

questions about the curriculum, which was expected considering their lack of exposure to the entire medical curriculum.

Most students in this study reported they would seek out information about abortion voluntarily. Over two-thirds of students reported that they would be willing to attend a workshop on abortion and related health topics. Over half of the students surveyed reported that abortion did not receive enough attention in the medical curriculum, while three out of five students indicated that they wanted to receive more information on TOP. Additionally, most students planned to seek out opportunities- outside of class- to learn about abortion and other related health services. Another 39% of all students said that they would be willing to take a class that included training in performing voluntary abortions, and thirty-nine percent reported that they would be willing to attend a medical university whose curriculum required abortion training. Only 10% of students in the University of Cape Town MBChB program felt that abortion was sufficiently covered in the current curriculum and that it required less attention. Similar results were reported from a study among University of Washington medical students: 64% of students in that study indicated that they would attend a program whose curriculum required abortion training, 55% were willing to take courses that involved abortion training, and one quarter specifically planned to seek a residency program or practicum site that involved training in abortion techniques (Shotorbani et al, 2004). Other reports from the US have demonstrated that medical students are eager to seek out opportunities to learn more about abortion, where formal training is lacking or unavailable in their respective medical curricula (Espey et al, 2004; Edwards, 2001; Dowling and Bates, 2000; Wear and McNulty, 2003; and Almeling et al, 2000). There is no evidence from South Africa regarding students' satisfaction with the quality of education they receive in abortion and/or students' willingness to be trained in abortion techniques; this study represents one of the first of its kind assessing students' views of the South African medical curriculum with respect to abortion training. While the majority of all students in this study called for increased exposure to abortion issues- including values clarification, observation and training in performing abortions- there were significant cohort differences with regard to certain questions. Particularly, first years were most eager to learn more about abortion and attend workshops, and sixth years were more likely to indicate that the curriculum did not currently address TOP sufficiently. These differences most likely reflect the level of exposure that students have to abortion as a result of their year(s) in medical training; whereas first year students are keen to seek out opportunities to expand their knowledge base- which is likely quite undeveloped in the first year- the sixth years are able to point out deficiencies and make suggestions for improvement in the

curriculum. Factors closely associated with wanting to receive more information and being receptive to opportunities to learn about TOP included: being non-Christian and non-Muslim, attending services irregularly or not at all, being single and in a relationship, having ever engaged in sexual intercourse, and being older and/or more advanced in one's medical education. As indicated previously, these factors were expected to be associated with more tolerant views towards abortion, and tolerance may impact willingness to learn more about these issues. Future research could examine these relationships and causality more directly; the design of the current study limited its ability to derive more information about such causation.

Professors' views about abortion and whether they incorporate their beliefs into lectures are important issues to consider, because medical students in training are often in their formative years in terms of their professional opinions towards provision of certain health services, and the influence of medical mentors in shaping these views is substantial. When asked whether they believed their professors were supportive of legal abortion, over half of all students were neutral or uncertain, compared with 37% who believed their professors supported legal abortion and only 11% who did not believe their professors were supportive. However, it is significant to note that responses to this question were closely associated with year in medical school; when stratified by medical class, the majority (44-58%) of third through sixth years believed their professors were supportive of legal abortion (compared to 14% of first years and 21% of second years). First and second years answered neutrally in much higher proportions. More experienced medical students have had more exposure to various teachers within the medical programme and may be better prepared to form confident opinions about the personal views of their professors over the years. It is interesting to observe that among upperclassmen, although most believe their professors are in favour of legal abortion, the education they receive in TOP is still perceived as considerably lacking. One would think that if the majority of professors are known by students to be supportive of legal, accessible TOP services, courses would reflect more attention to the issue. Of course, support doesn't always translate into advocacy or active instruction, and instructors may feel professionally discouraged from discussing these issues in the classroom. Additionally, professors may not be aware that students perceive their abortion education to be insufficient, or instructors may be more judicious in their class planning so as to avoid discussing the sensitive and often contentious issue of abortion. Whatever the case, it is clear that students demand more exposure to abortion-related topics, despite the controversial nature of such discussions.

8.5 Intentions to Provide Abortion Services

Most students indicated that they did not intend to provide abortions upon receiving their qualification to practice medicine (55%). Factors associated with intentions to provide services included being Hindu, Jewish, or agnostic/atheist, attending religious services irregularly or not at all, being single and having been involved in at least one romantic relationship and having had sexual intercourse. These factors were similar to those associated with overall liberal attitudes towards abortion and higher tolerance to conditions which may lead women to seek an abortion. It is not particularly surprising that those respondents who were more supportive towards TOP in general were also more likely to intend to provide abortions. In terms of willingness to provide TOPs, our results are in line with one study from the US; the majority of medical students from the University of Washington indicated they did not plan to provide medical abortion (46%), and 58% indicated they would not perform surgical abortion in their practices (Shotorbani et al, 60). However, our results conflicted somewhat with other American studies, one of which concluded that 42% of future internists, 84% of family practice residents, and 83% of gynaecology residents reported that they intended to provide medical abortions to patients on demand (Schwartz et al, 2005). Clearly, the major difference between Schwartz et al study and the current study is the level of training/education of respondents. The current study examined first through sixth year medical students, while the Schwartz et al study surveyed medical residents. For residents, clinical specialty has been determined, and by virtue of self-selecting into specific professional tracks, residents may better anticipate what their professional responsibilities will include. Another study in Washington demonstrated that 55% of medical students who plan to become family practice physicians or OB/GYNs plan to personally provide first-trimester abortions (Rosenblatt et al, 1999).

In the current study, thirty-one percent of participants said they would never perform an abortion, no matter what the circumstances; however, the majority of respondents (47%) disagreed with that statement. Again, first years were much more likely to indicate that they would never perform an abortion, a surprising finding considering their relative lack of exposure to clinical training and abortion topics (40% said they would never perform an abortion). By comparison, upperclassmen were considerably less willing to make such a conclusive statement; for example, sixty percent of fourth years and two-thirds of sixth years disagreed with the statement that they would never provide an abortion under any circumstances. In addition to medically inexperienced students, people who said they would never perform TOP tended to be sexually inexperienced, Catholic, other Christian, or Muslim, regularly attending religious

services and reporting "other" for relationship status. Our findings were in line with results from a rural medical University in South Africa, which determined that 35% of respondents would never perform an abortion, but may refer patients for services under some circumstances (Buga, 2002). As in the current study, year in medical school had a significant impact on responses, with first year students indicating in highest proportions that they would never perform an abortion, and respondents who attended religious services regularly tended to say they would never perform an abortion. However, sexual experience was not associated with intentions to provide services. Relationship status was not examined (Buga, 2002). In a study of second year medical students at the University of Illinois, 37% indicated they would never perform an abortion, but would consider referring patients for services; that study also concluded that students with previous sexual experience were more liberal towards abortion provision (Klamen and Grossman, 1996). In the current study, religion and sexual experience were expected to be associated with responses to this question of future provision.

Several circumstances were presented to students to try to identify situations which may prompt them to provide abortion services. The majority of students agreed that they would provide abortions when the mother's life was at risk, when the mother's mental health would be negatively impacted by the pregnancy, and during a medical emergency; however, most respondents disagreed that they intended to provide TOPs in situations of rape and for any circumstances justified by law. Students were mixed about provision in situations of foetal malformation or congenital disorders. It is significant to note that many students answered these specific questions neutrally; perhaps opinions were actually undeveloped about future provision or students were more ambivalent about the circumstances which may prompt them to provide TOPs. It has been reported that in surveys gauging opinion towards sensitive or controversial topics, general questions tend to draw out stronger, more polarized responses, whereas more narrow and specific questions better elicit the true, nuanced nature of human opinion (Cook and Jelen, 1993). In the current survey, this assessment appears to hold. Having employed both general and specific questions regarding intentions to provide services, students were clearly more ambivalent or more neutral when asked specific questions as opposed to broad, nebulous questions. In comparing our results to Buga's, 52% of students at a small, rural South African university indicated they would perform or refer patients for abortion under certain circumstances (2002). These included: when the mother's life is endangered (74%), foetus is severely malformed (60%), mother's mental health would be negatively affected (54%), mother is incompetent, according to court ruling (21%), pregnancy was the result of rape (62%),

and on demand (13%) (Buga, 2002). Seventeen percent of first through third year students in the current study indicated they would perform an abortion on demand. A major difference between the two studies is that students in the Buga study reported that they would perform or refer patients for abortion when the woman was raped, whereas the current study indicated that most students would not perform TOP in situations of rape. Obviously, significant differences in responses are likely due to differences in the wording of the questionnaires: Buga's questionnaire lumped intentions to perform and/or refer into one series of questions, and the current instrument separated these intentions to further dissect the issue of provision and the issue of referral.

It is certainly possible that students indicated they did not intend to offer abortion services to women because the procedure would be outside the scope of their intended specialty or practice. Although 46% of nursing, physician assistant, and medical students from the University of Washington reported that they did not intend to provide medical abortion, 34% of those students answered so because abortion would be outside the scope of their practice, whereas 24% reported it would be against their religious beliefs, 31% said it would be against their personal values, and 10% indicated they would not have the opportunity to be trained in TOP procedures (Shotorbani et al, 2004:61). While we did not ask students why they did not intend to offer TOP services, it is important to note that only 24% of students were considering specializing in OB/GYN and only 23% were considering pursuing Family Medicine, and these clinicians are primarily responsible for abortion provision among physicians in South Africa. Therefore, many students in the MBChB program may perceive TOP provision to be outside the range of services they will likely provide. If, for example, a student intends to specialize in orthopaedic medicine, it is unlikely that he or she would ever be asked to provide abortions to women.

In terms of referral, only 11% of students in this study indicated they would not refer a patient for abortion under any circumstances, and first year students were significantly more likely to refuse to refer. Seventy-two percent of all respondents indicated they would refer patients for TOP in situations where they could not or would not perform the procedure themselves. In the literature, 90% of preclinical students at the University of Washington indicated they would be willing to refer patients inquiring about abortion to other clinics or providers if necessary (Shotorbani et al, 2004). Practicing physicians were also willing to refer patients for TOP in studies conducted in the US and Ireland: seventy-seven percent of physicians surveyed in Kansas referred patients for abortion services (Westfall et al, 1991), and eighty-seven percent

of Irish general practitioners referred patients for abortion services in Ireland (Francome, 1997).

In the current study, only six percent of sixth years said they would not refer patients for TOP when they could not or would not perform the procedure themselves; interestingly, 63% of first year students and 51% of second year students indicated they "would only refer women for abortion in certain restricted circumstances". Perhaps with increased medical socialization, students recognize the power of their professional influence over patients and are more likely to give patients objective information (referrals and/or discussion of their reproductive options) to better equip them to make personal, autonomous choices. First and second year students seem reluctant to offer women that choice, in situations where they were personally opposed to elective abortion. As further proof of this phenomenon, 48% of first year students and 38% of second year students indicated they would try to discourage a woman from pursuing an abortion, compared to only 13% of sixth years who would do the same. One study conducted among physicians in Kansas demonstrated that pro-life clinicians were significantly more likely to discuss their personal and moral views on abortion with patients, regardless of whether a patient asked for the physician's opinion (Westfall et al, 1991). As first and second year students in this study were considerably more conservative in their views and also more likely to try to dissuade women from obtaining an abortion, it is particularly important for students to recognize their influence in patient decision-making. Encouraging student participation in professional ethics or medical law courses and values clarification workshops may help students define these roles and responsibilities more clearly as they continue in their formal training.

Additionally, first and second year students, more religious students, and sexually inexperienced students more often reported that they would try to convince other providers not to perform abortions. Not surprisingly, these characteristics were also associated with more conservative and intolerant views in general towards TOP. As Carlton et al have previously demonstrated, individuals with a more extreme stance on abortion- particularly those who identify themselves as pro-life- are generally more committed to the issue of abortion and more likely actively advocate their own views to others (2000). The obvious willingness among more religious and more conservative individuals in the current study to give unsolicited input about their personal opinion in a professional environment echoes this finding. These individuals may be more likely to try to interfere with others' decision-making because opposition to abortion is an easier, less controversial position to defend in many societies,

particularly those where personal religion plays a major role in the debate about TOP. Again, certain coursework and/or values clarification workshops could provide opportunities for students to identify their personal views and clarify what is professionally appropriate in terms of advocacy of one's opinion, specifically among other providers. Clearly, active promotion of extreme ideologies among colleagues- while much of it may be ignored- could have a dramatic impact upon medical practice, leading to "blacklisting" and peer discrimination in some cases. Several authors describe the stigmatization and crippling professional discrimination that occurs in the workplace when clinicians take on the role of offering abortion services (Dickson et. al., 2003, Adamo, 2003; Foster et. al., 2003; Joffe, 2003). Indeed, in the current study one-third of all respondents reported that they believed they would be stigmatized or discriminated against if they provided abortion services. Such behaviour in the workplace should not be tolerated, particularly when providers of TOP services are already scarce, and access to free, non-judgmental services is legally mandated.

In the current study, 11% of students said they would never refer a patient for TOP and 31% would not perform an abortion under any circumstances, compared with 14% of University of Illinois medical students who reported they would neither perform nor refer for abortion services (Klamen and Grossman, 1996), and 13% of medical students in a South African study who reported they would never perform nor refer under any circumstances (2002). Although it is difficult to distinguish between intending to refer and planning to provide TOPs in these two studies, it is evident that our results- like previous studies- indicate that a substantial portion of the medical student population is not willing to consider any role in the provision of or referral for TOP services.

8.6 Perceptions of Others' Attitudes and External Influences on Beliefs

Perceived attitudes of family members and friends towards abortion were markedly different. In this study, most students believed that their families were opposed to legal abortion, while their friends were generally supportive of legal abortion. Noticeably, first year students reported in much higher proportions that they believed both their friends and families were opposed to legal abortion. For example only twenty-seven percent of first years believed their friends were supportive, while 53% of sixth years believed their friends were in favour of legal abortion. Because the literature suggests that individuals become more liberal and tolerant towards abortion with increased age and socialization, this finding is not unexpected (Rosenblatt et al, 1999; Westfall et al, 1991). It is also possible that less advanced medical students- by

nature, younger individuals- don't know the details and intricacies of their friends' and families' moral views and/or that they are more likely to ascribe to those close to them similar values as their own (younger and inexperienced medical students have been shown to be more conservative in their personal views and less tolerant to abortion, in this study as well as in the literature [Buga, 2002; Rosenblatt et al, 1999]).

In terms of external influences on beliefs about abortion, most students attributed some part of the formation of their values to family, friends, medical education, and personal religion. However, students' medical education and personal religion appeared were reported to have had the largest impact on evaluating and clarifying values about TOP. The most important external influence on views was by far religious influence; in fact, nearly half of all respondents indicated that personal religion played a very important role in shaping their views regarding abortion. These results are consistent with results from a student population attending a small, South African medical school in a rural area; in that study, religion was significantly associated with personal attitudes to abortion, and nearly 60% of respondents reported that the Bible or the Ten Commandments formed the basis of their personal ethics (Buga, 2002). In a study among British general practitioners, religious influence was determined to be associated with opposition to provision of abortion services among Church of England Christians, as compared to those respondents who were not religious (Abdel-Aziz et al, 2004). It also has been demonstrated that a high prevalence of Islam and Catholicism in society reduces the likelihood of legalized abortion being available and reduces the abortion rate within those populations (Trent and Hoskin, 1999). In a recent study conducted in the US, religion played an important role in forming opinions about abortion, and religious objection was cited by third year medical students as the leading reason for declining participation in a half-day voluntary abortion care experience (Espey et al, 2004). Clearly, our finding that religion significantly impacted students' views about abortion is not necessarily a new concept.

As mentioned previously in this discussion, the role of medical socialization and educational experience in the formation of abortion beliefs- while evidently influential in our student population- has been debated in the literature. A study conducted among Columbia University medical students reported no significant change in abortion-related attitudes with increased medical socialization; however, the authors concluded that "attitudes were more likely to change by completion of the clinical years… following exposure to the obstetrics and gynaecology services, and in particular, [after] observing abortions during these rotations" (Stennett and Bongiovi, 1991:181). Whereas Espey et al (2004) reported that personal attitude changes as a

result of medical education are common in student populations, Buga (2002) concluded that year of study had no significant impact upon personal attitudes to abortion. On the other hand, Buga also reported that medical socialization was associated with students' *professional* opinions about abortion, suggesting a dichotomy between students' personal moral views versus what they consider to be professionally appropriate (2002). The current study supports such a dichotomy: while nearly half of all students attributed their personal views to religion and 62% did not personally believe abortion should be legal on demand, sixty-four percent of respondents agreed that legalizing some form of legal, accessible abortion was necessary, 73% believed objecting health care providers should be required to refer patients for abortion services, and nearly seventy percent supported requiring providers to tell women seeking abortion services of their right to have an abortion.

8.7 Limitations of Research and Contextual Considerations

This research has several limitations worth consideration. First, as the instrument was a self-administered survey, the argument exists that responses to a self-administered survey are not truly indicative of actual behaviour. Particularly with respect to future intentions, current expectations may differ greatly from behaviours and practices years from now. To obtain a fully comprehensive assessment of long-term practices and beliefs, one would need to employ a large-scale cohort study beginning in medical school with extensive follow-up through professional practice, and future research in this area should consider such an effort. However, by identifying perceived intentions earlier (irrespective of the possibility of change), we are able to take a cross-section of current medical students and ascertain whether there are opportunities for improved educational experiences or values clarification around abortion and abortion training. Regardless of whether current intentions translate into future behaviour, the benefit gained from examining the beliefs of future medical providers in training and their perceived involvement in the provision of abortion care is that we are able to utilize this information to help inform training and educational strategies that meet the needs of medical students now. By introducing the training initiatives and clarification programs that students desire, we are potentially increasing the provider base for future abortions, a significant contribution to health policy and access/quality of care issues.

Second, because respondents answered sensitive questions about abortion, it is possible that social desirability bias was introduced into the questionnaire indirectly. We attempted to minimize such bias by administering the questionnaire privately and anonymously. The questionnaire was explicitly designed to avoid lending weight to any

particular view towards abortion; however, respondents may have felt socially or professionally pressured to answer sensitive questions about abortion in a manner they believed would be socially or professionally acceptable. In recognizing that this bias may occur, we used previous authors' experiences in designing abortion questionnaires to inform our questionnaire development (Buga, 2002; Westfall et al, 1991, Rosenblatt et al, 1999; Shotorbani et al, 2004; and Cook and Jelen, 1993). Furthermore, the questionnaire was piloted and repeatedly reworked to try to identify and change questions that appeared in any way influential or biased towards a particular opinion. Questions were also repeated with different wording to attempt to gauge a more genuine opinion, which was shown by Cook and Jelen to improve questionnaire specificity and to minimize bias (1993). Finally, should any response bias have occurred, it is unlikely that it would be significant in any particular direction; as there is no clear social consensus about abortion in South Africa, we believe students would have been equally likely to feel socially compelled to respond in either direction- supportive or unsupportive- towards abortion.

Third, as this questionnaire was administered among first through sixth year medical students at an established, large, urban South African university, the results may not be generalizable to other student populations in South Africa or in other countries. Students in Cape Town may be very different demographically or otherwise from other future medical providers in South Africa and elsewhere. For example, students at a small, rural medical programme in South Africa were significantly different from the current population in terms of ethnic identity, religious identity, and sexual behaviour; it is however interesting to note that their views towards abortion and future intentions to provide TOP services were somewhat similar to the current population's views (Buga, 2002). As demonstrated by research from the United States and other countries- both wealthy and 'developing' nations- knowledge, attitudes, and beliefs about abortion and abortion provision can be quite different from country to country and should be taken in political, religious, cultural, and educational context accordingly (Hammarstedt et al, 2005; Francome, 1997; Schwarz et al, 2005; Shotorbani et al, 2004; Mogilevkina et al, 2001; Kumar et al, 2002; Visser et al, 1993; Simpson et al, 2003; Aiyer et al, 1999; Stennett and Bongiovi, 1991; Goldman et al, 2005; Westfall et al, 1991; Rosenblatt et al, 1999; and Abdel-Aziz et al, 2004). However, this study was primarily designed to address attitudes, knowledge, beliefs, and provision intentions among future health care professionals in the South African context; it may or not may not be useful to other countries' populations. Nevertheless, the issues brought up by students in South Africa as important- including training and curriculum insufficiency in abortion care- echo many other budding health providers' sentiments worldwide,

and the applicability of the current research may be more far-reaching than was originally realized.

Because this study examined only medical students in training, it tells us nothing about the views of future nurses and other advanced clinical practitioners in training. In light of their essential role in the delivery of TOP care in South Africa, additional studies examining knowledge, attitudes, beliefs, and intentions of advanced clinicians in training would be an important contribution to the field.

While the response rate was high across medical school classes, fewer sixth year students were sampled compared to other years (55.9% of sixth years compared with 69-92% of all other classes). More sixth year students were not available on the day the questionnaire was circulated in-class because of rotations and/or other academic appointments. However, there is no reason to believe that these students were different from responding students, as they did not actively choose non-response. Also, sixth year students were equally likely to be previously engaged in some other academic pursuit during the time of interview because they are randomly allocated to activities and rotations.

8.8 Implications of Findings and Recommendations to Stakeholders

Based on our findings curriculum changes at medical universities may be valuable in helping to improve TOP access, availability, equitability, and quality of abortion care services in South Africa. As doctors in training are an integral part of future health care delivery, their understanding of TOP legality and clinical care, their attitudes and beliefs about abortion, and their planned future practices are important indicators for future provision of care. Understanding their ideas, experiences, and beliefs gives policymakers, health administrators, and academic curriculum planners a much better perspective from which they can both meet future providers' needs and address the public health concerns and provider shortages associated with legal, voluntary abortion.

First and foremost, curriculum development needs to be more inclusive of termination of pregnancy training. The majority of students in this study- particularly more advanced students who had completed more of the curriculum- indicated that they felt their exposure to and knowledge about abortion techniques and related issues was considerably lacking. Moreover, most students demonstrated that they were interested in learning more about abortion and that they intended to voluntarily seek out

opportunities outside their formal training to supplement their education in TOP. Such elective and independent training opportunities need to be developed.

There are many opportunities for incorporation of abortion education into the MBChB curriculum, both during basic sciences/preclinical instruction and in the clinical years (see Table 10 for suggestions). Training in certain key areas, including legal dimensions of care provision, basic clinical training in performing surgical and medical abortion, management of complications, observation of procedures, and reproductive health rotations which include more detailed TOP education should be made compulsory in the medical curriculum. Students who conscientiously object should have the option not to take part in observations, but should have a working understanding of abortion legality, management of complications, and their ethical responsibilities to refer/disclose their objection/inform patients of their rights. Additionally, all medical students should be trained to perform abortions in emergency cases.

In the long term, developing and implementing standardized medical education requirements and instituting government curriculum audits may be effective approaches to addressing the deficiencies in abortion training in medical schools (Westhoff, 1994).

Table 10. Potential Curriculum Opportunities for TOP Instruction

	Course/Module
Basic Sciences/Preclinical	Pharmacology Introduction to Clinical Medicine Physiology (reproductive module) Radiology Genetics Preventive Medicine Ethics Behavioural Sciences Medical Humanities Human Development, Embryology Sexual History-taking
Clinical	OB/GYN clerkship and/or rotation Elective in Reproductive Health

Adapted from Wear and Keck-McNulty, 2003

often difficult to identify), step away from their daily duties and tasks to pursue such training, and generally be willing to train other nurses in abortion care, due to widespread shortages of trainers (Varkey, 2000; Adamo, 2003; and van der Westhuizen, 2001). Considering that nurses often are the sole health providers in underserved areas (particularly rural areas) in South Africa, they are critical determinants to access to abortion care (van der Westhuizen, 2001; Dickson-Tetteh and Billings, 2002). In the absence of the physician, nurses and nurse-midwives are essential points of contact for service delivery in South African communities; their formal training should incorporate compulsory TOP education in a consistent and coherent manner.

Fourth, residency programs in OB/GYN and family medicine should be required to incorporate abortion care into their training in order to be considered comprehensive programmes, and final certification examinations should cover management of TOP complications and general clinical practice questions about TOP. In addition to family planning and OB/GYN residents, general internists have demonstrated an interest in being trained in performing abortions in other countries (Schwarz et al, 2005); as such, internal medicine residency programmes in South Africa could be encouraged to include abortion care in their training as well. The National Department of Health should take an active role in ensuring that residents are adequately trained in TOP care, in the interests of identifying additional providers to handle the overwhelming demand for such services in South Africa. Until TOP is made mainstream in medical training curricula, stigmatization and discrimination among providers' peers may remain a substantial deterrent to quality, accessible, equitable abortion care.

Fifth, additional research in this field should examine future medical providers attending other training institutions in South Africa- particularly nurses in training, such as nurse-midwives- to determine if their knowledge, attitudes, beliefs, and intentions are similar to respondents' in the current survey. Identifying knowledge, attitudes, beliefs and intentions with respect to abortion care at an early stage can lend perspective to the service delivery problem in this country and can inform future policy making with respect to TOP. Additionally, medical training programmes, as well as nursing programmes, should be the focus of continued research assessing the quality, coverage, and appropriateness of national curricula, particularly as related to TOP education. Finally, as previously mentioned, long-term cohort studies designed to follow medical students through their professional trajectory to clinical practice would be a useful approach to identifying changes in knowledge, attitudes, beliefs, and practice behaviours, albeit a time-consuming and likely expensive approach. Such studies may better assess how attitudes and opinions are formed, how knowledge

about TOP is absorbed, and what factors influence intentions to provide or refer for services.

Sixth, the government should work to incentivize provision of 'unpopular' medical care services such as abortion. Creative incentive strategies, including developing higher pay structures and improving institutional support for providers, may help ensure that access and availability issues are addressed and may also diminish stigmatization and discrimination providers experience in the workplace. Under the current circumstances, abortion providers are overwhelmed with case load demand, overworked because of lack of providers and institutional support, underappreciated by the health care system, and underpaid for the amount of work and difficulty of conditions they encounter. It is easy to understand why identifying willing providers in abortion care remains one of the most crucial problems in TOP service delivery.

In conclusion, truly effective strategies to address problems in TOP care must be carefully planned, strategically implemented, and regularly monitored and evaluated, with input from all stakeholders, governmental and non-governmental alike. A coherent, widespread effort to improve TOP training and service delivery must be identified, incorporating private and public medical practitioners, the Department of Health, academic training and research institutions, future medical providers, and non-governmental health organizations into the discussion. Until we begin to approach termination of pregnancy in a multidisciplinary manner with all stakeholders, abortion care delivery and deficiencies in professional training in TOP will remain serious public health dilemmas in South Africa.

9.0 STAKEHOLDERS

Stakeholders in this research included:

- South African Department of Health (Local, Provincial, and National)
- The University of Cape Town (UCT), and the MBChB programme at UCT
- Other medical training institutions in South Africa.
- Curriculum development planners at South African medical universities
- MBChB students and other future health professionals in training

The investigators had no competing interests to declare in this study.

10.0 REPORTING and IMPLEMENTATION

Findings from this research will be disseminated to the Department of Health, the University of Cape Town MBChB curriculum development personnel, the UCT medical faculty and students who participated in the research. It is our hope that these results will accomplish the following:

- inform health policy development around the issue of TOP and provider shortages
- aid in future curriculum planning
- inform discussions about access, quality of care, and equitable delivery of unbiased, non-judgmental abortion services
- suggest strategies for improving training, initiating values clarification programs, and designing supportive workplaces and learning centres for current and future providers of TOP services
- be published in a peer-review journal for further dissemination, possibly aiding in the development of health policy strategies and creative curriculum planning in other settings outside of South Africa

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13.0 APPENDICES

APPENDIX A: Results Tables

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Table 1. Socio-demographics, sexual history, and plans for specialization among medical school students at the University of Cape Town, South Africa as indicated on self-administered questionnaire

Characteristic, n (%)	First year 186 (21.1)	Second year 177 (20.1)	Third year 118 (13.4)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
Median Age (range) in years	19 (17-25)	20 (17-29)	21 (19-31)	-	-	-	20.0 (17-31)
Age							
17-19 years	128 (71.1)	39 (22.6)	1 (0.9)	-	-	-	168 (36.2)
20-21 years	43 (23.9)	109 (63.0)	70 (63.1)				222 (47.8)
22-23 years	6 (3.3)	19 (11.0)	31 (27.9)				56 (12.1)
24-25 years	3 (1.7)	3 (1.7)	6 (5.4)				12 (2.6)
26-31 years	0 (0.0)	3 (1.7)	3 (2.7)				6 (1.3)
Sex							
Male	72 (38.7)	71 (40.1)	43 (36.4)	49 (32.7)	65 (39.2)	24 (28.2)	324 (36.7)
Female	114 (61.3)	106 (59.9)	75 (63.6)	101 (67.3)	101 (60.8)	61 (71.8)	558 (63.3)
Religious Affiliation							
Catholic	22 (11.9)	20 (11.3)	10 (8.5)	16 (10.8)	18 (10.8)	9 (10.6)	95 (10.8)
Christian, non-Catholic	116 (62.7)	101 (57.0)	63 (53.4)	79 (53.4)	86 (51.9)	42 (49.5)	487 (55.5)
Muslim	20 (10.8)	22 (12.4)	19 (16.1)	21 (14.2)	27 (16.3)	15 (17.6)	124 (14.1)
Hindu	6 (3.2)	12 (6.8)	13 (11.0)	8 (5.4)	14 (8.4)	8 (9.4)	61 (6.9)
Jewish	7 (3.8)	6 (3.4)	2 (1.7)	4 (2.7)	2 (1.2)	2 (2.3)	23 (2.6)
Other religion	5 (2.7)	4 (2.3)	6 (5.1)	8 (5.4)	6 (3.6)	1 (1.2)	30 (3.4)
Agnostic/Atheist	9 (4.9)	12 (6.8)	5 (4.2)	12 (8.1)	13 (7.8)	8 (9.4)	59 (6.7)
Frequency of Religious Service Attendance							
Regular	85 (45.7)	74 (41.8)	63 (53.4)	64 (43.0)	71 (43.0)	25 (35.2)	382 (44.1)
Semi-regular	40 (21.5)	37 (20.9)	20 (17.0)	24 (16.1)	45 (27.3)	22 (31.0)	188 (21.7)
Not often	42 (22.6)	50 (28.3)	22 (18.6)	38 (25.5)	32 (19.4)	18 (25.4)	202 (23.3)
Never	19 (10.2)	16 (9.0)	13 (11.0)	23 (15.4)	17 (10.3)	6 (8.4)	94 (10.9)
Relationship Status							
Single, Never with someone	67 (36.2)	43 (24.3)	23 (19.5)	15 (10.2)	21 (13.0)	9 (12.7)	178 (20.7)
Single, Not with anyone currently	72 (38.9)	74 (41.8)	43 (36.5)	48 (32.6)	54 (33.6)	24 (33.8)	315 (36.7)
Single, In a relationship	44 (23.8)	60 (33.9)	47 (39.8)	78 (53.1)	72 (44.7)	33 (46.5)	334 (38.9)
Other (including married)	2 (1.1)	0 (0.0)	5 (4.2)	6 (4.1)	14 (8.7)	5 (7.0)	32 (3.7)
Type of Residential Area Raised In							
Urban/City	73 (39.2)	75 (42.3)	54 (45.8)	-	-	-	202 (42.0)
Township	23 (12.4)	23 (13.0)	9 (7.6)				55 (11.4)
Rural/Farm	16 (8.6)	21 (11.9)	14 (11.9)				51 (10.6)
Suburban	71 (38.2)	57 (32.2)	41 (34.7)				169 (35.1)
Other	3 (1.6)	1 (0.6)	0 (0.0)				4 (0.9)
South African Nationality	164 (88.2)	156 (88.1)	96 (81.4)	-	-	-	416 (86.5)
Province in South Africa							
Eastern Cape	26 (16.2)	25 (16.5)	12 (13.3)	-	-	-	63 (15.7)
Free State	3 (1.9)	3 (2.0)	1 (1.1)				7 (1.8)
Gauteng	17 (10.6)	22 (14.6)	9 (10.0)				48 (12.0)
Kwa-Zulu Natal	37 (23.1)	27 (17.9)	23 (25.6)				87 (21.7)
Limpopo	9 (5.6)	10 (6.6)	5 (5.6)				24 (6.0)
Mpumalanga	2 (1.3)	5 (3.3)	1 (1.1)				8 (2.0)
Northwest	3 (1.9)	4 (2.6)	4 (4.4)				11 (2.7)
Northern	2 (1.3)	1 (0.7)	0 (0.0)				3 (0.7)
Western Cape	61 (38.1)	54 (35.8)	35 (38.9)				150 (37.4)
Population Group							
White	53 (28.6)	47 (26.6)	27 (23.3)	61 (40.9)	47 (29.0)	39 (46.4)	274 (31.4)
African	73 (39.5)	71 (40.1)	42 (36.2)	40 (26.9)	57 (35.2)	16 (19.0)	299 (34.3)
Coloured	30 (16.2)	26 (14.7)	14 (12.1)	24 (16.1)	22 (13.6)	10 (11.9)	126 (14.4)
Indian	20 (10.8)	26 (14.7)	31 (26.7)	23 (15.4)	28 (17.3)	16 (19.1)	144 (16.5)
Other	9 (4.9)	7 (3.9)	2 (1.7)	1 (0.7)	8 (4.9)	3 (3.6)	30 (3.4)
Ever Had Sexual Intercourse	38 (20.9)	60 (33.9)	34 (30.9)	73 (49.7)	81 (51.9)	51 (62.2)	337 (39.5)
Median First Sex (range) in years	17 (7-21)	18 (7-21)	18 (15-26)	-	-	-	18.0 (7-26)
Considering specializing in OBGYN							
Strongly agree/agree	48 (26.7)	39 (22.0)	31 (26.5)	41 (27.3)	42 (25.4)	11 (12.9)	212 (24.2)
Neutral	54 (30.0)	46 (26.0)	30 (25.6)	30 (20.0)	31 (18.8)	8 (9.4)	199 (22.8)
Strongly disagree/disagree	78 (43.3)	92 (52.0)	56 (47.9)	79 (52.7)	92 (55.8)	66 (77.7)	463 (53.0)
Considering specializing in FamMed							
Strongly agree/agree	54 (29.5)	36 (20.4)	20 (17.2)	25 (16.8)	38 (23.2)	29 (34.5)	202 (23.2)
Neutral	72 (39.3)	58 (33.0)	33 (28.4)	45 (30.2)	53 (32.3)	14 (16.7)	275 (31.5)
Strongly disagree/disagree	57 (31.2)	82 (46.6)	63 (54.4)	79 (53.0)	73 (44.5)	41 (48.8)	395 (45.3)

Table 2. Knowledge of abortion among medical school students at the University of Cape Town, South Africa as indicated on self-administered questionnaire

Characteristic, n (%) Q 12-22	First year 186 (38.7)	Second year 177 (36.8)	Third year 118 (24.5)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
12. Legal abortion on request is available in South Africa							
True	168 (90.3)	157 (91.3)	116 (99.2)	142 (95.3)	163 (98.2)	84 (98.8)	830 (94.9)
False	0 (0.0)	2 (1.2)	1 (0.8)	4 (2.7)	2 (1.2)	1 (1.2)	10 (1.1)
Don't know/uncertain	18 (9.7)	13 (7.5)	0 (0.0)	3 (2.0)	1 (0.6)	0 (0.0)	35 (4.0)
13. Women can obtain abortion for any reason up to 12 wks gestation							
True	118 (63.4)	136 (77.7)	116 (99.2)	147 (98.0)	157 (95.2)	80 (94.1)	754 (85.9)
False	7 (3.8)	3 (1.7)	1 (0.8)	2 (1.3)	6 (3.6)	4 (4.7)	23 (2.6)
Don't know/uncertain	61 (32.8)	36 (20.6)	0 (0.0)	1 (0.7)	2 (1.2)	1 (1.2)	101 (11.5)
14. Between 12-20 wks, women can obtain abortion ONLY if the pregnancy presents physical harm to the mother							
True	99 (53.2)	113 (64.6)	22 (19.0)	87 (58.4)	79 (47.9)	19 (22.6)	419 (47.9)
False	8 (4.3)	14 (8.0)	92 (79.3)	58 (38.9)	81 (49.1)	65 (77.4)	318 (36.3)
Don't know/uncertain	79 (42.5)	48 (27.4)	2 (1.7)	4 (2.7)	5 (3.0)	0 (0.0)	138 (15.8)
15. Beyond 20 weeks, abortion is illegal							
True	87 (47.3)	83 (47.4)	12 (10.5)	48 (32.7)	36 (22.2)	23 (27.4)	289 (33.4)
False	10 (5.4)	26 (14.9)	99 (86.8)	79 (53.7)	106 (65.4)	61 (72.6)	381 (44.0)
Don't know/uncertain	87 (47.3)	66 (37.7)	3 (2.6)	20 (13.6)	20 (12.4)	0 (0.0)	196 (22.6)
16. I know of at least one facility where a woman can obtain a TOP							
True	83 (44.8)	102 (58. 6)	77 (65.8)	117 (78.0)	147 (89.6)	80 (94.1)	606 (69.3)
False	36 (19.5)	33 (19.0)	22 (18.8)	15 (10.0)	8 (4.9)	2 (2.4)	116 (13.2)
Don't know/uncertain	66 (35.7)	39 (22.4)	18 (15.4)	18 (12.0)	9 (5.5)	3 (3.5)	153 (17.5)
17. Abortion is free in public health facilities in South Africa							
True	50 (27.3)	100 (57.1)	91 (79.1)	113 (75.3)	109 (66.5)	71 (83.5)	534 (61.2)
False	20 (10.9)	7 (4.0)	4 (3.5)	4 (2.7)	12 (7.3)	4 (4.7)	51 (5.9)
Don't know/uncertain	113 (61.8)	68 (38.9)	20 (17.4)	33 (22.0)	43 (26.2)	10 (11.8)	287 (32.9)
18. I know someone who has had an abortion							
True	64 (34.6)	64 (36.8)	47 (40.2)	64 (42.7)	76 (46.6)	47 (56.0)	362 (41.5)
False	85 (46.0)	84 (48.3)	58 (49.5)	78 (52.0)	72 (44.2)	32 (38.1)	409 (46.8)
Don't know/uncertain	36 (19.4)	26 (14.9)	12 (10.3)	8 (5.3)	15 (9.2)	5 (5.9)	102 (11.7)
19. Only MDs can perform TOPs							
True	30 (16.1)	49 (28.2)	4 (3.4)	51 (34.0)	36 (22.2)	16 (18.8)	186 (21.3)
False	73 (39.2)	63 (36.2)	109 (94.0)	65 (43.3)	111 (68.5)	69 (81.2)	490 (56.1)
Don't know/uncertain	83 (44.6)	62 (35.6)	3 (2.6)	34 (22.7)	15 (9.3)	0 (0.0)	197 (22.6)
20. Under apartheid, TOP was illegal							
True	82 (44.1)	107 (61.1)	73 (62.4)	128 (85.9)	131 (79.9)	67 (78.8)	588 (67.1)
False	5 (2.7)	7 (4.0)	27 (23.1)	10 (6.7)	5 (3.0)	8 (9.4)	62 (7.1)
Don't know/uncertain	99 (53.2)	61 (34.9)	17 (14.5)	11 (7.4)	28 (17.1)	10 (11.8)	226 (25.8)
21. Performed by trained medical professionals, TOPs are safe							
True	120 (64.5)	110 (62.8)	106 (92.2)	131 (87.9)	140 (85.4)	69 (82.1)	676 (77.4)
False	29 (15.6)	39 (22.3)	6 (5.2)	13 (8.7)	18 (11.0)	11 (13.1)	116 (13.3)
Don't know/uncertain	37 (19.9)	26 (14.9)	3 (2. 6)	5 (3.4)	6 (3.6)	4 (4.8)	81 (9.3)
22. Performed by an untrained person, TOPs are safe							
True	11 (5.9)	10 (5.7)	4 (3.4)	14 (9.4)	10 (6.1)	2 (2.3)	51 (5.8)
False	160 (86.0)	158 (90.3)	113 (96.6)	135 (90.6)	154 (93.3)	83 (97.7)	803 (91.6)
Don't know/uncertain	15 (8.1)	7 (4.0)	0 (0.00)	0 (0.0)	1 (0.6)	0 (0.0)	23 (2.6)

Table 2a. Characteristics associated with knowledge: Legal TOP on request is available in South Africa

Characteristic, n (%)	TOP is available	TOP is not available	P-value
Age	99.30 (424)	0.70 (3)	0.44 (FE)
17-19 years	100.0 (149)	0 (0)	
20-21 years	98.57 (207)	1.43 (3)	
22-23 years	100.0 (51)	0 (0)	
24-25 years	100.0 (11)	0 (0)	
26-31 years	100.0 (6)	0 (0)	
Year in Medical School	98.81 (830)	1.19 (10)	0.36 (FE)
First year	100.0 (168)	0.0 (0)	
Second year	98.74 (157)	1.26 (2)	
Third year	99.15 (116)	0.85 (1)	
Fourth year	97.26 (142)	2.74 (4)	
Fifth year	98.79 (163)	1.21 (2)	
Sixth year	98.82 (84)	1.18 (1)	
Sex	98.81 (830)	1.19 (10)	0.04 (FE)
Male	97.68 (295)	2.32 (7)	
Female	99.44 (535)	0.56 (3)	
Religious Affiliation	98.81 (827)	1.19 (10)	0.13 (FE)
Catholic	100.0 (92)	0 (0)	
Christian, non-Catholic	99.13 (458)	0.87 (4)	
Muslim	99.12 (113)	0.88 (1)	
Hindu	96.67 (58)	3.33 (2)	
Jewish	100 (23)	0 (0)	
Other religion	96.43 (27)	3.57 (1)	
Agnostic/Atheist	96.55 (56)	3.45 (2)	
Frequency of Religious Service Attendance	98.79 (814)	1.21 (10)	0.55 (FE)
Regular	98.90 (360)	1.10 (4)	
Semi-regular	99.44 (179)	0.56 (1)	
Not often	98.45 (190)	1.55 (3)	
Never	97.70 (85)	2.30 (2)	
Relationship Status	98.78 (808)	1.22 (10)	0.99 (FE)
Single, Never with someone	98.78 (162)	1.22 (2)	
Single, Not with anyone currently	98.67 (296)	1.33 (4)	
Single, In a relationship	98.76 (319)	1.24 (4)	
Other (including married)	100.0 (31)	0 (0)	
Type of Residential Area Raised In	99.32 (441)	0.68 (3)	0.26 (FE)
Urban/City	100.0 (188)	0 (0)	
Township	100.0 (51)	0 (0)	
Rural/Farm	100.0 (43)	0 (0)	
Suburban	98.11 (156)	3 (1.89)	
Other	100.0 (3)	0 (0)	
Nationality	99.32 (441)	0.68 (3)	0.99 (FE)
South African	99.23 (388)	0.77 (3)	
Non-South African	100.0 (53)	0 (0)	
Province in South Africa	99.20 (373)	0.80 (3)	0.59 (FE)
Eastern Cape	100.0 (57)	0 (0)	
Free State	100.0 (7)	0 (0)	
Gauteng	100.0 (46)	0 (0)	
Kwa-Zulu Natal	97.47 (77)	2.53 (2)	
Limpopo	100.0 (21)	0 (0)	
Mpumalanga	100.0 (8)	0 (0)	
Northwest	100.0 (11)	0 (0)	
Northern	100.0 (2)	0 (0)	
Western Cape	99.31 (144)	0.69 (1)	
Population Group	98.80 (821)	1.20 (10)	0.004 (FE)
White	98.51 (265)	1.49 (4)	
African	100.0 (278)	0 (0)	
Coloured	100.0 (120)	0 (0)	
Indian	96.32 (131)	3.68 (5)	
Other	96.43 (27)	3.57 (1)	
Ever Had Sexual Intercourse	98.77 (804)	1.23 (10)	0.53 (FE)
Yes	98.48 (323)	1.52 (5)	
No	98.97 (481)	1.03 (5)	
Considering specializing in OBGYN	98.80 (824)	1.20 (10)	0.70 (FE)
Strongly agree/agree	99.02 (202)	0.98 (2)	
Neutral	99.47 (187)	0.53 (1)	
Strongly disagree/disagree	98.42 (435)	1.58 (7)	
Considering specializing in FamMed	98.80 (820)	1.20 (10)	0.29 (FE)
Strongly agree/agree	98.96 (191)	1.04 (2)	
Neutral	99.61 (258)	0.39 (1)	
Strongly disagree/disagree	98.15 (371)	1.85 (7)	

Table 2b. Characteristics associated with knowledge about TOP: I know of at least one facility where a woman can obtain a TOP

Characteristic, n (%)	Yes, I know a facility where a woman can obtain a TOP procedure	No, I do not know of a facility where a woman can obtain a TOP procedure	P-value
Age	74.63 (253)	25.37 (86)	0.94 (FE)
17-19 years	73.21 (82)	26.79 (30)	
20-21 years	74.42 (128)	25.58 (44)	
22-23 years	75.61 (31)	24.39 (10)	
24-25 years	88.89 (8)	11.11 (1)	
26-31 years	80.00 (4)	20.00 (1)	
Year in Medical School	83.93 (606)	16.07 (116)	<0.0001
First year	69.75 (83)	30.25 (36)	
Second year	75.56 (102)	24.44 (33)	
Third year	77.78 (77)	22.22 (22)	
Fourth year	88.64 (117)	11.36 (15)	
Fifth year	94.84 (147)	5.16 (8)	
Sixth year	97.56 (80)	2.44 (2)	
Sex	83.93 (606)	16.07 (116)	0.045
Male	85.33 (221)	14.67 (38)	
Female	83.15 (385)	16.85 (78)	
Religious Affiliation	83.89 (604)	16.11 (116)	0.62
Catholic	82.67 (62)	17.33 (13)	
Christian, non-Catholic	82.54 (331)	17.46 (70)	
Muslim	86.00 (86)	14.00 (14)	
Hindu	81.13 (43)	18.87 (10)	
Jewish	94.44 (17)	5.56 (1)	
Other religion	92.00 (23)	8.00 (2)	
Agnostic/Atheist	87.50 (42)	12.50 (6)	
Frequency of Religious Service Attendance	83.59 (591)	16.41 (116)	0.66
Regular	82.22 (259)	17.78 (56)	
Semi-regular	83.85 (135)	16.15 (26)	
Not often	83.87 (130)	16.13 (25)	
Never	88.16 (67)	11.84 (9)	
Relationship Status	83.59 (586)	16.41 (115)	0.03 (FE)
Single, Never with someone	77.17 (98)	22.83 (29)	
Single, Not with anyone currently	81.64 (209)	18.36 (47)	
Single, In a relationship	87.20 (252)	12.80 (37)	
Other (including married)	93.10 (27)	6.90 (2)	
Type of Residential Area Raised In	74.22 (262)	25.78 (91)	0.20 (FE)
Urban/City	80.00 (116)	20.00 (29)	
Township	66.67 (28)	33.33 (14)	
Rural/Farm	24 (72.73)	27.27 (9)	
Suburban	70.99 (93)	29.01 (38)	
Other	50.00 (1)	50.00 (1)	
Nationality	74.22 (262)	25.78 (91)	0.16
South African	75.40 (236)	24.60 (77)	
Non-South African	65.00 (26)	35.00 (14)	
Province in South Africa	75.08 (226)	24.92 (75)	0.50
Eastern Cape	72.09 (31)	27.91 (12)	
Free State	100.0 (6)	0 (0)	
Gauteng	88.24 (30)	11.76 (4)	
Kwa-Zulu Natal	72.73 (48)	27.27 (18)	
Limpopo	78.95 (15)	21.05 (4)	
Mpumalanga	57.14 (4)	42.86 (3)	
Northwest	70.00 (7)	30.00 (3)	
Northern	66.67 (2)	33.33 (1)	
Western Cape	73.45 (83)	26.55 (30)	
Population Group	83.73 (597)	16.27 (116)	0.08 (FE)
White	88.55 (201)	11.45 (26)	
African	79.67 (192)	20.33 (49)	
Coloured	82.35 (84)	17.65 (18)	
Indian	82.20 (97)	17.80 (21)	
Other	92.00 (23)	8.00 (2)	
Ever Had Sexual Intercourse	83.95 (586)	16.05 (112)	0.005
Yes	88.58 (256)	11.42 (33)	
No	80.68 (330)	19.32 (79)	

Characteristic, n (%)	Yes, I know a facility where a woman can obtain a TOP procedure	No, I do not know of a facility where a woman can obtain a TOP procedure	P-value
Considering specializing in OBGYN	84.08 (602)	15.92 (114)	0.62
Strongly agree/agree	81.71 (143)	18.29 (32)	
Neutral	84.97 (130)	15.03 (23)	
Strongly disagree/disagree	84.79 (329)	15.21 (59)	
Considering specializing in FamMed	83.78 (599)	16.22 (116)	0.92
Strongly agree/agree	84.39 (146)	15.61 (27)	
Neutral	82.95 (180)	17.05 (37)	
Strongly disagree/disagree	84.00 (273)	16.00 (52)	
Knowing Someone Who Has Had an Abortion			
True, I know someone	88.62 (288)	11.38 (37)	0.007
False, I do not know anyone	79.70 (263)	20.30 (67)	
Uncertain	80.95 (51)	19.05 (12)	

Characteristic, n (%) Q23-27; Q30; Q31; Q36-38	First year 186 (38.7)	Second year 177 (36.8)	Third year 118 (24.5)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
24 j. TOP should be legal if woman chooses the procedure on her own							
Strongly agree/agree	47 (25.6)	61 (34.7)	55 (46.6)				163 (34.1)
Neutral	40 (21.7)	35 (19.9)	24 (20.3)	-	-	-	99 (20.7)
Strongly disagree/disagree	97 (52.7)	80 (45.4)	39 (33.1)				216 (45.2)
24 k. TOP should be legal if pregnancy was unplanned							
Strongly agree	15 (8.2)	30 (17.2)	25 (21.5)	24 (16.2)	24 (14.9)	13 (15.5)	131 (15.1)
Agree	13 (7.1)	19 (10.9)	21 (18.1)	32 (21.6)	20 (12.4)	19 (22.6)	124 (14.3)
Neutral	22 (12.0)	27 (15.5)	14 (12.1)	26 (17.6)	24 (14.9)	17 (20.2)	130 (15.0)
Disagree	37 (20.2)	33 (19.0)	23 (19.8)	34 (23.0)	37 (23.0)	13 (15.5)	177 (20.5)
Strongly disagree	96 (52.5)	65 (37.4)	33 (28.5)	32 (21.6)	56 (34.8)	22 (26.2)	304 (35.1)
24 k. TOP should be legal if pregnancy was unplanned							
Strongly agree/agree	28 (15.3)	49 (28.2)	46 (39.7)	56 (37.8)	44 (27.3)	32 (38.1)	255 (29.5)
Neutral	22 (12.0)	27 (15.5)	14 (12.1)	26 (17.6)	24 (14.9)	17 (20.2)	130 (15.0)
Strongly disagree/disagree	133 (72.7)	98 (56.3)	56 (48.3)	66 (44.6)	93 (57.8)	35 (41.7)	481 (55.5)
25. TOP should be legal for any reason							
Strongly agree	10 (5.6)	24 (13.7)	10 (8.6)	13 (9.0)	25 (15.4)	17 (20.2)	99 (11.5)
Agree	9 (5.0)	11 (6.3)	11 (9.5)	37 (25.5)	24 (14.8)	18 (21.4)	110 (12.8)
Neutral	25 (13.9)	19 (10.9)	26 (22.4)	23 (15.9)	22 (13.6)	4 (4.8)	119 (13.8)
Disagree	36 (20.0)	39 (22.3)	17 (14.7)	34 (23.4)	31 (19.1)	17 (20.2)	174 (20.2)
Strongly disagree	100 (55.5)	82 (46.8)	52 (44.8)	38 (26.2)	60 (37.1)	28 (33.4)	360 (41.7)
25. TOP should be legal for any reason							
Strongly agree/agree	19 (10.6)	35 (20.0)	21 (18.1)	50 (34.5)	49 (30.2)	35 (41.7)	209 (24.2)
Neutral	25 (13.9)	19 (10.9)	26 (22.4)	23 (15.9)	22 (13.6)	4 (4.7)	119 (13.8)
Strongly disagree/disagree	136 (75.5)	121 (69.1)	69 (59.5)	72 (49.6)	91 (56.2)	45 (53.6)	534 (62.0)
26 a. Restrictions on abortion: requiring parental notification for girls under 18 years of age							
Strongly agree	73 (39.7)	70 (40.5)	21 (18.0)	-	-	-	164 (34.6)
Agree	58 (31.5)	36 (20.8)	30 (25.6)				124 (26.2)
Neutral	21 (11.4)	16 (9.2)	20 (17.1)				57 (12.0)
Disagree	11 (6.0)	23 (13.3)	27 (23.1)				61 (12.9)
Strongly disagree	21 (11.4)	28 (16.2)	19 (16.2)				68 (14.3)
26 a. Restrictions on abortion: requiring parental notification for girls under 18 years of age							
Strongly agree/agree	131 (71.2)	106 (61.3)	51 (43.6)	-	-	-	288 (60.8)
Neutral	21 (11.4)	16 (9.2)	20 (17.1)				57 (12.0)
Strongly disagree/disagree	32 (17.4)	51 (29.5)	46 (39.3)				129 (27.2)
26 b. Restrictions on abortion: requiring parental consent for girls under 18 years of age							
Strongly agree	45 (24.7)	41 (24.0)	6 (5.1)	-	-	-	92 (19.5)
Agree	41 (22.5)	30 (17.5)	10 (8.5)				81 (17.2)
Neutral	40 (22.0)	29 (17.0)	34 (28.8)				103 (21.9)
Disagree	30 (16.5)	34 (19.9)	39 (33.0)				103 (21.9)
Strongly disagree	26 (14.3)	37 (21.6)	29 (24.6)				92 (19.5)
26 b. Restrictions on abortion: requiring parental consent for girls under 18 years of age							
Strongly agree/agree	86 (47.2)	71 (41.5)	16 (13.6)	-	-	-	173 (36.7)
Neutral	40 (22.0)	29 (17.0)	34 (28.8)				103 (21.9)
Strongly disagree/disagree	56 (30.8)	71 (41.5)	68 (57.6)				195 (41.4)
26 c. Restrictions on abortion: specifying that TOP cannot be performed after 12 wks pregnancy							
Strongly agree	49 (26.8)	46 (26.9)	10 (8.6)				105 (22.3)
Agree	51 (27.9)	22 (12.9)	18 (15.5)	-	-	-	91 (19.4)
Neutral	42 (22.9)	49 (28.6)	23 (19.8)				114 (24.2)
Disagree	23 (12.6)	34 (19.9)	36 (31.1)				93 (19.8)
Strongly disagree	18 (9.8)	20 (11.7)	29 (25.0)				67 (14.3)
26 c. Restrictions on abortion: specifying that TOP cannot be performed after 12 wks pregnancy							
Strongly agree/agree	100 (54.6)	68 (39.8)	28 (24.2)				196 (41.7)
Neutral	42 (23.0)	49 (28.6)	23 (19.8)	-	-	-	114 (24.3)
Strongly disagree/disagree	41 (22.4)	54 (31.6)	65 (56.0)				160 (34.0)

Characteristic, n (%) Q23-27; Q30; Q31; Q36-38	First year 186 (38.7)	Second year 177 (36.8)	Third year 118 (24.5)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
26 d. Restrictions on abortion: specifying that TOP cannot be performed after 16 wks pregnancy							
Strongly agree	46 (25.4)	45 (26.6)	18 (15.5)				109 (23.4)
Agree	36 (19.9)	21 (12.4)	12 (10.3)	-	-	-	69 (14.8)
Neutral	42 (23.2)	51 (30.2)	19 (16.4)				112 (24.0)
Disagree	32 (17.7)	31 (18.4)	40 (34.5)				103 (22.1)
Strongly disagree	25 (13.8)	21 (12.4)	27 (23.3)				73 (15.7)
26 d. Restrictions on abortion: specifying that TOP cannot be performed after 16 wks pregnancy							
Strongly agree/agree	82 (45.3)	66 (39.0)	30 (25.9)				178 (38.2)
Neutral	42 (23.2)	51 (30.2)	19 (16.4)	-	-	-	112 (24.0)
Strongly disagree/disagree	57 (31.5)	52 (30.8)	67 (57.7)				176 (37.8)
26 e. Restrictions on abortion: specifying that TOP cannot be performed after 20 wks pregnancy							
Strongly agree	61 (34.3)	57 (33.5)	20 (17.1)				138 (29.7)
Agree	32 (18.0)	26 (15.3)	18 (15.4)	-	-	-	76 (16.3)
Neutral	33 (18.5)	41 (24.1)	26 (22.2)				100 (21.5)
Disagree	26 (14.6)	24 (14.1)	29 (24.8)				79 (17.0)
Strongly disagree	26 (14.6)	22 (13.0)	24 (20.5)				72 (15.5)
26 e. Restrictions on abortion: specifying that TOP cannot be performed after 20 wks pregnancy							
Strongly agree/agree	93 (52.3)	83 (48.8)	38 (32.5)				214 (46.0)
Neutral	33 (18.5)	41 (24.1)	26 (22.2)	-	-	-	100 (21.5)
Strongly disagree/disagree	52 (29.2)	46 (27.1)	53 (45.3)				151 (32.5)
26 f. Restrictions on abortion: requiring an MD's statement that woman's health is at risk							
Strongly agree	77 (42.3)	68 (39.3)	39 (33.1)	-	-	-	184 (38.9)
Agree	53 (29.1)	53 (30.6)	39 (33.1)				145 (30.7)
Neutral	31 (17.0)	18 (10.4)	22 (18.6)				71 (15.0)
Disagree	12 (6.6)	16 (9.3)	8 (6.8)				36 (7.6)
Strongly disagree	9 (5.0)	18 (10.4)	10 (8.4)				37 (7.8)
26 f. Restrictions on abortion: requiring an MD's statement that woman's health is at risk							
Strongly agree/agree	130 (71.4)	121 (69.9)	78 (66.1)	-	-	-	329 (69.6)
Neutral	31 (17.0)	18 (10.4)	22 (18.6)				71 (15.0)
Strongly disagree/disagree	21 (11.6)	34 (19.7)	18 (15.3)				73 (15.4)
26 g. Restrictions on abortion: requiring a waiting period (5-10 days) to "think about it"							
Strongly agree	64 (35.2)	66 (38.4)	30 (25.4)	-	-	-	160 (33.9)
Agree	53 (29.1)	63 (36.6)	45 (38.1)				161 (34.1)
Neutral	39 (21.4)	25 (14.5)	24 (20.3)				88 (18.7)
Disagree	12 (6.6)	5 (2.9)	9 (7.6)				26 (5.5)
Strongly disagree	14 (7.7)	13 (7.6)	10 (8.5)				37 (7.8)
26 g. Restrictions on abortion: requiring a waiting period (5-10 days) to "think about it"							
Strongly agree/agree	117 (64.3)	129 (75.0)	75 (63.6)	-	-	-	321 (68.0)
Neutral	39 (21.4)	25 (14.5)	24 (20.3)				88 (18.6)
Strongly disagree/disagree	26 (14.3)	18 (10.5)	19 (16.1)				63 (13.4)
26 h. Restrictions on abortion: requiring partner consent for TOP							
Strongly agree	43 (23.8)	37 (21.6)	9 (7.7)				89 (19.0)
Agree	41 (22.6)	34 (19.9)	17 (14.5)	-	-	-	92 (19.6)
Neutral	42 (23.2)	29 (17.0)	27 (23.1)				98 (20.9)
Disagree	26 (14.4)	33 (19.3)	28 (22.9)				87 (18.5)
Strongly disagree	29 (16.0)	38 (22.2)	36 (30.8)				103 (22.0)
26 h. Restrictions on abortion: requiring partner consent for TOP							
Strongly agree/agree	84 (46.4)	71 (41.5)	26 (22.2)				181 (38.6)
Neutral	42 (23.2)	29 (17.0)	27 (23.1)	-	-	-	98 (20.9)
Strongly disagree/disagree	55 (30.4)	71 (41.5)	64 (54.7)				190 (40.5)

Characteristic, n (%) Q23-27; Q30; Q31; Q36-38	First year 186 (38.7)	Second year 177 (36.8)	Third year 118 (24.5)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
26 i. Restrictions on abortion: restricting a woman to one abortion only in her lifetime							
Strongly agree	29 (15.9)	19 (11.4)	5 (4.3)	-	-	-	53 (11.4)
Agree	19 (10.5)	9 (5.4)	12 (10.4)				40 (8.6)
Neutral	60 (33.0)	59 (35.3)	40 (34.8)				159 (34.3)
Disagree	35 (19.2)	35 (21.0)	30 (26.1)				100 (21.6)
Strongly disagree	39 (21.4)	45 (26.9)	28 (24.4)				112 (24.1)
26 i. Restrictions on abortion: restricting a woman to one abortion only in her lifetime							
Strongly agree/agree	48 (26.4)	28 (16.8)	17 (14.8)	-	-	-	93 (20.0)
Neutral	60 (33.0)	59 (35.3)	40 (34.8)				159 (34.3)
Strongly disagree/disagree	74 (40.6)	80 (47.9)	58 (50.4)				212 (45.7)
27. The government should be responsible for providing TOPs as part of free, public health care							
Strongly agree	22 (12.0)	41 (24.0)	33 (29.0)	54 (36.5)	53 (32.5)	23 (27.4)	226 (26.2)
Agree	30 (16.4)	33 (19.3)	24 (21.0)	46 (31.1)	34 (20.9)	31 (36.9)	198 (22.9)
Neutral	36 (19.7)	48 (28.1)	26 (22.8)	29 (19.6)	30 (18.4)	14 (16.7)	183 (21.2)
Disagree	30 (16.4)	13 (7.6)	18 (15.8)	9 (6.1)	22 (13.5)	10 (11.9)	102 (11.8)
Strongly disagree	65 (35.5)	36 (21.0)	13 (11.4)	10 (6.7)	24 (14.7)	6 (7.1)	154 (17.9)
27. The government should be responsible for providing TOPs as part of free, public health care							
Strongly agree/agree	52 (28.4)	74 (43.3)	57 (50.0)	100 (67.6)	87 (53.4)	54 (64.3)	424 (49.1)
Neutral	36 (19.7)	48 (28.1)	26 (22.8)	29 (19.6)	30 (18.4)	14 (16.7)	183 (21.2)
Strongly disagree/disagree	95 (51.9)	49 (28.6)	31 (27.2)	19 (12.8)	46 (28.2)	16 (19.0)	256 (29.7)
30. I believe it is necessary to legalize/regulate some form of safe, accessible abortion in South Africa							
Strongly agree	42 (22.9)	68 (39.5)	54 (47.4)				164 (35.0)
Agree	61 (33.3)	45 (26.2)	30 (26.3)	-	-	-	136 (29.0)
Neutral	32 (17.5)	22 (12.8)	23 (20.2)				77 (16.4)
Disagree	25 (13.7)	16 (9.3)	2 (1.7)				43 (9.2)
Strongly disagree	23 (12.6)	21 (12.2)	5 (4.4)				49 (10.4)
30. I believe it is necessary to legalize/regulate some form of safe, accessible abortion in South Africa							
Strongly agree/agree	103 (56.3)	113 (65.7)	84 (73.7)				300 (64.0)
Neutral	32 (17.5)	22 (12.8)	23 (20.2)	-	-	-	77 (16.4)
Strongly disagree/disagree	48 (26.2)	37 (21.5)	7 (6.1)				92 (19.6)
31. I believe that abortion is *morally unacceptable* for any reason.							
Strongly agree	54 (29.4)	29 (16.6)	16 (13.8)	11 (7.4)	23 (13.9)	6 (7.1)	139 (15.9)
Agree	33 (17.9)	20 (11.4)	15 (12.9)	8 (5.4)	18 (10.9)	4 (4.8)	98 (11.2)
Neutral	40 (21.7)	40 (22.8)	28 (24.2)	39 (26.2)	31 (18.8)	10 (11.9)	188 (21.5)
Disagree	26 (14.1)	43 (24.6)	34 (29.3)	53 (35.5)	50 (30.3)	32 (38.1)	238 (27.3)
Strongly disagree	31 (16.9)	43 (24.6)	23 (19.8)	38 (25.5)	43 (26.1)	32 (38.1)	210 (24.1)
31. I believe that abortion is *morally unacceptable* for any reason.							
Strongly agree/agree	87 (47.3)	49 (28.0)	31 (26.7)	19 (12.7)	41 (24.8)	10 (11.9)	237 (27.2)
Neutral	40 (21.7)	40 (22.9)	28 (24.1)	39 (26.2)	31 (18.8)	10 (11.9)	188 (21.5)
Strongly disagree/disagree	57 (31.0)	86 (49.1)	57 (49.2)	91 (61.1)	93 (56.4)	64 (76.2)	448 (51.3)
36. I believe that abortions *should not be provided* for any reason.							
Strongly agree	31 (17.2)	17 (9.6)	5 (4.3)	13 (8.9)	11 (6.7)	6 (7.1)	83 (9.6)
Agree	30 (16.7)	20 (11.3)	12 (10.3)	9 (6.1)	13 (7.9)	2 (2.4)	86 (9.9)
Neutral	28 (15.6)	34 (19.2)	17 (14.7)	16 (10.9)	17 (10.4)	6 (7.1)	118 (13.6)
Disagree	60 (33.3)	49 (27.7)	45 (38.8)	55 (37.4)	58 (35.4)	33 (39.3)	300 (34.5)
Strongly disagree	31 (17.2)	57 (32.2)	37 (31.9)	54 (36.7)	65 (39.6)	37 (44.1)	281 (32.4)
36. I believe that abortions *should not be provided* for any reason.							
Strongly agree/agree	61 (33.9)	37 (20.9)	17 (14.7)	22 (15.0)	24 (14.6)	8 (9.5)	169 (19.5)
Neutral	28 (15.6)	34 (19.2)	17 (14.7)	16 (10.9)	17 (10.4)	6 (7.2)	118 (13.6)
Strongly disagree/disagree	91 (50.5)	106 (59.9)	82 (60.6)	109 (74.1)	123 (75.0)	70 (83.3)	581 (66.9)

Characteristic, n (%) Q23-27; Q30; Q31; Q36-38	**First year 186 (38.7)**	**Second year 177 (36.8)**	**Third year 118 (24.5)**	**Fourth year 150 (17.0)**	**Fifth year 166 (18.8)**	**Sixth year 85 (9.6)**	**Total 882 (100.0)**
37. I believe that a woman should have the right to decide for herself whether or not to have an abortion.							
Strongly agree	44 (25.7)	1 (100.0)	50 (42.4)	64 (43.0)	65 (39.9)	35 (41.7)	259 (37.8)
Agree	61 (35.7)		36 (30.5)	47 (31.5)	42 (25.8)	30 (35.7)	216 (31.5)
Neutral	19 (11.1)		13 (11.0)	14 (9.4)	25 (15.3)	10 (11.9)	81 (11.8)
Disagree	32 (18.7)		13 (11.0)	17 (11.4)	20 (12.3)	4 (4.8)	86 (12.5)
Strongly disagree	15 (8.8)		6 (5.1)	7 (4.7)	11 (6.7)	5 (5.9)	44 (6.4)
37. I believe that a woman should have the right to decide for herself whether or not to have an abortion.							
Strongly agree/agree	105 (61.4)	1 (100.0)	86 (72.9)	111 (74.5)	107 (65.7)	65 (77.4)	475 (69.2)
Neutral	19 (11.1)		13 (11.0)	14 (9.4)	25 (15.3)	10 (11.9)	81 (11.8)
Strongly disagree/disagree	47 (27.5)		19 (16.1)	24 (16.1)	31 (19.0)	9 (10.7)	130 (19.0)
38. I believe that abortion should be a personal choice.							
Strongly agree	38 (22.1)	1 (100.0)	48 (40.7)	-	-	-	87 (29.9)
Agree	57 (33.1)		37 (31.3)				94 (32.3)
Neutral	24 (13.9)		14 (11.9)				38 (13.1)
Disagree	35 (20.4)		13 (11.0)				48 (16.5)
Strongly disagree	18 (10.5)		6 (5.1)				24 (8.2)
38. I believe that abortion should be a personal choice.							
Strongly agree/agree	95 (55.2)	1 (100.0)	85 (72.0)	-	-	-	181 (62.2)
Neutral	24 (14.0)		14 (11.9)				38 (13.1)
Strongly disagree/disagree	53 (30.8)		19 (16.1)				72 (24.7)

Table 3a. Characteristics associated with abortion attitudes and beliefs: Safe abortion should be legal and accessible

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	53.57 (210)	46.43 (182)	0.004 (FE)
17-19 years	41.91 (57)	58.09 (79)	
20-21 years	57.51 (111)	42.49 (82)	
22-23 years	71.11 (32)	28.89 (13)	
24-25 years	50.00 (6)	50.00 (6)	
26-31 years	66.67 (4)	33.33 (2)	
Year in Medical School	53.81 (219)	46.19 (188)	0.001
First year	42.86 (66)	57.14 (88)	
Second year	56.13 (87)	43.87 (68)	
Third year	67.35 (66)	32.65 (32)	
Fourth year	-	-	
Fifth year	-	-	
Sixth year	-	-	
Sex	53.81 (219)	46.19 (188)	0.08
Male	48.43 (77)	51.57 (82)	
Female	57.26 (142)	42.74 (106)	
Religious Affiliation	53.94 (219)	46.06 (187)	<0.0001
Catholic	46.34 (19)	53.66 (22)	
Christian, non-Catholic	48.35 (117)	51.65 (125)	
Muslim	29.79 (14)	70.21 (33)	
Hindu	96.43 (27)	3.57 (1)	
Jewish	92.86 (13)	7.14 (1)	
Other religion	75.00 (9)	25.00 (3)	
Agnostic/Atheist	90.91 (20)	9.09 (2)	
Frequency of Religious Service Attendance	53.81 (219)	46.19 (188)	<0.0001
Regular	21.58 (41)	78.42 (149)	
Semi-regular	72.29 (60)	27.71 (23)	
Not often	88.42 (84)	11.58 (11)	
Never	87.18 (34)	12.82 (5)	
Relationship Status	53.94 (219)	46.06 (187)	<0.0001 (FE)
Single, Never with someone	39.82 (45)	60.18 (68)	
Single, Not with anyone currently	51.90 (82)	48.10 (76)	
Single, In a relationship	69.53 (89)	30.47 (39)	
Other (including married)	42.86 (3)	57.14 (4)	
Type of Residential Area Raised In	53.81 (219)	46.19 (188)	0.08 (FE)
Urban/City	60.69 (105)	39.31 (68)	
Township	51.16 (22)	48.84 (21)	
Rural/Farm	45.24 (19)	54.76 (23)	
Suburban	49.6 (73)	50.34 (74)	
Other	0 (0)	100.0 (2)	
Nationality	53.81 (219)	46.19 (188)	0.06
South African	51.99 (183)	48.01 (169)	
Non-South African	65.45 (36)	34.55 (19)	
Province in South Africa	51.61 (176)	48.39 (165)	0.47
Eastern Cape	46.30 (25)	53.70 (29)	
Free State	57.14 (4)	42.86 (3)	
Gauteng	57.14 (24)	42.86 (18)	
Kwa-Zulu Natal	60.76 (48)	39.24 (31)	
Limpopo	43.75 (7)	56.25 (9)	
Mpumalanga	33.33 (2)	66.67 (4)	
Northwest	50.00 (4)	50.00 (4)	
Northern	0 (0)	100.0 (2)	
Western Cape	48.82 (62)	51.18 (65)	
Population Group	53.83 (218)	46.17 (187)	0.21 (FE)
White	51.75 (59)	48.25 (55)	
African	56.29 (85)	43.71 (66)	
Coloured	41.67 (25)	58.33 (35)	
Indian	60.94 (39)	39.06 (25)	
Other	62.50 (10)	37.50 (6)	
Ever Had Sexual Intercourse	53.50 (214)	46.50 (186)	<0.0001
Yes	72.97 (81)	27.03 (30)	
No	46.02 (133)	53.98 (156)	
Considering specializing in OBGYN	53.96 (218)	46.04 (186)	0.74
Strongly agree/agree	51.04 (49)	48.96 (47)	
Neutral	56.30 (67)	43.70 (52)	
Strongly disagree/disagree	53.97 (102)	46.03 (87)	

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Considering specializing in FamMed	53.85 (217)	46.15 (186)	0.01
Strongly agree/agree	40.00 (36)	60.00 (54)	
Neutral	56.43 (79)	43.57 (61)	
Strongly disagree/disagree	58.96 (102)	41.04 (71)	
Knowing Someone Who Has Had an Abortion			
True, I know someone	61.44 (94)	38.56 (59)	0.05
False, I do not know anyone	48.42 (92)	51.58 (98)	
Uncertain	53.33 (32)	46.67 (28)	

Table 3b. Characteristics associated with abortion attitudes and beliefs: TOP should be legal for any reason

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	17.88 (69)	82.12 (317)	0.28 (FE)
17-19 years	13.87 (19)	86.13 (118)	
20-21 years	19.90 (39)	80.10 (157)	
22-23 years	16.22 (6)	83.78 (31)	
24-25 years	30.00 (3)	70.00 (7)	
26-31 years	33.33 (2)	66.67 (4)	
Year in Medical School	28.13 (209)	71.87 (534)	<0.0001
First year	12.26 (19)	87.74 (136)	
Second year	22.44 (35)	77.56 (121)	
Third year	23.33 (21)	76.67 (69)	
Fourth year	40.98 (50)	59.02 (72)	
Fifth year	35.00 (49)	65.00 (91)	
Sixth year	43.75 (35)	56.25 (45)	
Sex	28.13 (209)	71.87 (534)	0.41
Male	26.32 (70)	73.68 (196)	
Female	29.14 (139)	70.86 (338)	
Religious Affiliation	28.21 (209)	71.79 (532)	<0.0001
Catholic	28.75 (23)	71.25 (57)	
Christian, non-Catholic	23.95 (97)	76.05 (308)	
Muslim	8.41 (9)	91.59 (98)	
Hindu	47.06 (24)	52.94 (27)	
Jewish	60.00 (12)	40.00 (8)	
Other religion	28.00 (7)	72.00 (18)	
Agnostic/Atheist	69.81 (37)	30.19 (16)	
Frequency of Religious Service Attendance	26.89 (196)	73.11 (533)	<0.0001
Regular	10.45 (35)	89.55 (300)	
Semi-regular	31.17 (48)	68.83 (106)	
Not often	39.75 (64)	60.25 (97)	
Never	62.03 (49)	37.97 (30)	
Relationship Status	27.01 (195)	72.99 (527)	<0.0001
Single, Never with someone	14.29 (22)	85.71 (132)	
Single, Not with anyone currently	25.86 (68)	74.14 (195)	
Single, In a relationship	36.00 (99)	64.00 (176)	
Other (including married)	20.00 (6)	80.00 (24)	
Type of Residential Area Raised In	18.70 (75)	81.30 (326)	0.95 (FE)
Urban/City	20.35 (35)	79.65 (137)	
Township	16.67 (7)	83.33 (35)	
Rural/Farm	18.42 (7)	81.58 (31)	
Suburban	17.69 (26)	82.31 (121)	
Other	0 (0)	100.0 (2)	
Nationality	18.70 (75)	81.30 (326)	0.09
South African	17.51 (62)	82.49 (292)	
Non-South African	27.66 (13)	72.34 (34)	
Province in South Africa	17.70 (60)	82.30 (279)	0.81
Eastern Cape	17.24 (10)	82.76 (48)	
Free State	33.33 (2)	66.67 (4)	
Gauteng	16.28 (7)	83.72 (36)	
Kwa-Zulu Natal	19.72 (14)	80.28 (57)	
Limpopo	28.57 (4)	71.43 (10)	
Mpumalanga	0 (0)	100.0 (6)	
Northwest	11.11 (1)	88.89 (8)	
Northern	0 (0)	100.0 (2)	
Western Cape	16.92 (22)	83.08 (108)	
Population Group	28.40 (209)	71.60 (527)	0.02
White	33.60 (84)	66.40 (166)	
African	29.91 (70)	70.09 (164)	
Coloured	18.87 (20)	81.13 (86)	
Indian	26.23 (32)	73.77 (90)	
Other	12.50 (3)	87.50 (21)	
Ever Had Sexual Intercourse	28.47 (205)	71.53 (515)	<0.0001
Yes	47.39 (127)	52.61 (141)	
No	17.26 (78)	82.74 (374)	
Considering specializing in OBGYN	27.91 (206)	72.09 (532)	0.08
Strongly agree/agree	23.26 (40)	76.74 (132)	
Neutral	34.13 (57)	65.87 (110)	
Strongly disagree/disagree	27.32 (109)	72.68 (290)	

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Considering specializing in FamMed	28.13 (207)	71.88 (529)	0.67
Strongly agree/agree	27.84 (49)	72.16 (127)	
Neutral	26.20 (60)	73.80 (169)	
Strongly disagree/disagree	29.61 (98)	70.39 (233)	
Knowing Someone Who Has Had an Abortion			
True, I know someone	34.77 (105)	65.23 (197)	0.004
False, I do not know anyone	23.10 (82)	76.90 (273)	
Uncertain	26.92 (21)	73.08 (57)	

Table 3c. Characteristics associated with abortion attitudes and beliefs: The government should be responsible for providing TOPs as part of free, public health care

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	50.87 (175)	49.13 (169)	0.009 (FE)
17-19 years	38.71 (48)	61.29 (76)	
20-21 years	57.32 (94)	42.68 (70)	
22-23 years	60.98 (25)	39.02 (16)	
24-25 years	45.45 (5)	54.55 (6)	
26-31 years	75.00 (3)	25.00 (1)	
Year in Medical School	62.35 (424)	37.65 (256)	<0.0001
First year	35.37 (52)	64.63 (95)	
Second year	60.16 (74)	39.84 (49)	
Third year	64.77 (57)	35.23 (31)	
Fourth year	84.03 (100)	15.97 (19)	
Fifth year	65.41 (87)	34.59 (46)	
Sixth year	77.14 (54)	22.86 (16)	
Sex	62.35 (424)	37.65 (256)	0.98
Male	62.40 (156)	37.60 (94)	
Female	62.33 (268)	37.67 (162)	
Religious Affiliation	62.33 (422)	37.67 (255)	<0.0001
Catholic	62.86 (44)	37.14 (26)	
Christian, non-Catholic	54.31 (208)	45.69 (175)	
Muslim	50.00 (42)	50.00 (42)	
Hindu	94.00 (47)	6.00 (3)	
Jewish	100.0 (21)	0 (0)	
Other religion	80.00 (16)	20.00 (4)	
Agnostic/Atheist	89.80 (44)	10.20 (5)	
Frequency of Religious Service Attendance	61.60 (409)	38.40 (255)	<0.0001
Regular	36.10 (100)	63.90 (177)	
Semi-regular	72.79 (107)	27.21 (40)	
Not often	84.38 (135)	15.63 (25)	
Never	83.75 (67)	16.25 (13)	
Relationship Status	61.91 (408)	38.09 (251)	<0.0001
Single, Never with someone	43.44 (53)	56.56 (69)	
Single, Not with anyone currently	56.10 (138)	43.90 (108)	
Single, In a relationship	76.49 (205)	23.51 (63)	
Other (including married)	52.17 (12)	47.83 (11)	
Type of Residential Area Raised In	51.12 (183)	48.88 (175)	0.67 (FE)
Urban/City	55.56 (85)	44.44 (68)	
Township	48.65 (18)	51.35 (19)	
Rural/Farm	48.72 (19)	51.28 (20)	
Suburban	47.62 (60)	52.38 (66)	
Other	33.33 (1)	66.67 (2)	
Nationality	51.12 (183)	48.88 (175)	0.21
South African	49.84 (155)	50.16 (156)	
Non-South African	59.57 (28)	40.43 (19)	
Province in South Africa	49.16 (147)	50.84 (152)	0.66
Eastern Cape	44.68 (21)	55.32 (26)	
Free State	50.00 (3)	50.00 (3)	
Gauteng	45.95 (17)	54.05 (20)	
Kwa-Zulu Natal	59.42 (41)	40.58 (28)	
Limpopo	53.85 (7)	46.15 (6)	
Mpumalanga	20.00 (1)	80.00 (4)	
Northwest	37.50 (3)	62.50 (5)	
Northern	50.0 (1)	50.00 (1)	
Western Cape	47.32 (53)	52.68 (59)	
Population Group	62.67 (423)	37.33 (252)	0.24
White	64.32 (146)	35.68 (81)	
African	60.35 (137)	39.65 (90)	
Coloured	58.06 (54)	41.94 (39)	
Indian	70.48 (74)	29.52 (31)	
Other	52.17 (12)	47.83 (11)	
Ever Had Sexual Intercourse	62.58 (413)	37.42 (247)	<0.0001
Yes	80.21 (227)	19.79 (56)	
No	49.34 (186)	50.66 (191)	
Considering specializing in OBGYN	62.61 (422)	37.39 (252)	0.94
Strongly agree/agree	61.39 (97)	38.61 (61)	
Neutral	62.99 (97)	37.01 (57)	
Strongly disagree/disagree	62.98 (228)	37.02 (134)	

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Considering specializing in FamMed	62.26 (419)	37.74 (254)	0.05
Strongly agree/agree	58.02 (94)	41.98 (68)	
Neutral	58.29 (123)	41.71 (88)	
Strongly disagree/disagree	67.33 (202)	32.67 (98)	
Knowing Someone Who Has Had an Abortion			
True, I know someone	68.32 (207)	31.68 (96)	0.004
False, I do not know anyone	60.00 (180)	40.00 (120)	
Uncertain	48.65 (36)	51.35 (38)	

Table 3d. Characteristics associated with abortion attitudes and beliefs: I believe it is necessary to legalize/regulate some form of safe, accessible abortion in South Africa

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	76.46 (289)	23.54 (89)	0.06 (FE)
17-19 years	69.47 (91)	30.53 (40)	
20-21 years	78.49 (146)	21.51 (40)	
22-23 years	88.89 (40)	11.11 (5)	
24-25 years	70.00 (7)	30.00 (3)	
26-31 years	83.33 (5)	16.67 (1)	
Year in Medical School	76.53 (300)	23.47 (92)	<0.0001
First year	68.21 (103)	31.79 (48)	
Second year	75.33 (113)	24.67 (37)	
Third year	92.31 (84)	7.69 (7)	
Fourth year	-	-	
Fifth year	-	-	
Sixth year	-	-	
Sex	76.53 (300)	23.47 (92)	0.007
Male	69.28 (106)	30.72 (47)	
Female	81.17 (194)	18.83 (45)	
Religious Affiliation	76.73 (300)	23.27 (91)	0.003
Catholic	69.77 (30)	30.23 (13)	
Christian, non-Catholic	72.44 (163)	27.56 (62)	
Muslim	72.73 (32)	27.27 (12)	
Hindu	96.55 (28)	3.45 (1)	
Jewish	100.0 (14)	0 (0)	
Other religion	83.33 (10)	16.67 (2)	
Agnostic/Atheist	95.83 (23)	4.17 (1)	
Frequency of Religious Service Attendance	76.53 (300)	23.47 (92)	<0.0001
Regular	55.95 (94)	44.05 (74)	
Semi-regular	90.24 (74)	9.76 (8)	
Not often	92.00 (92)	8.00 (8)	
Never	95.24 (40)	4.76 (2)	
Relationship Status	76.73 (300)	23.27 (91)	0.001 (FE)
Single, Never with someone	72.45 (71)	27.55 (27)	
Single, Not with anyone currently	69.62 (110)	30.38 (48)	
Single, In a relationship	88.46 (115)	11.54 (15)	
Other (including married)	80.00 (4)	20.00 (1)	
Type of Residential Area Raised In	76.53 (300)	23.47 (92)	0.13 (FE)
Urban/City	81.07 (137)	18.93 (32)	
Township	80.49 (33)	19.51 (8)	
Rural/Farm	63.41 (26)	36.59 (15)	
Suburban	73.72 (101)	26.28 (36)	
Other	75.00 (3)	25.00 (1)	
Nationality	76.53 (300)	23.47 (92)	0.03
South African	74.71 (254)	25.29 (86)	
Non-South African	88.46 (46)	11.54 (6)	
Province in South Africa	74.09 (243)	25.91 (85)	0.45
Eastern Cape	76.00 (38)	24.00 (12)	
Free State	66.67 (4)	33.33 (2)	
Gauteng	75.61 (31)	24.39 (10)	
Kwa-Zulu Natal	78.57 (55)	21.43 (15)	
Limpopo	61.11 (11)	38.89 (7)	
Mpumalanga	50.00 (3)	50.00 (3)	
Northwest	87.50 (7)	12.50 (1)	
Northern	33.33 (1)	66.67 (2)	
Western Cape	73.81 (93)	26.19 (33)	
Population Group	76.67 (299)	23.33 (91)	0.41 (FE)
White	73.04 (84)	26.96 (31)	
African	77.40 (113)	22.60 (33)	
Coloured	73.08 (38)	26.92 (14)	
Indian	85.25 (52)	14.75 (9)	
Other	75.00 (12)	25.00 (4)	
Ever Had Sexual Intercourse	76.24 (292)	23.76 (91)	0.001
Yes	87.29 (103)	12.71 (15)	
No	71.32 (189)	28.68 (76)	
Considering specializing in OBGYN	76.49 (296)	23.51 (91)	0.47
Strongly agree/agree	76.60 (72)	23.40 (22)	
Neutral	72.48 (79)	27.52 (30)	
Strongly disagree/disagree	78.80 (145)	21.20 (39)	

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Considering specializing in FamMed	76.55 (297)	23.45 (91)	0.41
Strongly agree/agree	71.43 (60)	28.57 (24)	
Neutral	76.69 (102)	23.31 (31)	
Strongly disagree/disagree	78.95 (135)	21.05 (36)	
Knowing Someone Who Has Had an Abortion			
True, I know someone	79.86 (115)	20.14 (29)	0.46
False, I do not know anyone	74.05 (137)	25.95 (48)	
Uncertain	77.42 (48)	22.58 (14)	

Table 3e. Characteristics associated with abortion attitudes and beliefs: Abortion is morally unacceptable for any reason

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	45.68 (164)	54.32 (195)	0.003 (FE)
17-19 years	59.50 (72)	40.50 (49)	
20-21 years	38.73 (67)	61.27 (106)	
22-23 years	37.50 (18)	62.50 (30)	
24-25 years	50.00 (6)	50.00 (6)	
26-31 years	20.00 (1)	80.00 (4)	
Year in Medical School	34.60 (237)	65.40 (448)	<0.0001
First year	60.42 (87)	39.58 (57)	
Second year	36.30 (49)	63.70 (86)	
Third year	35.23 (31)	64.77 (57)	
Fourth year	17.27 (19)	82.73 (91)	
Fifth year	30.60 (41)	69.40 (93)	
Sixth year	13.51 (10)	86.49 (64)	
Sex	34.60 (237)	65.40 (448)	0.06
Male	39.11 (97)	60.89 (151)	
Female	32.04 (140)	67.96 (297)	
Religious Affiliation	34.55 (236)	65.45 (447)	<0.0001
Catholic	47.14 (33)	52.86 (37)	
Christian, non-Catholic	41.55 (155)	58.45 (218)	
Muslim	40.86 (38)	59.14 (55)	
Hindu	4.26 (2)	95.74 (45)	
Jewish	4.76 (1)	95.24 (20)	
Other religion	12.50 (3)	87.50 (21)	
Agnostic/Atheist	7.27 (4)	92.73 (51)	
Frequency of Religious Service Attendance	35.22 (236)	64.78 (434)	<0.0001
Regular	58.84 (173)	41.16 (121)	
Semi-regular	21.90 (30)	78.10 (107)	
Not often	15.82 (25)	84.18 (133)	
Never	9.88 (8)	90.12 (73)	
Relationship Status	35.29 (235)	64.71 (431)	<0.0001
Single, Never with someone	51.72 (75)	48.28 (70)	
Single, Not with anyone currently	38.66 (92)	61.34 (146)	
Single, In a relationship	22.48 (58)	77.52 (200)	
Other (including married)	40.00 (10)	60.00 (15)	
Type of Residential Area Raised In	45.50 (167)	54.50 (200)	0.01 (FE)
Urban/City	36.36 (56)	63.64 (98)	
Township	41.86 (18)	58.14 (25)	
Rural/Farm	58.97 (23)	41.03 (16)	
Suburban	53.13 (68)	46.88 (60)	
Other	66.67 (2)	33.33 (1)	
Nationality	45.50 (167)	54.50 (200)	0.66
South African	45.94 (147)	54.06 (173)	
Non-South African	42.55 (20)	57.45 (27)	
Province in South Africa	45.81 (142)	54.19 (168)	0.78
Eastern Cape	44.19 (19)	55.81 (24)	
Free State	50.00 (3)	50.00 (3)	
Gauteng	43.24 (16)	56.76 (21)	
Kwa-Zulu Natal	44.12 (30)	55.88 (38)	
Limpopo	68.75 (11)	31.25 (5)	
Mpumalanga	40.00 (2)	60.00 (3)	
Northwest	28.57 (2)	71.43 (5)	
Northern	33.33 (1)	66.67 (2)	
Western Cape	46.40 (58)	53.60 (67)	
Population Group	34.66 (235)	65.34 (443)	0.19
White	34.75 (82)	65.25 (154)	
African	37.61 (82)	62.39 (136)	
Coloured	39.36 (37)	60.64 (57)	
Indian	27.10 (29)	72.90 (78)	
Other	21.74 (5)	78.26 (18)	
Ever Had Sexual Intercourse	34.64 (230)	65.36 (434)	<0.0001
Yes	21.25 (58)	78.75 (215)	
No	43.99 (172)	56.01 (219)	
Considering specializing in OBGYN	34.46 (234)	65.54 (445)	0.47
Strongly agree/agree	31.76 (54)	68.24 (116)	
Neutral	38.13 (61)	61.88 (99)	
Strongly disagree/disagree	34.10 (119)	65.90 (230)	

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Considering specializing in FamMed	34.71 (235)	65.29 (442)	0.05
Strongly agree/agree	38.22 (60)	61.78 (97)	
Neutral	39.23 (82)	60.77 (127)	
Strongly disagree/disagree	29.90 (93)	70.10 (218)	
Knowing Someone Who Has Had an Abortion			
True, I know someone	28.04 (83)	71.96 (213)	0.001
False, I do not know anyone	37.74 (120)	62.26 (198)	
Uncertain	50.75 (34)	49.25 (33)	

Table 3f. Characteristics associated with abortion attitudes and beliefs: Abortions should not be provided for any reason

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	29.40 (112)	70.60 (269)	0.09 (FE)
17-19 years	36.92 (48)	63.08 (82)	
20-21 years	25.41 (47)	74.59 (138)	
22-23 years	22.45 (11)	77.55 (38)	
24-25 years	45.45 (5)	54.55 (6)	
26-31 years	16.67 (1)	83.33 (5)	
Year in Medical School	22.53 (169)	77.47 (581)	<0.0001
First year	40.13 (61)	59.87 (91)	
Second year	25.87 (37)	74.13 (106)	
Third year	17.17 (17)	82.83 (82)	
Fourth year	16.79 (22)	83.21 (109)	
Fifth year	16.33 (24)	83.67 (123)	
Sixth year	8 (10.26)	89.74 (70)	
Sex	22.53 (169)	77.47 (581)	0.33
Male	24.54 (66)	75.46 (203)	
Female	21.41 (103)	78.59 (378)	
Religious Affiliation	22.46 (168)	77.54 (580)	<0.0001
Catholic	20.0 (15)	80.0 (60)	
Christian, non-Catholic	29.13 (120)	70.87 (292)	
Muslim	18.00 (18)	82.00 (82)	
Hindu	7.14 (4)	92.86 (52)	
Jewish	13.64 (3)	86.36 (19)	
Other religion	19.23 (5)	80.77 (21)	
Agnostic/Atheist	5.26 (3)	94.74 (54)	
Frequency of Religious Service Attendance	22.66 (167)	77.34 (570)	<0.0001
Regular	37.66 (116)	62.34 (192)	
Semi-regular	14.81 (24)	85.19 (138)	
Not often	12.22 (22)	87.78 (158)	
Never	5.75 (5)	94.25 (82)	
Relationship Status	22.54 (165)	77.46 (567)	<0.0001
Single, Never with someone	37.06 (53)	62.94 (90)	
Single, Not with anyone currently	25.86 (68)	74.14 (195)	
Single, In a relationship	13.18 (39)	86.82 (257)	
Other (including married)	16.67 (5)	83.33 (25)	
Type of Residential Area Raised In	29.19 (115)	70.81 (279)	0.07 (FE)
Urban/City	24.40 (41)	75.60 (127)	
Township	44.19 (19)	55.81 (24)	
Rural/Farm	38.46 (15)	61.54 (24)	
Suburban	27.66 (39)	72.34 (102)	
Other	33.33 (1)	66.67 (2)	
Nationality	29.19 (115)	70.81 (279)	0.007
South African	31.75 (107)	68.25 (230)	
Non-South African	14.04 (8)	85.96 (49)	
Province in South Africa	32.11 (105)	67.89 (222)	0.57
Eastern Cape	37.74 (20)	62.26 (33)	
Free State	40.00 (2)	60.00 (3)	
Gauteng	20.51 (8)	79.49 (31)	
Kwa-Zulu Natal	28.38 (21)	71.62 (53)	
Limpopo	38.46 (5)	61.54 (8)	
Mpumalanga	50.00 (3)	50.00 (3)	
Northwest	28.57 (2)	71.43 (5)	
Northern	66.67 (2)	33.33 (1)	
Western Cape	33.07 (42)	66.93 (85)	
Population Group	22.51 (167)	77.49 (575)	0.27
White	23.46 (57)	76.54 (186)	
African	25.31 (61)	74.69 (180)	
Coloured	21.62 (24)	78.38 (87)	
Indian	18.85 (23)	81.15 (99)	
Other	8.00 (2)	92.00 (23)	
Ever Had Sexual Intercourse	22.15 (161)	77.85 (566)	<0.0001
Yes	13.62 (41)	86.38 (260)	
No	28.17 (120)	71.83 (306)	
Considering specializing in OBGYN	22.36 (167)	77.64 (580)	0.11
Strongly agree/agree	23.20 (42)	76.80 (139)	
Neutral	27.65 (47)	72.35 (123)	
Strongly disagree/disagree	19.70 (78)	80.30 (318)	

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Considering specializing in FamMed	22.55 (168)	77.45 (577)	0.05
Strongly agree/agree	26.47 (45)	73.53 (125)	
Neutral	25.52 (61)	74.48 (178)	
Strongly disagree/disagree	18.45 (62)	81.55 (274)	
Knowing Someone Who Has Had an Abortion			
True, I know someone	18.61 (59)	81.39 (258)	0.005
False, I do not know anyone	23.63 (82)	76.37 (265)	
Uncertain	35.44 (28)	64.56 (51)	

Table 3g. Characteristics associated with abortion attitudes and beliefs: I believe that a woman should have the right to decide whether or not to obtain an abortion

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	74.09 (183)	25.91 (64)	0.25 (FE)
17-19 years	68.22 (73)	31.78 (34)	
20-21 years	77.78 (77)	22.22 (22)	
22-23 years	84.38 (27)	15.63 (5)	
24-25 years	66.67 (4)	33.33 (2)	
26-31 years	66.67 (2)	33.33 (1)	
Year in Medical School	78.51 (475)	21.49 (130)	0.01 (FE)
First year	69.08 (105)	30.92 (47)	
Second year	100 (1)	0.0 (0)	
Third year	81.90 (86)	18.10 (19)	
Fourth year	82.22 (111)	17.78 (24)	
Fifth year	77.54 (107)	22.46 (31)	
Sixth year	87.84 (65)	12.16 (9)	
Sex	78.51 (475)	21.49 (130)	0.001
Male	71.23 (156)	28.77 (63)	
Female	82.64 (319)	17.36 (67)	
Religious Affiliation	78.57 (473)	21.43 (129)	<0.0001
Catholic	78.46 (51)	21.54 (14)	
Christian, non-Catholic	75.77 (247)	24.23 (79)	
Muslim	66.67 (56)	33.33 (28)	
Hindu	93.18 (41)	6.82 (3)	
Jewish	92.86 (13)	7.14 (1)	
Other religion	91.30 (21)	8.70 (2)	
Agnostic/Atheist	95.65 (44)	4.35 (2)	
Frequency of Religious Service Attendance	78.00 (461)	22.00 (130)	<0.0001
Regular	65.87 (166)	34.13 (86)	
Semi-regular	83.59 (107)	16.41 (21)	
Not often	86.57 (116)	13.43 (18)	
Never	93.51 (72)	6.49 (5)	
Relationship Status	78.33 (459)	21.67 (127)	0.01
Single, Never with someone	70.80 (80)	29.20 (33)	
Single, Not with anyone currently	75.85 (157)	24.15 (50)	
Single, In a relationship	84.81 (201)	15.19 (36)	
Other (including married)	72.41 (21)	27.59 (8)	
Type of Residential Area Raised In	74.42 (192)	25.58 (66)	0.63 (FE)
Urban/City	78.18 (86)	21.82 (24)	
Township	65.22 (15)	34.78 (8)	
Rural/Farm	74.07 (20)	25.93 (7)	
Suburban	72.63 (69)	27.37 (26)	
Other	66.67 (2)	33.33 (1)	
Nationality	74.42 (192)	25.58 (66)	0.49
South African	73.64 (162)	26.36 (58)	
Non-South African	78.95 (30)	21.05 (8)	
Province in South Africa	72.86 (153)	27.14 (57)	0.26
Eastern Cape	65.63 (21)	34.38 (11)	
Free State	75.00 (3)	25.00 (1)	
Gauteng	70.83 (17)	29.17 (7)	
Kwa-Zulu Natal	81.13 (43)	18.87 (10)	
Limpopo	81.82 (9)	18.18 (2)	
Mpumalanga	100.00 (2)	0 (0)	
Northwest	83.33 (5)	16.67 (1)	
Northern	0 (0)	100.0 (2)	
Western Cape	69.74 (53)	30.26 (23)	
Population Group	78.43 (469)	21.57 (129)	0.52 (FE)
White	76.50 (153)	23.50 (47)	
African	79.89 (151)	20.11 (38)	
Coloured	77.38 (65)	22.62 (19)	
Indian	82.52 (85)	17.48 (18)	
Other	68.18 (15)	31.82 (7)	
Ever Had Sexual Intercourse	78.10 (453)	21.90 (127)	<0.0001
Yes	86.42 (210)	13.58 (33)	
No	72.11 (243)	27.89 (94)	
Considering specializing in OBGYN	78.37 (471)	21.63 (130)	0.93
Strongly agree/agree	78.77 (115)	21.23 (31)	
Neutral	79.29 (111)	20.71 (29)	
Strongly disagree/disagree	77.78 (245)	22.22 (70)	

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Considering specializing in FamMed	78.54 (472)	21.46 (129)	0.17
Strongly agree/agree	73.38 (102)	26.62 (37)	
Neutral	78.24 (151)	21.76 (42)	
Strongly disagree/disagree	81.41 (219)	18.59 (50)	
Knowing Someone Who Has Had an Abortion			
True, I know someone	82.20 (217)	17.80 (47)	0.19
False, I do not know anyone	76.38 (207)	23.62 (64)	
Uncertain	75.00 (48)	25.00 (16)	

Table 3h. Characteristics associated with abortion attitudes and beliefs: I believe that abortion should be a personal choice

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	71.07 (172)	28.93 (70)	0.28 (FE)
17-19 years	65.38 (68)	34.62 (36)	
20-21 years	75.51 (74)	24.49 (24)	
22-23 years	80.00 (24)	20.00 (6)	
24-25 years	57.14 (4)	42.86 (3)	
26-31 years	66.67 (2)	33.33 (1)	
Year in Medical School	71.54 (181)	28.46 (72)	0.003 (FE)
First year	64.19 (95)	35.81 (53)	
Second year	100.0 (1)	0.0 (0)	
Third year	81.73 (85)	18.27 (19)	
Fourth year	-	-	
Fifth year	-	-	
Sixth year	-	-	
Sex	71.54 (181)	28.46 (72)	0.001
Male	59.09 (52)	40.91 (36)	
Female	78.18 (129)	21.82 (36)	
Religious Affiliation	71.83 (181)	28.17 (71)	0.03
Catholic	71.43 (20)	28.57 (8)	
Christian, non-Catholic	69.33 (104)	30.67 (46)	
Muslim	57.69 (15)	42.31 (11)	
Hindu	88.89 (16)	11.11 (2)	
Jewish	100.0 (7)	0 (0)	
Other religion	60.00 (6)	40.00 (4)	
Agnostic/Atheist	100.0 (13)	0 (0)	
Frequency of Religious Service Attendance	71.54 (181)	28.46 (72)	<0.0001
Regular	54.24 (64)	45.76 (54)	
Semi-regular	83.33 (40)	16.67 (8)	
Not often	89.47 (51)	10.53 (6)	
Never	86.67 (26)	13.33 (4)	
Relationship Status	71.83 (181)	28.17 (71)	0.02 (FE)
Single, Never with someone	59.74 (46)	40.26 (31)	
Single, Not with anyone currently	72.92 (70)	27.08 (26)	
Single, In a relationship	82.19 (60)	17.81 (13)	
Other (including married)	83.33 (5)	16.67 (1)	
Type of Residential Area Raised In	71.54 (181)	28.46 (72)	0.93 (FE)
Urban/City	73.58 (78)	26.42 (28)	
Township	66.67 (16)	33.33 (8)	
Rural/Farm	73.91 (17)	26.09 (6)	
Suburban	70.10 (68)	29.90 (29)	
Other	66.67 (2)	33.33 (1)	
Nationality	71.54 (181)	28.46 (72)	0.70
South African	71.10 (155)	28.90 (63)	
Non-South African	74.29 (26)	25.71 (9)	
Province in South Africa	70.33 (147)	29.67 (62)	0.20
Eastern Cape	68.75 (22)	31.25 (10)	
Free State	100.0 (3)	0 (0)	
Gauteng	66.7 (16)	33.33 (8)	
Kwa-Zulu Natal	75.00 (42)	25.00 (14)	
Limpopo	90.00 (9)	10.00 (1)	
Mpumalanga	-	-	
Northwest	83.33 (5)	16.67 (1)	
Northern	0 (0)	100.0 (0)	
Western Cape	65.79 (50)	34.21 (26)	
Population Group	71.71 (180)	28.29 (71)	0.88 (FE)
White	71.43 (50)	28.57 (20)	
African	75.00 (69)	25.00 (23)	
Coloured	70.27 (26)	29.73 (11)	
Indian	67.44 (29)	32.56 (14)	
Other	66.67 (6)	33.33 (3)	
Ever Had Sexual Intercourse	70.78 (172)	29.22 (71)	0.01
Yes	82.81 (53)	17.19 (11)	
No	66.48 (119)	33.52 (60)	
Considering specializing in OBGYN	71.08 (177)	28.92 (72)	0.74
Strongly agree/agree	75.00 (45)	25.00 (15)	
Neutral	69.23 (54)	30.77 (24)	
Strongly disagree/disagree	70.27 (78)	29.73 (33)	

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Considering specializing in FamMed	71.43 (180)	28.57 (72)	0.009
Strongly agree/agree	56.90 (33)	43.10 (25)	
Neutral	71.43 (65)	28.57 (26)	
Strongly disagree/disagree	79.61 (82)	20.39 (21)	
Knowing Someone Who Has Had an Abortion			
True, I know someone	77.78 (70)	22.22 (20)	0.22
False, I do not know anyone	66.94 (81)	33.06 (40)	
Uncertain	72.50 (29)	27.50 (11)	

Table 4. Attitudes about health care provider's rights and responsibilities with respect to abortion among medical school students at the University of Cape Town, South Africa as indicated on self-administered questionnaire

Characteristic, n (%) Q28; Q29; Q30a	First year 186 (38.7)	Second year 177 (36.8)	Third year 118 (24.5)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
28. Health care providers who conscientiously object to TOP should:							
(a) Be allowed to *refuse* to perform abortions.							
Strongly agree	127 (69.0)	124 (70.5)	85 (72.7)	105 (70.0)	133 (80.1)	55 (64.7)	629 (71.7)
Agree	32 (17.4)	33 (18.7)	21 (17.9)	38 (25.3)	25 (15.1)	23 (27.1)	172 (19.6)
Neutral	13 (7.1)	4 (2.3)	2 (1.7)	4 (2.7)	4 (2.4)	4 (4.7)	31 (3.5)
Disagree	7 (3.8)	7 (4.0)	6 (5.1)	1 (0.7)	1 (0.6)	2 (2.3)	24 (2.7)
Strongly disagree	5 (2.7)	8 (4.5)	3 (2.6)	2 (1.3)	3 (1.8)	1 (1.2)	22 (2.5)
(b) Be *required to tell patients* seeking abortion that they conscientiously object.							
Strongly agree	72 (39.6)	66 (38.1)	44 (37.3)				182 (38.5)
Agree	41 (22.5)	37 (21.4)	20 (16.9)	-	-	-	98 (20.7)
Neutral	41 (22.5)	29 (16.8)	14 (11.9)				84 (17.8)
Disagree	17 (9.4)	22 (12.7)	24 (20.3)				63 (13.3)
Strongly disagree	11 (6.0)	19 (11.0)	16 (13.6)				46 (9.7)
(c) Be *required to refer patients* seeking abortion to a non-objecting provider.							
Strongly agree	55 (30.2)	85 (49.1)	61 (52.1)	87 (58.4)	74 (44.9)	35 (41.7)	397 (45.6)
Agree	56 (30.8)	47 (27.2)	28 (23.9)	39 (26.1)	37 (22.4)	27 (32.1)	234 (26.9)
Neutral	34 (18.7)	16 (9.2)	10 (8.6)	8 (5.4)	21 (12.7)	9 (10.7)	98 (11.3)
Disagree	17 (9.3)	11 (6.4)	8 (6.8)	7 (4.7)	14 (8.5)	8 (9.5)	65 (7.5)
Strongly disagree	20 (11.0)	14 (8.1)	10 (8.6)	8 (5.4)	19 (11.5)	5 (6.0)	76 (8.7)
(d) Be *required to tell patient about their right* to have an abortion.							
Strongly agree	53 (30.6)	1 (100.0)	68 (58.1)	-	-	-	122 (41.9)
Agree	54 (31.2)		24 (20.5)				78 (26.8)
Neutral	42 (24.3)		16 (13.7)				58 (19.9)
Disagree	7 (4.1)		3 (2.6)				10 (3.4)
Strongly disagree	17 (9.8)		6 (5.1)				23 (7.9)
28. Health care providers who conscientiously object to TOP should:							
(a) Be allowed to *refuse* to perform abortions.							
Strongly agree/agree	159 (86.4)	157 (89.2)	106 (90.6)	143 (95.3)	158 (95.2)	78 (91.8)	801 (91.2)
Neutral	13 (7.1)	4 (2.3)	2 (1.7)	4 (2.7)	4 (2.4)	4 (4.7)	31 (3.5)
Strongly disagree/disagree	12 (6.5)	15 (8.5)	9 (7.7)	3 (2.0)	4 (2.4)	3 (3.5)	46 (5.3)
(b) Be *required to tell patients* seeking abortion that they conscientiously object.							
Strongly agree/agree	113 (62.1)	103 (59.5)	64 (54.2)				280 (59.2)
Neutral	41 (22.5)	29 (16.8)	14 (11.9)	-	-	-	84 (17.8)
Strongly disagree/disagree	28 (15.4)	41 (23.7)	40 (33.9)				109 (23.0)
(c) Be *required to refer patients* seeking abortion to a non-objecting provider.							
Strongly agree/agree	111 (61.0)	132 (76.3)	89 (76.1)	126 (84.5)	111 (67.3)	62 (73.8)	631 (72.5)
Neutral	34 (18.7)	16 (9.2)	10 (8.5)	8 (5.4)	21 (12.7)	9 (10.7)	98 (11.3)
Strongly disagree/disagree	37 (20.3)	25 (14.5)	18 (15.4)	15 (10.1)	33 (20.0)	13 (15.5)	141 (16.2)
(d) Be *required to tell patients about their right* to have an abortion.							
Strongly agree/agree	107 (61.8)	1 (100.0)	92 (78.6)	-	-	-	200 (68.7)
Neutral	42 (24.3)		16 (13.7)				58 (19.9)
Strongly disagree/disagree	24 (13.9)		9 (7.7)				33 (11.4)

Characteristic, n (%) Q28; Q29; Q30a	**First year 186 (38.7)**	**Second year 177 (36.8)**	**Third year 118 (24.5)**	**Fourth year 150 (17.0)**	**Fifth year 166 (18.8)**	**Sixth year 85 (9.6)**	**Total 882 (100.0)**
29. I believe that in addition to doctors, nurses should be trained to provide abortions.							
Strongly agree	15 (8.3)	31 (18.1)	27 (22.9)	29 (19.3)	34 (20.6)	19 (22.6)	73 (15.5)
Agree	39 (21.4)	47 (27.5)	44 (37.3)	47 (31.3)	45 (27.3)	31 (36.9)	130 (27.6)
Neutral	60 (33.0)	40 (23.4)	24 (20.3)	33 (22.0)	30 (18.2)	13 (15.5)	124 (26.3)
Disagree	31 (17.0)	21 (12.3)	14 (11.9)	25 (16.7)	33 (20.0)	11 (13.1)	66 (14.0)
Strongly disagree	37 (20.3)	32 (18.7)	9 (7.6)	16 (10.7)	23 (13.9)	10 (11.9)	78 (16.6)
29. I believe that in addition to doctors, nurses should be trained to provide abortions.							
Strongly agree/agree	54 (29.7)	78 (45.6)	71 (60.2)	76 (50.7)	79 (47.9)	50 (59.5)	408 (46.9)
Neutral	60 (33.0)	40 (23.4)	24 (20.3)	33 (22.0)	30 (18.2)	13 (15.5)	200 (23.0)
Strongly disagree/disagree	68 (37.3)	53 (31.0)	23 (19.5)	41 (27.3)	56 (33.9)	21 (25.0)	262 (30.1)

Table 4a. Characteristics associated with attitudes about a provider's rights and responsibilities: Health care providers who conscientiously object to TOP should be required to refer patients seeking abortion to a non-objecting provider

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	80.00 (320)	20.00 (80)	0.56 (FE)
17-19 years	78.83 (108)	21.17 (29)	
20-21 years	78.97 (154)	21.03 (41)	
22-23 years	86.27 (44)	13.73 (7)	
24-25 years	72.73 (8)	27.27 (3)	
26-31 years	100.0 (6)	0 (0)	
Year in Medical School	81.74 (631)	18.26 (141)	0.02
First year	75.00 (111)	25.00 (37)	
Second year	84.08 (132)	15.92 (25)	
Third year	83.18 (89)	16.82 (18)	
Fourth year	89.36 (126)	10.64 (15)	
Fifth year	77.08 (111)	22.92 (33)	
Sixth year	82.67 (62)	17.33 (13)	
Sex	81.74 (631)	18.26 (141)	0.48
Male	80.43 (222)	19.57 (54)	
Female	82.46 (409)	17.54 (87)	
Religious Affiliation	81.66 (628)	18.34 (141)	<0.0001
Catholic	81.71 (67)	18.29 (15)	
Christian, non-Catholic	76.76 (317)	23.24 (96)	
Muslim	80.18 (89)	19.82 (22)	
Hindu	94.92 (56)	5.08 (3)	
Jewish	90.91 (20)	9.09 (2)	
Other religion	92.59 (25)	7.41 (2)	
Agnostic/Atheist	98.18 (54)	1.82 (1)	
Frequency of Religious Service Attendance	81.53 (618)	18.47 (140)	<0.0001
Regular	68.55 (218)	31.45 (100)	
Semi-regular	89.70 (148)	10.30 (17)	
Not often	91.01 (172)	8.99 (17)	
Never	93.02 (80)	6.98 (6)	
Relationship Status	81.54 (614)	18.46 (139)	0.001
Single, Never with someone	75.00 (111)	25.00 (37)	
Single, Not with anyone currently	78.02 (213)	21.98 (60)	
Single, In a relationship	88.49 (269)	11.51 (35)	
Other (including married)	75.00 (21)	25.00 (7)	
Type of Residential Area Raised In	80.58 (332)	19.42 (80)	0.11 (FE)
Urban/City	85.88 (152)	14.12 (25)	
Township	72.34 (34)	27.66 (13)	
Rural/Farm	75.00 (27)	25.00 (9)	
Suburban	77.85 (116)	22.15 (33)	
Other	100.0 (3)	0 (0)	
Nationality	80.58 (332)	19.42 (80)	0.70
South African	80.28 (285)	19.72 (70)	
Non-South African	82.46 (47)	17.54 (10)	
Province in South Africa	79.77 (272)	20.23 (69)	0.79
Eastern Cape	73.47 (36)	26.53 (13)	
Free State	66.67 (4)	33.33 (2)	
Gauteng	83.33 (35)	16.67 (7)	
Kwa-Zulu Natal	82.67 (62)	17.33 (13)	
Limpopo	87.50 (14)	12.50 (2)	
Mpumalanga	71.43 (5)	28.57 (2)	
Northwest	87.50 (7)	12.50 (1)	
Northern	100.0 (3)	0 (0)	
Western Cape	78.52 (106)	21.48 (29)	
Population Group	81.83 (626)	18.17 (139)	0.04 (FE)
White	79.35 (196)	20.65 (51)	
African	80.57 (199)	19.43 (48)	
Coloured	84.82 (95)	15.18 (17)	
Indian	88.81 (119)	11.19 (15)	
Other	68.00 (17)	32.00 (8)	
Ever Had Sexual Intercourse	81.66 (610)	18.34 (137)	<0.0001
Yes	90.82 (277)	9.18 (28)	
No	75.34 (333)	24.66 (109)	
Considering specializing in OBGYN	81.88 (628)	18.12 (139)	0.59
Strongly agree/agree	79.58 (152)	20.42 (39)	
Neutral	83.62 (148)	16.38 (29)	
Strongly disagree/disagree	82.21 (328)	17.79 (71)	

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Considering specializing in FamMed	81.94 (626)	18.06 (138)	0.04
Strongly agree/agree	77.91 (134)	22.09 (38)	
Neutral	79.35 (196)	20.65 (51)	
Strongly disagree/disagree	85.80 (296)	14.20 (49)	

Table 5. Attitudes towards abortion training among medical school students at the University of Cape Town, South Africa as indicated on self-administered questionnaire

Characteristic, n (%) Q 41-50	First year 186 (38.7)	Second year 177 (36.8)	Third year 118 (24.5)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
41. Because it is a routine medical procedure, abortion *should* be incorporated into the medical curriculum.							
Strongly agree	22 (12.1)	29 (16.5)	20 (17.0)	19 (12.7)	31 (18.8)	21 (25.3)	142 (16.3)
Agree	61 (33.7)	45 (25.6)	35 (29.7)	52 (34.9)	39 (23.6)	26 (31.3)	258 (29.6)
Neutral	47 (26.0)	38 (12.6)	22 (18.6)	28 (18.8)	36 (21.8)	19 (22.9)	190 (21.8)
Disagree	26 (14.4)	26 (14.7)	22 (18.6)	18 (12.1)	27 (16.4)	6 (7.2)	125 (14.3)
Strongly disagree	25 (13.8)	38 (21.6)	19 (16.1)	32 (21.5)	32 (19.4)	11 (13.3)	157 (18.0)
41. Because it is a routine medical procedure, abortion *should* be incorporated into the medical curriculum.							
Strongly agree/agree	83 (45.8)	74 (42.0)	55 (46.6)	71 (47.6)	70 (42.4)	47 (56.6)	400 (45.9)
Neutral	47 (26.0)	38 (21.6)	22 (18.6)	28 (18.8)	36 (21.8)	19 (22.9)	190 (21.8)
Strongly disagree/disagree	51 (28.2)	64 (36.4)	41 (34.8)	50 (33.6)	59 (35.8)	17 (20.5)	282 (32.3)
42. I would be willing to attend a *workshop* on abortion and related issues.							
Strongly agree	48 (26.4)	41 (23.4)	26 (22.2)	22 (14.9)	39 (23.6)	24 (28.6)	200 (23.0)
Agree	93 (51.1)	71 (40.6)	55 (47.0)	73 (49.3)	61 (37.0)	30 (35.7)	383 (44.0)
Neutral	22 (12.1)	30 (17.1)	18 (15.4)	27 (18.2)	30 (18.2)	17 (20.3)	144 (16.5)
Disagree	6 (3.3)	11 (6.3)	12 (10.3)	13 (8.8)	21 (12.7)	7 (8.3)	70 (8.0)
Strongly disagree	13 (7.1)	22 (12.6)	6 (5.1)	13 (8.8)	14 (8.5)	6 (7.1)	74 (8.5)
42. I would be willing to attend a *workshop* on abortion and related issues.							
Strongly agree/agree	141 (77.5)	112 (64.0)	81 (69.2)	95 (64.2)	100 (60.6)	54 (64.3)	583 (67.0)
Neutral	22 (12.1)	30 (17.1)	18 (15.4)	27 (18.2)	30 (18.2)	17 (20.2)	144 (16.5)
Strongly disagree/disagree	19 (10.4)	33 (18.9)	18 (15.4)	26 (17.6)	35 (21.2)	13 (15.5)	144 (16.5)
43. I would be willing to take a *class that involved training* in performing voluntary abortions and related topics.							
Strongly agree	26 (14.4)	27 (15.3)	17 (14.5)	20 (13.3)	26 (15.9)	16 (18.8)	132 (15.1)
Agree	49 (27.1)	38 (21.6)	19 (16.2)	50 (33.4)	39 (23.8)	18 (21.2)	213 (24.4)
Neutral	33 (18.2)	34 (19.3)	27 (23.1)	27 (18.0)	23 (14.0)	22 (25.9)	166 (19.0)
Disagree	38 (21.0)	29 (16.5)	24 (20.5)	21 (14.0)	33 (20.1)	15 (17.6)	160 (18.3)
Strongly disagree	35 (19.3)	48 (27.3)	30 (25.7)	32 (21.3)	43 (26.2)	14 (16.5)	202 (23.2)
43. I would be willing to take a *class that involved training* in performing voluntary abortions and related topics.							
Strongly agree/agree	75 (41.5)	65 (36.9)	36 (30.8)	70 (46.7)	65 (39.6)	34 (40.0)	345 (39.5)
Neutral	33 (18.2)	34 (19.3)	27 (23.1)	27 (18.0)	23 (14.0)	22 (25.9)	166 (19.0)
Strongly disagree/disagree	73 (40.3)	77 (43.8)	54 (46.1)	53 (35.3)	76 (46.4)	29 (34.1)	362 (41.5)
44. I would be willing to attend a university whose curriculum *required* abortion training.							
Strongly agree	23 (12.7)	28 (15.9)	16 (13.6)	-	-	-	67 (14.1)
Agree	49 (27.1)	43 (24.4)	24 (20.3)				116 (24.4)
Neutral	42 (23.2)	37 (21.0)	37 (31.4)				116 (24.4)
Disagree	34 (18.8)	22 (12.5)	17 (14.4)				73 (15.4)
Strongly disagree	33 (18.2)	46 (26.2)	24 (20.3)				103 (21.7)
44. I would be willing to attend a university whose curriculum *required* abortion training.							
Strongly agree/agree	72 (39.8)	71 (40.4)	40 (33.9)	-	-	-	183 (38.5)
Neutral	42 (23.2)	37 (21.0)	37 (31.4)				116 (24.4)
Strongly disagree/disagree	67 (37.0)	68 (38.6)	41 (34.7)				176 (37.1)
45. I feel that issues related to abortion require *more* attention in the MBChB curriculum.							
Strongly agree	31 (17.0)	31 (17.5)	16 (13.6)	11 (7.3)	40 (24.4)	23 (27.0)	152 (17.3)
Agree	63 (34.6)	76 (42.9)	39 (33.0)	53 (35.3)	52 (31.7)	35 (41.2)	318 (36.3)
Neutral	56 (30.8)	38 (21.5)	34 (28.8)	52 (34.7)	34 (20.7)	16 (18.8)	230 (26.3)
Disagree	21 (11.6)	18 (10.2)	23 (10.5)	22 (14.7)	28 (17.1)	5 (5.9)	117 (13.4)
Strongly disagree	11 (6.0)	14 (7.9)	6 (5.1)	12 (8.0)	10 (6.1)	6 (7.1)	59 (6.7)

Characteristic, n (%) **Q 41-50**	**First year** **186 (38.7)**	**Second year** **177 (36.8)**	**Third year** **118 (24.5)**	**Fourth year** **150 (17.0)**	**Fifth year** **166 (18.8)**	**Sixth year** **85 (9.6)**	**Total** **882 (100.0)**
45. I feel that issues related to abortion require *more* attention in the MBChB curriculum.							
Strongly agree/agree	94 (51.6)	107 (50.4)	55 (46.6)	64 (42.6)	92 (56.1)	58 (68.3)	470 (53.6)
Neutral	56 (30.8)	38 (21.5)	34 (28.8)	52 (34.7)	34 (20.7)	16 (18.8)	230 (26.3)
Strongly disagree/disagree	32 (17.6)	32 (18.1)	29 (24.6)	34 (22.7)	38 (23.2)	11 (12.9)	176 (20.1)
46. I feel that issues related to abortion require *less* attention in the MBChB curriculum.							
Strongly agree	7 (3.9)	6 (3.4)	1 (0.8)	-	-	-	14 (3.0)
Agree	17 (9.6)	12 (6.8)	8 (6.9)				37 (7.9)
Neutral	57 (32.0)	54 (30.5)	43 (37.1)				154 (32.7)
Disagree	75 (42.1)	72 (40.7)	51 (44.0)				198 (42.0)
Strongly disagree	22 (12.4)	33 (18.6)	13 (11.2)				68 (14.4)
46. I feel that issues related to abortion require *less* attention in the MBChB curriculum.							
Strongly agree/agree	24 (13.5)	18 (10.2)	9 (7.7)	-	-	-	51 (10.8)
Neutral	57 (32.0)	54 (30.5)	43 (37.1)				154 (32.7)
Strongly disagree/disagree	97 (54.5)	105 (59.3)	64 (55.2)				266 (56.5)
47. I think that most of my teachers/professors feel that abortion should be legal.							
Strongly agree	4 (2.2)	8 (4.6)	17 (14.5)	12 (8.0)	23 (13.9)	9 (10.7)	73 (8.4)
Agree	21 (11.7)	29 (16.5)	40 (34.2)	56 (37.3)	73 (44.2)	28 (33.3)	247 (28.4)
Neutral	127 (71.0)	102 (58.3)	55 (47.0)	71 (47.4)	57 (34.6)	41 (48.8)	453 (52.0)
Disagree	21 (11.7)	28 (16.0)	4 (3.4)	9 (6.0)	11 (6.7)	6 (7.2)	79 (9.1)
Strongly disagree	6 (3.4)	8 (4.6)	1 (0.9)	2 (1.3)	1 (0.6)	0 (0.0)	18 (2.1)
47. I think that most of my teachers/professors feel that abortion should be legal.							
Strongly agree/agree	25 (13.9)	37 (21.1)	57 (48.7)	68 (45.3)	96 (58.2)	37 (44.1)	320 (36.8)
Neutral	127 (71.0)	102 (58.3)	55 (47.0)	71 (47.4)	57 (34.5)	41 (48.8)	453 (52.0)
Strongly disagree/disagree	27 (15.1)	36 (20.6)	5 (4.3)	11 (7.3)	12 (7.3)	6 (7.1)	97 (11.2)
48. I think that most of my teachers/professors feel that abortion should be illegal.							
Strongly agree	9 (5.0)	11 (6.2)	2 (1.7)	-	-	-	22 (4.7)
Agree	23 (12.8)	28 (15.9)	3 (2.6)				54 (11.4)
Neutral	130 (72.2)	104 (59.1)	63 (54.3)				297 (62.9)
Disagree	14 (7.8)	26 (14.8)	35 (30.2)				75 (15.9)
Strongly disagree	4 (2.2)	7 (4.0)	13 (11.2)				24 (5.1)
48. I think that most of my teachers/professors feel that abortion should be illegal.							
Strongly agree/agree	32 (17.8)	39 (22.2)	5 (4.3)	-	-	-	76 (16.1)
Neutral	130 (72.2)	104 (59.1)	63 (54.3)				297 (62.9)
Strongly disagree/disagree	18 (10.0)	33 (18.7)	48 (41.4)				99 (21.0)
49. I would like to receive more information about abortion and abortion-related health services.							
Strongly agree	40 (22.2)	29 (16.4)	13 (11.1)	12 (8.0)	26 (15.8)	11 (13.1)	131 (15.0)
Agree	78 (43.4)	85 (48.0)	53 (45.3)	67 (44.6)	60 (36.4)	44 (52.4)	387 (44.3)
Neutral	37 (20.6)	35 (19.8)	30 (25.6)	46 (30.7)	46 (27.9)	18 (21.4)	212 (24.3)
Disagree	17 (9.4)	18 (10.2)	14 (12.0)	15 (10.0)	25 (15.1)	7 (8.3)	96 (11.0)
Strongly disagree	8 (4.4)	10 (5.6)	7 (6.0)	10 (6.7)	8 (4.8)	4 (4.8)	47 (5.4)
49. I would like to receive more information about abortion and abortion-related health services.							
Strongly agree/agree	118 (65.5)	114 (64.4)	66 (56.4)	79 (52.6)	86 (52.1)	55 (65.5)	518 (59.3)
Neutral	37 (20.6)	35 (19.8)	30 (25.6)	46 (30.7)	46 (27.9)	18 (21.4)	212 (24.3)
Strongly disagree/disagree	25 (13.9)	28 (15.8)	21 (18.0)	25 (16.7)	33 (20.0)	11 (13.1)	143 (16.4)
50. I intend to seek out opportunities to learn about abortion and abortion-related health services.							
Strongly agree	24 (13.2)	14 (8.0)	7 (6.0)	-	-	-	45 (9.5)
Agree	59 (32.4)	48 (27.4)	48 (41.4)				155 (32.8)
Neutral	61 (33.5)	60 (34.3)	30 (25.9)				151 (31.9)
Disagree	27 (14.8)	39 (22.3)	23 (19.8)				89 (18.8)
Strongly disagree	11 (6.1)	14 (8.0)	8 (6.9)				33 (7.0)

Characteristic, n (%) **Q 41-50**	**First year** **186 (38.7)**	**Second year** **177 (36.8)**	**Third year** **118 (24.5)**	**Fourth year** **150 (17.0)**	**Fifth year** **166 (18.8)**	**Sixth year** **85 (9.6)**	**Total** **882 (100.0)**
50. I intend to seek out opportunities to learn about abortion and abortion-related health services.							
Strongly agree/agree	83 (45.6)	62 (35.4)	55 (47.4)	-	-	-	200 (42.3)
Neutral	61 (33.5)	60 (34.3)	30 (25.9)				151 (31.9)
Strongly disagree/disagree	38 (20.9)	53 (30.3)	31 (26.7)				122 (25.8)

Table 5a. Characteristics associated with attitudes about abortion training: Because it is a routine medical procedure, TOP training should be incorporated into the medical curriculum

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	57.51 (203)	42.49 (150)	0.61 (FE)
17-19 years	60.00 (69)	40.00 (46)	
20-21 years	54.40 (99)	45.60 (83)	
22-23 years	63.41 (26)	36.59 (15)	
24-25 years	50.00 (5)	50.00 (5)	
26-31 years	80.00 (4)	20.00 (1)	
Year in Medical School	58.65 (400)	41.35 (282)	0.11
First year	61.94 (83)	38.06 (51)	
Second year	53.62 (74)	46.38 (64)	
Third year	57.29 (55)	42.71 (41)	
Fourth year	58.68 (71)	41.32 (50)	
Fifth year	54.26 (70)	45.74 (59)	
Sixth year	73.44 (47)	26.56 (17)	
Sex	58.65 (400)	41.35 (282)	0.27
Male	61.33 (157)	38.67 (99)	
Female	57.04 (243)	42.96 (183)	
Religious Affiliation	58.68 (399)	41.32 (281)	<0.0001
Catholic	48.72 (38)	51.28 (40)	
Christian, non-Catholic	53.68 (204)	46.32 (176)	
Muslim	47.13 (41)	52.87 (46)	
Hindu	81.82 (36)	18.18 (8)	
Jewish	94.74 (18)	5.26 (1)	
Other religion	68.18 (15)	31.82 (7)	
Agnostic/Atheist	94.00 (47)	6.00 (3)	
Frequency of Religious Service Attendance	57.96 (386)	42.04 (280)	<0.0001
Regular	35.88 (108)	64.12 (193)	
Semi-regular	67.67 (90)	32.33 (43)	
Not often	78.81 (119)	21.19 (32)	
Never	85.19 (69)	14.81 (12)	
Relationship Status	58.09 (384)	41.91 (277)	<0.0001
Single, Never with someone	51.54 (67)	48.46 (63)	
Single, Not with anyone currently	52.05 (127)	47.95 (117)	
Single, In a relationship	68.70 (180)	31.30 (82)	
Other (including married)	40.00 (10)	60.00 (15)	
Type of Residential Area Raised In	57.61 (212)	42.39 (156)	0.32 (FE)
Urban/City	63.13 (101)	36.88 (59)	
Township	58.33 (21)	41.67 (15)	
Rural/Farm	48.65 (18)	51.35 (19)	
Suburban	53.38 (71)	46.62 (62)	
Other	50.0 (1)	50.00 (1)	
Nationality	57.61 (212)	42.39 (156)	0.12
South African	56.07 (180)	43.93 (141)	
Non-South African	68.09 (32)	31.91 (15)	
Province in South Africa	55.16 (171)	44.84 (139)	0.25
Eastern Cape	53.19 (25)	46.81 (22)	
Free State	60.00 (3)	40.00 (2)	
Gauteng	56.10 (23)	43.90 (18)	
Kwa-Zulu Natal	61.54 (40)	38.46 (25)	
Limpopo	42.86 (6)	57.14 (8)	
Mpumalanga	25.00 (2)	75.00 (6)	
Northwest	14.29 (1)	85.71 (6)	
Northern	66.67 (2)	33.33 (1)	
Western Cape	57.50 (69)	42.50 (51)	
Population Group	58.52 (395)	41.48 (280)	0.74 (FE)
White	57.51 (134)	42.49 (99)	
African	60.09 (131)	39.91 (87)	
Coloured	54.95 (50)	45.05 (41)	
Indian	57.94 (62)	42.06 (45)	
Other	69.23 (18)	30.77 (8)	
Ever Had Sexual Intercourse	58.48 (386)	41.52 (274)	<0.0001
Yes	71.43 (190)	28.57 (76)	
No	49.75 (196)	50.25 (198)	
Considering specializing in OBGYN	58.47 (397)	41.53 (282)	0.001
Strongly agree/agree	60.61 (100)	39.39 (65)	
Neutral	69.68 (108)	30.32 (47)	
Strongly disagree/disagree	52.65 (189)	47.35 (170)	

Table 5b. Characteristics associated with attitudes about abortion training: I would be willing to attend a workshop on abortion and related issues

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	82.26 (320)	17.74 (69)	0.10 (FE)
17-19 years	84.72 (122)	15.28 (22)	
20-21 years	77.84 (137)	22.16 (39)	
22-23 years	92.16 (47)	7.84 (4)	
24-25 years	75.00 (9)	25.00 (3)	
26-31 years	83.33 (5)	16.67 (1)	
Year in Medical School	80.19 (583)	19.81 (144)	0.06
First year	88.13 (141)	11.88 (19)	
Second year	77.24 (112)	22.76 (33)	
Third year	81.82 (81)	18.18 (18)	
Fourth year	78.51 (95)	21.49 (26)	
Fifth year	74.07 (100)	25.93 (35)	
Sixth year	80.60 (54)	19.40 (13)	
Sex	80.19 (583)	19.81 (144)	0.89
Male	79.93 (223)	20.07 (56)	
Female	80.36 (360)	19.64 (88)	
Religious Affiliation	80.39 (582)	19.61 (142)	0.002
Catholic	76.83 (63)	23.17 (19)	
Christian, non-Catholic	79.39 (312)	20.61 (81)	
Muslim	69.70 (69)	30.30 (30)	
Hindu	94.23 (49)	5.77 (3)	
Jewish	90.91 (20)	9.09 (2)	
Other religion	87.50 (21)	12.50 (3)	
Agnostic/Atheist	92.31 (48)	7.69 (4)	
Frequency of Religious Service Attendance	80.08 (571)	19.92 (142)	<0.0001
Regular	69.58 (215)	30.42 (94)	
Semi-regular	84.31 (129)	15.69 (24)	
Not often	91.12 (154)	8.88 (15)	
Never	89.02 (73)	10.98 (9)	
Relationship Status	80.25 (569)	19.75 (140)	0.001 (FE)
Single, Never with someone	78.91 (116)	21.09 (31)	
Single, Not with anyone currently	80.00 (204)	20.00 (51)	
Single, In a relationship	84.10 (238)	15.90 (45)	
Other (including married)	45.83 (11)	54.17 (13)	
Type of Residential Area Raised In	82.67 (334)	17.33 (70)	0.59 (FE)
Urban/City	84.39 (146)	15.61 (27)	
Township	84.09 (37)	15.91 (7)	
Rural/Farm	74.36 (29)	25.64 (10)	
Suburban	81.94 (118)	18.06 (26)	
Other	100.0 (4)	0 (0)	
Nationality	82.67 (334)	17.33 (70)	0.02
South African	80.92 (280)	19.08 (66)	
Non-South African	93.10 (54)	6.90 (4)	
Province in South Africa	80.42 (267)	19.58 (65)	0.31
Eastern Cape	84.91 (45)	15.09 (8)	
Free State	80.00 (4)	20.00 (1)	
Gauteng	81.82 (36)	18.18 (8)	
Kwa-Zulu Natal	79.17 (57)	20.83 (15)	
Limpopo	93.75 (15)	6.25 (1)	
Mpumalanga	50.00 (3)	50.00 (3)	
Northwest	57.14 (4)	42.86 (3)	
Northern	100.0 (3)	0 (0)	
Western Cape	79.37 (100)	20.63 (26)	
Population Group	80.42 (579)	19.58 (141)	0.15 (FE)
White	77.92 (180)	22.08 (51)	
African	84.08 (206)	15.92 (39)	
Coloured	73.53 (75)	26.47 (27)	
Indian	82.35 (98)	17.65 (21)	
Other	86.96 (20)	13.04 (3)	
Ever Had Sexual Intercourse	80.11 (564)	19.89 (140)	0.01
Yes	84.78 (245)	15.22 (44)	
No	76.87 (319)	23.13 (96)	
Considering specializing in OBGYN	80.08 (579)	19.92 (144)	0.001
Strongly agree/agree	82.18 (143)	17.82 (31)	
Neutral	89.02 (146)	10.98 (18)	
Strongly disagree/disagree	75.32 (290)	24.68 (95)	

Table 5c. Characteristics associated with attitudes about abortion training: I would be willing to take a class that involved training in performing voluntary abortions and related topics

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	46.03 (168)	53.97 (197)	0.19 (FE)
17-19 years	44.96 (58)	55.04 (71)	
20-21 years	42.61 (75)	57.39 (101)	
22-23 years	55.81 (24)	44.19 (19)	
24-25 years	54.55 (6)	45.45 (5)	
26-31 years	83.33 (5)	16.67 (1)	
Year in Medical School	48.80 (345)	51.20 (362)	0.16
First year	50.68 (75)	49.32 (73)	
Second year	45.77 (65)	54.23 (77)	
Third year	40.00 (36)	60.00 (54)	
Fourth year	56.91 (70)	43.09 (53)	
Fifth year	46.10 (65)	53.90 (76)	
Sixth year	53.97 (34)	46.03 (29)	
Sex	48.80 (345)	51.20 (362)	0.002
Male	56.13 (151)	43.87 (118)	
Female	44.29 (194)	55.71 (244)	
Religious Affiliation	48.86 (344)	51.14 (360)	<0.0001
Catholic	36.84 (28)	63.16 (48)	
Christian, non-Catholic	42.24 (166)	57.76 (227)	
Muslim	25.29 (22)	74.71 (65)	
Hindu	77.55 (38)	22.45 (11)	
Jewish	95.65 (22)	4.35 (1)	
Other religion	87.50 (21)	12.50 (3)	
Agnostic/Atheist	90.38 (47)	9.62 (5)	
Frequency of Religious Service Attendance	47.98 (332)	52.02 (360)	<0.0001
Regular	21.77 (69)	78.23 (248)	
Semi-regular	56.20 (77)	43.80 (60)	
Not often	73.55 (114)	26.45 (41)	
Never	86.75 (72)	13.25 (11)	
Relationship Status	48.26 (332)	51.74 (356)	0.002
Single, Never with someone	41.13 (58)	58.87 (83)	
Single, Not with anyone currently	45.77 (119)	54.23 (141)	
Single, In a relationship	56.49 (148)	43.51 (114)	
Other (including married)	28.00 (7)	72.00 (18)	
Type of Residential Area Raised In	46.32 (176)	53.68 (204)	0.30 (FE)
Urban/City	52.38 (88)	47.62 (80)	
Township	40.54 (15)	59.46 (22)	
Rural/Farm	41.03 (16)	58.97 (23)	
Suburban	42.42 (56)	57.58 (76)	
Other	25.00 (1)	75.00 (3)	
Nationality	46.32 (176)	53.68 (204)	0.01
South African	43.84 (146)	56.16 (187)	
Non-South African	63.83 (30)	36.17 (17)	
Province in South Africa	43.75 (140)	56.25 (180)	0.02
Eastern Cape	44.00 (22)	56.00 (28)	
Free State	40.00 (2)	60.00 (3)	
Gauteng	45.24 (19)	54.76 (23)	
Kwa-Zulu Natal	51.47 (35)	48.53 (33)	
Limpopo	18.75 (3)	81.25 (13)	
Mpumalanga	14.29 (1)	85.71 (6)	
Northwest	0 (0)	100.0 (7)	
Northern	100.0 (3)	0 (0)	
Western Cape	45.08 (55)	54.92 (67)	
Population Group	49.00 (343)	51.00 (357)	0.42
White	50.42 (121)	49.58 (119)	
African	49.77 (110)	50.23 (111)	
Coloured	40.00 (40)	60.00 (60)	
Indian	51.72 (60)	48.28 (56)	
Other	52.17 (12)	47.83 (11)	
Ever Had Sexual Intercourse	48.76 (334)	51.24 (351)	<0.0001
Yes	65.22 (180)	34.78 (96)	
No	37.65 (154)	62.35 (255)	
Considering specializing in OBGYN	48.65 (343)	51.35 (362)	0.01
Strongly agree/agree	49.12 (84)	50.88 (87)	
Neutral	58.94 (89)	41.06 (62)	
Strongly disagree/disagree	44.39 (170)	55.61 (213)	

Table 5d. Characteristics associated with attitudes about abortion training: I feel that issues related to abortion require more attention in the MBChB curriculum

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	73.59 (248)	26.41 (89)	0.99 (FE)
17-19 years	73.17 (90)	26.83 (33)	
20-21 years	73.38 (113)	26.62 (41)	
22-23 years	73.91 (34)	26.09 (12)	
24-25 years	80.00 (8)	20.00 (2)	
26-31 years	75.00 (3)	25.00 (1)	
Year in Medical School	72.76 (470)	27.24 (176)	0.05
First year	74.60 (94)	25.40 (32)	
Second year	76.98 (107)	23.03 (32)	
Third year	65.48 (55)	34.52 (29)	
Fourth year	65.31 (64)	34.69 (34)	
Fifth year	70.77 (92)	29.23 (38)	
Sixth year	84.06 (58)	15.94 (11)	
Sex	72.76 (470)	27.24 (176)	0.42
Male	74.51 (190)	25.49 (65)	
Female	71.61 (280)	28.39 (111)	
Religious Affiliation	72.78 (468)	27.22 (175)	0.13
Catholic	71.05 (54)	28.95 (22)	
Christian, non-Catholic	72.11 (256)	27.89 (99)	
Muslim	64.29 (54)	35.71 (30)	
Hindu	80.00 (40)	20.00 (10)	
Jewish	93.33 (14)	6.67 (1)	
Other religion	72.22 (13)	27.78 (5)	
Agnostic/Atheist	82.22 (37)	17.78 (8)	
Frequency of Religious Service Attendance	72.42 (457)	27.58 (174)	<0.0001
Regular	61.82 (170)	38.18 (105)	
Semi-regular	83.09 (113)	16.91 (23)	
Not often	79.59 (117)	20.41 (30)	
Never	78.08 (57)	21.92 (16)	
Relationship Status	72.52 (454)	27.48 (172)	0.005
Single, Never with someone	70.73 (87)	29.27 (36)	
Single, Not with anyone currently	71.37 (162)	28.63 (65)	
Single, In a relationship	77.08 (195)	22.92 (58)	
Other (including married)	43.48 (10)	56.52 (13)	
Type of Residential Area Raised In	73.35 (256)	26.65 (93)	0.97 (FE)
Urban/City	73.94 (105)	26.06 (37)	
Township	69.05 (29)	30.95 (13)	
Rural/Farm	74.36 (29)	25.64 (10)	
Suburban	73.77 (90)	26.23 (32)	
Other	75.00 (3)	25.00 (1)	
Nationality	73.35 (256)	26.65 (93)	0.64
South African	72.88 (215)	27.12 (80)	
Non-South African	75.93 (41)	24.07 (13)	
Province in South Africa	72.63 (207)	27.37 (78)	0.07
Eastern Cape	81.82 (36)	18.18 (8)	
Free State	66.67 (4)	33.33 (2)	
Gauteng	74.07 (20)	25.93 (7)	
Kwa-Zulu Natal	75.36 (52)	24.64 (17)	
Limpopo	68.75 (11)	31.25 (5)	
Mpumalanga	16.67 (1)	83.33 (5)	
Northwest	50.00 (5)	50.00 (5)	
Northern	66.67 (2)	33.33 (1)	
Western Cape	73.08 (76)	26.92 (28)	
Population Group	72.78 (468)	27.22 (175)	0.13
White	68.59 (131)	31.41 (60)	
African	78.60 (180)	21.40 (49)	
Coloured	70.41 (69)	29.59 (29)	
Indian	72.12 (75)	27.88 (29)	
Other	61.90 (13)	38.10 (8)	
Ever Had Sexual Intercourse	73.21 (459)	26.79 (168)	0.18
Yes	76.06 (197)	23.94 (62)	
No	71.20 (262)	28.80 (106)	
Considering specializing in OBGYN	72.76 (470)	27.24 (176)	0.23
Strongly agree/agree	75.93 (123)	24.07 (39)	
Neutral	75.86 (110)	24.14 (35)	
Strongly disagree/disagree	69.91 (237)	30.09 (102)	

Table 5e. Characteristics associated with attitudes about abortion training: I would like to receive more information about abortion and abortion-related health services

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	79.78 (288)	20.22 (73)	0.17 (FE)
17-19 years	81.20 (108)	18.80 (25)	
20-21 years	76.97 (127)	23.03 (38)	
22-23 years	89.58 (43)	10.42 (5)	
24-25 years	66.67 (6)	33.33 (3)	
26-31 years	66.67 (4)	33.33 (2)	
Year in Medical School	78.37 (518)	21.63 (143)	0.31
First year	82.52 (118)	17.48 (25)	
Second year	80.28 (114)	19.72 (28)	
Third year	75.86 (66)	24.14 (21)	
Fourth year	75.96 (79)	24.04 (25)	
Fifth year	72.27 (86)	27.73 (33)	
Sixth year	83.33 (55)	16.67 (11)	
Sex	78.37 (518)	21.63 (143)	0.57
Male	79.58 (191)	20.42 (49)	
Female	77.67 (327)	22.33 (94)	
Religious Affiliation	78.45 (517)	21.55 (142)	<0.0001
Catholic	67.14 (47)	32.86 (23)	
Christian, non-Catholic	77.84 (295)	22.16 (84)	
Muslim	69.23 (54)	30.77 (24)	
Hindu	95.83 (46)	4.17 (2)	
Jewish	94.74 (18)	5.26 (1)	
Other religion	78.26 (18)	21.74 (5)	
Agnostic/Atheist	92.86 (39)	7.14 (3)	
Frequency of Religious Service Attendance	78.21 (506)	21.79 (141)	<0.0001
Regular	67.96 (193)	32.04 (91)	
Semi-regular	85.38 (111)	14.62 (19)	
Not often	88.20 (142)	11.80 (19)	
Never	83.33 (60)	16.67 (12)	
Relationship Status	78.35 (503)	21.65 (139)	0.001 (FE)
Single, Never with someone	76.12 (102)	23.88 (32)	
Single, Not with anyone currently	76.05 (181)	23.95 (57)	
Single, In a relationship	84.27 (209)	15.73 (39)	
Other (including married)	50.00 (11)	50.00 (11)	
Type of Residential Area Raised In	80.11 (298)	19.89 (74)	0.60 (FE)
Urban/City	82.69 (129)	17.31 (27)	
Township	79.55 (35)	20.45 (9)	
Rural/Farm	72.50 (29)	27.50 (11)	
Suburban	79.07 (102)	20.93 (27)	
Other	100.0 (3)	0 (0)	
Nationality	80.11 (298)	19.89 (74)	0.23
South African	79.05 (249)	20.95 (66)	
Non-South African	85.96 (49)	14.04 (8)	
Province in South Africa	79.61 (242)	20.39 (62)	0.23
Eastern Cape	80.00 (40)	20.00 (10)	
Free State	100.0 (2)	0 (0)	
Gauteng	81.58 (31)	18.42 (7)	
Kwa-Zulu Natal	84.29 (59)	15.71 (11)	
Limpopo	92.31 (12)	7.69 (1)	
Mpumalanga	42.86 (3)	57.14 (4)	
Northwest	77.78 (7)	22.22 (2)	
Northern	100.0 (3)	0 (0)	
Western Cape	75.89 (85)	24.11 (27)	
Population Group	78.66 (516)	21.34 (140)	0.12
White	76.56 (160)	23.44 (49)	
African	80.93 (191)	19.07 (45)	
Coloured	70.97 (66)	29.03 (27)	
Indian	85.57 (83)	14.43 (14)	
Other	76.19 (16)	23.81 (5)	
Ever Had Sexual Intercourse	78.72 (503)	21.28 (136)	0.008
Yes	83.98 (215)	16.02 (41)	
No	75.20 (288)	24.80 (95)	
Considering specializing in OBGYN	78.30 (516)	21.70 (143)	0.002
Strongly agree/agree	81.53 (128)	18.47 (29)	
Neutral	86.36 (133)	13.64 (21)	
Strongly disagree/disagree	73.28 (255)	26.72 (93)	

Table 5f. Characteristics associated with attitudes about abortion training: I intend to seek out opportunities to learn about abortion and abortion-related health services

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	61.09 (190)	38.91 (121)	0.007 (FE)
17-19 years	66.36 (73)	33.64 (37)	
20-21 years	52.08 (75)	47.92 (69)	
22-23 years	79.55 (35)	20.45 (9)	
24-25 years	50.00 (4)	50.00 (4)	
26-31 years	60.00 (3)	40.00 (2)	
Year in Medical School	62.11 (200)	37.89 (122)	0.06
First year	68.60 (83)	31.40 (38)	
Second year	53.91 (62)	46.09 (53)	
Third year	63.95 (55)	36.05 (31)	
Fourth year	-	-	
Fifth year	-	-	
Sixth year	-	-	
Sex	62.11 (200)	37.89 (122)	0.93
Male	62.41 (83)	37.59 (50)	
Female	61.90 (117)	38.10 (72)	
Religious Affiliation	62.11 (200)	37.89 (122)	0.01
Catholic	55.88 (19)	44.12 (15)	
Christian, non-Catholic	60.00 (114)	40.00 (76)	
Muslim	54.55 (24)	45.45 (20)	
Hindu	88.89 (16)	11.11 (2)	
Jewish	88.89 (8)	11.11 (1)	
Other religion	45.45 (5)	54.55 (6)	
Agnostic/Atheist	87.50 (14)	12.50 (2)	
Frequency of Religious Service Attendance	62.11 (200)	37.89 (122)	0.05
Regular	54.55 (84)	45.45 (70)	
Semi-regular	67.74 (42)	32.26 (20)	
Not often	71.62 (53)	28.38 (21)	
Never	65.63 (21)	34.38 (11)	
Relationship Status	62.31 (200)	37.69 (121)	0.24 (FE)
Single, Never with someone	57.78 (52)	42.22 (38)	
Single, Not with anyone currently	60.00 (78)	40.00 (52)	
Single, In a relationship	70.10 (68)	29.90 (29)	
Other (including married)	50.00 (2)	50.00 (20)	
Type of Residential Area Raised In	62.11 (200)	37.89 (122)	0.22 (FE)
Urban/City	63.36 (83)	36.64 (48)	
Township	75.68 (28)	24.32 (9)	
Rural/Farm	50.00 (18)	50.00 (18)	
Suburban	60.00 (69)	40.00 (46)	
Other	66.67 (2)	33.33 (1)	
Nationality	62.11 (200)	37.89 (122)	0.001
South African	58.63 (163)	41.37 (115)	
Non-South African	84.09 (37)	15.91 (7)	
Province in South Africa	58.36 (157)	41.64 (112)	0.24
Eastern Cape	55.26 (21)	44.74 (17)	
Free State	66.67 (2)	33.33 (1)	
Gauteng	59.38 (19)	40.63 (13)	
Kwa-Zulu Natal	71.19 (42)	28.81 (17)	
Limpopo	66.67 (10)	33.33 (5)	
Mpumalanga	20.00 (1)	80.00 (4)	
Northwest	71.43 (5)	28.57 (2)	
Northern	66.67 (2)	33.33 (1)	
Western Cape	51.40 (55)	48.60 (52)	
Population Group	62.38 (199)	37.62 (120)	0.09
White	55.29 (47)	44.71 (38)	
African	70.23 (92)	29.77 (39)	
Coloured	53.33 (24)	46.67 (21)	
Indian	64.71 (33)	35.29 (18)	
Other	42.86 (3)	57.14 (4)	
Ever Had Sexual Intercourse	61.98 (194)	38.02 (119)	0.03
Yes	71.59 (63)	28.41 (25)	
No	58.22 (131)	41.78 (94)	
Considering specializing in OBGYN	61.76 (197)	38.24 (122)	<0.0001
Strongly agree/agree	75.95 (60)	24.05 (19)	
Neutral	73.68 (56)	26.32 (20)	
Strongly disagree/disagree	49.39 (81)	50.61 (83)	

Table 6. Perception of others attitudes towards abortion among medical school students at the University of Cape Town, South Africa as indicated on self-administered questionnaire

Characteristic, n (%) Q 32-35	First year 186 (38.7)	Second year 177 (36.8)	Third year 118 (24.5)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
32. I think most of my friends think abortion should be legal.							
Strongly agree	10 (5.5)	26 (14.7)	16 (13.9)	19 (12.8)	18 (11.0)	7 (8.4)	96 (11.1)
Agree	40 (22.0)	52 (29.4)	33 (28.7)	54 (36.2)	50 (30.7)	27 (44.6)	266 (30.6)
Neutral	59 (32.4)	33 (18.6)	28 (24.4)	38 (25.5)	44 (27.0)	17 (20.5)	219 (25.2)
Disagree	56 (30.8)	41 (23.2)	29 (25.2)	31 (20.8)	39 (23.9)	18 (21.7)	214 (24.6)
Strongly disagree	17 (9.3)	25 (14.1)	9 (7.8)	7 (4.7)	12 (7.4)	4 (4.8)	74 (8.5)
32. I think most of my friends think abortion should be legal.							
Strongly agree/agree	50 (27.5)	78 (44.1)	49 (42.6)	73 (49.0)	68 (41.7)	44 (53.0)	362 (41.7)
Neutral	59 (32.4)	33 (18.6)	28 (24.4)	38 (25.5)	44 (27.0)	17 (20.5)	219 (25.2)
Strongly disagree/disagree	73 (40.1)	66 (37.3)	38 (33.0)	38 (25.5)	51 (31.3)	22 (26.5)	288 (33.1)
33. I think most of my friends think abortion should be illegal.							
Strongly agree	24 (13.3)	30 (16.9)	6 (5.2)	-	-	-	60 (12.7)
Agree	47 (26.1)	32 (18.1)	27 (23.5)				106 (22.5)
Neutral	57 (31.7)	36 (20.3)	35 (30.4)				128 (27.1)
Disagree	37 (20.6)	55 (31.1)	32 (27.8)				124 (26.3)
Strongly disagree	15 (8.3)	24 (13.6)	15 (13.1)				54 (11.4)
33. I think most of my friends think abortion should be illegal.							
Strongly agree/agree	71 (39.4)	62 (35.0)	33 (28.7)	-	-	-	166 (35.2)
Neutral	57 (31.7)	36 (20.4)	35 (30.4)				128 (27.1)
Strongly disagree/disagree	52 (28.9)	79 (44.6)	47 (40.9)				178 (37.7)
34. I think most of my family think abortion should be legal							
Strongly agree	7 (3.9)	23 (13.0)	7 (6.0)	15 (10.1)	14 (8.5)	5 (6.0)	71 (8.1)
Agree	26 (14.4)	31 (17.5)	27 (23.1)	30 (20.1)	25 (15.1)	22 (26.2)	161 (18.4)
Neutral	39 (21.5)	37 (20.9)	34 (29.0)	40 (26.9)	41 (24.9)	19 (22.6)	210 (24.1)
Disagree	55 (30.4)	36 (20.3)	27 (23.1)	38 (25.5)	50 (30.3)	22 (26.2)	228 (26.1)
Strongly disagree	54 (29.8)	50 (28.3)	22 (18.8)	26 (17.4)	35 (21.2)	16 (19.0)	203 (23.3)
34. I think most of my family think abortion should be legal							
Strongly agree/agree	33 (18.2)	54 (30.5)	34 (29.1)	45 (30.2)	39 (23.6)	27 (32.1)	232 (26.6)
Neutral	39 (21.6)	37 (20.9)	34 (29.1)	40 (26.8)	41 (24.9)	19 (22.6)	210 (24.0)
Strongly disagree/disagree	109 (60.2)	86 (48.6)	49 (41.8)	64 (43.0)	85 (51.5)	38 (45.3)	431 (49.4)
35. I think most of my family think abortion should be illegal							
Strongly agree	53 (29.1)	54 (30.5)	21 (17.9)	-	-	-	128 (26.9)
Agree	54 (29.7)	32 (18.1)	25 (21.4)				111 (23.3)
Neutral	42 (23.1)	35 (19.8)	38 (32.5)				115 (24.2)
Disagree	24 (13.2)	33 (18.6)	25 (21.4)				82 (17.2)
Strongly disagree	9 (4.9)	23 (13.0)	8 (6.8)				40 (8.4)
35. I think most of my family think abortion should be illegal							
Strongly agree/agree	107 (58.8)	86 (48.6)	46 (39.3)	-	-	-	239 (50.2)
Neutral	42 (23.1)	35 (19.8)	38 (32.5)				115 (24.2)
Strongly disagree/disagree	33 (18.1)	56 (31.6)	33 (28.2)				122 (25.6)

Table 7. Intentions to provide abortion services among medical school students at the University of Cape Town, South Africa as indicated on self-administered questionnaire

Characteristic, n (%) Q 51-55	First year 186 (38.7)	Second year 177 (36.8)	Third year 118 (24.5)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
51. I intend to *provide* legal abortion services to women once I am qualified.							
Strongly agree	12 (6.7)	24 (13.6)	6 (5.1)	11 (7.4)	11 (6.8)	9 (10.7)	73 (8.4)
Agree	17 (9.4)	17 (9.6)	9 (7.6)	29 (19.5)	25 (15.3)	14 (16.7)	111 (12.7)
Neutral	39 (21.7)	49 (27.7)	33 (28.0)	33 (22.1)	29 (17.8)	23 (27.4)	206 (23.6)
Disagree	43 (23.9)	22 (12.4)	29 (24.6)	34 (22.8)	28 (17.2)	16 (19.0)	172 (19.8)
Strongly disagree	69 (38.3)	65 (36.7)	41 (34.7)	42 (28.2)	70 (42.9)	22 (26.2)	309 (35.5)
51. I intend to *provide* legal abortion services to women once I am qualified.							
Strongly agree/agree	29 (16.1)	41 (23.2)	15 (12.7)	40 (26.9)	36 (22.1)	23 (27.4)	184 (21.1)
Neutral	39 (21.7)	49 (27.7)	33 (28.0)	33 (22.1)	29 (17.8)	23 (27.4)	206 (23.7)
Strongly disagree/disagree	112 (62.2)	87 (49.1)	70 (59.3)	76 (51.0)	98 (60.1)	38 (45.2)	481 (55.2)
52. I would *refer* patients for abortion services, in situations where I cannot or will not provide those services myself.							
Strongly agree	42 (23.3)	57 (32.4)	57 (48.7)	62 (41.3)	73 (44.2)	34 (40.0)	325 (37.2)
Agree	74 (41.1)	62 (35.2)	32 (27.3)	58 (38.7)	42 (25.5)	32 (37.7)	300 (34.3)
Neutral	32 (17.8)	25 (14.2)	12 (10.3)	13 (8.7)	25 (15.1)	14 (16.5)	121 (13.9)
Disagree	15 (8.3)	15 (8.5)	7 (6.0)	11 (7.3)	15 (9.1)	3 (3.5)	66 (7.6)
Strongly disagree	17 (9.5)	17 (9.7)	9 (7.7)	6 (4.0)	10 (6.1)	2 (2.3)	61 (7.00)
52. I would *refer* patients for abortion services, in situations where I cannot or will not provide those services myself.							
Strongly agree/agree	116 (64.4)	119 (67.6)	89 (76.1)	120 (80.0)	115 (69.8)	66 (77.6)	625 (71.6)
Neutral	32 (17.8)	25 (14.2)	12 (10.2)	13 (8.7)	25 (15.1)	14 (16.5)	121 (13.9)
Strongly disagree/disagree	32 (17.8)	32 (18.2)	16 (13.7)	17 (11.3)	25 (15.1)	5 (5.9)	127 (14.5)
53. I would only *refer* women for abortion under certain restricted circumstances.							
Strongly agree	46 (25.7)	35 (19.8)	14 (12.0)	14 (9.5)	20 (12.3)	10 (11.8)	139 (16.0)
Agree	66 (36.9)	55 (31.1)	31 (26.5)	39 (26.3)	46 (28.2)	21 (24.7)	258 (29.7)
Neutral	31 (17.3)	33 (18.6)	23 (19.7)	26 (17.6)	32 (19.6)	14 (16.5)	159 (18.3)
Disagree	21 (11.7)	26 (14.7)	30 (25.6)	49 (33.1)	38 (23.3)	27 (31.7)	191 (22.0)
Strongly disagree	15 (8.4)	28 (15.8)	19 (16.2)	20 (13.5)	27 (16.6)	13 (15.3)	122 (14.0)
53. I would only *refer* women for abortion under certain restricted circumstances.							
Strongly agree/agree	112 (62.6)	90 (50.9)	45 (38.4)	53 (35.8)	66 (40.5)	31 (36.5)	397 (45.7)
Neutral	31 (17.3)	33 (18.6)	23 (19.7)	26 (17.6)	32 (19.6)	14 (16.5)	159 (18.3)
Strongly disagree/disagree	36 (10.1)	54 (30.5)	49 (41.9)	69 (46.6)	65 (39.9)	40 (47.0)	313 (36.0)
53 a. I would *perform* an abortion in a situation of rape.							
Strongly agree	25 (14.6)		21 (18.1)	-	-	-	46 (16.0)
Agree	28 (16.4)	1 (100.0)	17 (14.7)				46 (16.0)
Neutral	39 (22.8)		22 (19.0)				61 (21.1)
Disagree	38 (22.2)		25 (21.5)				63 (21.9)
Strongly disagree	41 (24.0)		31 (26.7)				72 (25.0)
53 a. I would *perform* an abortion in a situation of rape.							
Strongly agree/agree	53 (31.0)	1 (100.0)	38 (32.7)	-	-	-	92 (31.9)
Neutral	39 (22.8)		22 (19.0)				61 (21.2)
Strongly disagree/disagree	79 (46.2)		56 (48.3)				135 (46.9)
53 b. I would *perform* an abortion if the pregnancy posed a risk to the mother's life.							
Strongly agree	31 (18.2)		33 (28.0)	-	-	-	64 (22.2)
Agree	63 (37.1)	1 (100.0)	25 (21.2)				89 (30.8)
Neutral	38 (22.3)		24 (20.3)				62 (21.4)
Disagree	20 (11.8)		19 (16.1)				39 (13.5)
Strongly disagree	18 (10.6)		17 (14.4)				35 (12.1)

Characteristic, n (%) Q 51-55	First year 186 (38.7)	Second year 177 (36.8)	Third year 118 (24.5)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
53 b. I would *perform* an abortion if the pregnancy posed a risk to the mother's life.							
Strongly agree/agree	94 (55.2)	1 (100.0)	58 (49.2)	-	-	-	153 (52.9)
Neutral	38 (22.4)		24 (20.3)				62 (21.5)
Strongly disagree/disagree	38 (22.4)		36 (30.5)				74 (25.6)
53 c. I would *perform* an abortion if the pregnancy posed a risk to the mother's mental health.							
Strongly agree	23 (13.5)		24 (20.7)				47 (16.4)
Agree	49 (28.9)	1 (100.0)	18 (15.5)	-	-	-	68 (23.7)
Neutral	50 (29.4)		31 (26.7)				81 (28.2)
Disagree	25 (14.7)		27 (23.3)				52 (18.1)
Strongly disagree	23 (13.5)		16 (13.8)				39 (13.6)
53 c. I would *perform* an abortion if the pregnancy posed a risk to the mother's mental health.							
Strongly agree/agree	72 (42.4)	1 (100.0)	42 (36.2)				115 (40.1)
Neutral	50 (29.4)		31 (26.7)	-	-	-	81 (28.2)
Strongly disagree/disagree	48 (28.2)		43 (37.1)				91 (31.7)
53 d. I would *perform* an abortion in cases of severe foetal congenital anomaly/defect.							
Strongly agree	23 (13.4)		28 (23.7)	-	-	-	51 (17.6)
Agree	33 (19.3)	1 (100.0)	20 (17.0)				54 (18.6)
Neutral	47 (27.5)		27 (22.9)				74 (25.5)
Disagree	34 (19.9)		24 (20.3)				58 (20.0)
Strongly disagree	34 (19.9)		19 (16.1)				53 (18.3)
53 d. I would *perform* an abortion in cases of severe foetal congenital anomaly/defect.							
Strongly agree/agree	56 (32.7)	1 (100.0)	48 (40.7)	-	-	-	105 (36.2)
Neutral	47 (27.5)		27 (22.9)				74 (25.5)
Strongly disagree/disagree	68 (39.8)		43 (36.4)				111 (38.3)
53 e. I would *perform* an abortion if it were a medical emergency.							
Strongly agree	44 (26.0)		50 (44.3)				94 (33.2)
Agree	66 (39.1)	1 (100.0)	34 (30.1)	-	-	-	101 (35.7)
Neutral	37 (21.9)		17 (15 0)				54 (19.1)
Disagree	12 (7.1)		7 (6.2)				19 (6.7)
Strongly disagree	10 (5.9)		5 (4.4)				15 (5.3)
53 e. I would *perform* an abortion if it were a medical emergency.							
Strongly agree/agree	110 (65.1)	1 (100.0)	84 (74.4)				195 (68.9)
Neutral	37 (21.9)		17 (15.0)	-	-	-	54 (19.1)
Strongly disagree/disagree	22 (13.0)		12 (10.6)				34 (12.0)
53 f. I would *perform* an abortion under any legal circumstances.							
Strongly agree	13 (7.8)		11 (9.5)				24 (8.5)
Agree	15 (9.1)	1 (100.0)	8 (6.9)	-	-	-	24 (8.5)
Neutral	45 (27.1)		24 (20.7)				69 (24.4)
Disagree	42 (25.3)		35 (30.2)				77 (27.2)
Strongly disagree	51 (30.7)		38 (32.7)				89 (31.4)
53 f. I would *perform* an abortion under any legal circumstances.							
Strongly agree/agree	28 (16.9)		19 (16.4)				48 (17.0)
Neutral	45 (27.1)	1 (100.0)	24 (20.7)	-	-	-	69 (24.4)
Strongly disagree/disagree	93 (56.0)		73 (62.9)				166 (58.6)
54. I would not *perform* an abortion under any circumstances.							
Strongly agree	38 (21.2)	44 (25.0)	21 (18.8)	22 (14.9)	45 (27.6)	14 (16.7)	184 (21.4)
Agree	34 (19.0)	10 (5.7)	15 (13.4)	9 (6.1)	14 (8.6)	6 (7.1)	88 (10.2)
Neutral	51 (28.5)	35 (19.9)	25 (22.3)	29 (19.6)	37 (22.7)	9 (10.7)	186 (21.6)
Disagree	32 (17.9)	46 (26.1)	28 (25.0)	43 (29.0)	26 (15.9)	28 (33.3)	203 (23.5)
Strongly disagree	24 (13.4)	41 (23.3)	23 (20.5)	45 (30.4)	41 (25.2)	27 (32.2)	201 (23.3)
54. I would not *perform* an abortion under any circumstances.							
Strongly agree/agree	72 (40.2)	54 (30.7)	36 (32.1)	31 (20.9)	59 (36.2)	20 (23.8)	272 (31.5)
Neutral	51 (28.5)	35 (19.9)	25 (22.3)	29 (19.6)	37 (22.7)	9 (10.7)	186 (21.6)
Strongly disagree/disagree	56 (31.3)	87 (49.4)	51 (45.6)	88 (59.5)	67 (41.1)	55 (65.5)	404 (46.9)

Characteristic, n (%) Q 51-55	First year 186 (38.7)	Second year 177 (36.8)	Third year 118 (24.5)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
55. I would not *refer* a patient for abortion under any circumstances.							
Strongly agree	18 (10.1)	15 (8.5)	6 (5.1)	3 (2.0)	3 (1.9)	2 (2.3)	47 (5.4)
Agree	19 (10.7)	8 (4.5)	7 (6.0)	5 (3.4)	6 (3.7)	1 (1.2)	46 (5.3)
Neutral	44 (24.7)	30 (17.0)	20 (17.1)	15 (10.2)	25 (15.3)	6 (7.1)	140 (16.2)
Disagree	66 (37.1)	65 (36.7)	39 (33.3)	46 (31.3)	53 (32.5)	37 (43.5)	306 (35.3)
Strongly disagree	31 (17.4)	59 (33.3)	45 (38.5)	78 (53.1)	76 (46.6)	39 (45.9)	328 (37.8)
55. I would not *refer* a patient for abortion under any circumstances.							
Strongly agree/agree	37 (20.8)	23 (13.0)	13 (11.1)	8 (5.4)	9 (5.5)	3 (3.5)	93 (10.7)
Neutral	44 (24.7)	30 (16.9)	20 (17.1)	15 (10.2)	25 (15.3)	6 (7.1)	140 (16.2)
Strongly disagree/disagree	97 (54.5)	124 (70.1)	84 (71.8)	124 (84.4)	129 (79.2)	76 (89.4)	634 (73.1)
56. If a female patient requested an abortion, I would try to discourage her from seeking the procedure.							
Strongly agree	42 (23.3)	26 (14.8)	9 (7.7)	9 (6.1)	18 (11.0)	3 (8.6)	107 (12.3)
Agree	44 (24.4)	40 (22.7)	19 (16.2)	27 (18.1)	32 (19.5)	8 (9.5)	170 (19.5)
Neutral	48 (26.7)	56 (31.8)	27 (23.1)	38 (25.5)	36 (21.9)	19 (22.6)	224 (25.7)
Disagree	30 (16.7)	35 (19.9)	24 (20.5)	41 (27.5)	38 (23.2)	30 (35.7)	198 (22.8)
Strongly disagree	16 (8.9)	19 (10.8)	38 (32.5)	34 (22.8)	40 (24.4)	24 (28.6)	171 (19.7)
56. If a female patient requested an abortion, I would try to discourage her from seeking the procedure.							
Strongly agree/agree	86 (47.8)	66 (37.5)	28 (23.9)	36 (24.2)	50 (30.5)	11 (13.1)	277 (31.8)
Neutral	48 (26.7)	56 (31.8)	27 (23.1)	38 (25.5)	36 (21.9)	19 (22.6)	224 (25.8)
Strongly disagree/disagree	46 (25.5)	54 (30.7)	62 (53.0)	75 (50.3)	78 (47.6)	54 (64.3)	369 (42.4)
57. I think I would be discriminated against/stigmatized if I *provided* abortions to women.							
Strongly agree	11 (6.2)	10 (5.7)	19 (16.4)	8 (5.3)	7 (4.3)	4 (4.8)	59 (6.8)
Agree	52 (29.4)	46 (26.3)	31 (26.7)	45 (30.0)	40 (24.5)	12 (14.3)	226 (26.1)
Neutral	51 (28.8)	58 (33.1)	32 (27.6)	35 (23.3)	44 (27.0)	24 (28.6)	244 (28.2)
Disagree	48 (27.1)	33 (18.9)	21 (18.1)	41 (27.4)	42 (25.8)	27 (32.1)	212 (24.5)
Strongly disagree	15 (8.5)	28 (16.0)	13 (11.2)	21 (14.0)	30 (18.4)	17 (20.2)	124 (14.4)
57. I think I would be discriminated against/stigmatized if I *provided* abortions to women.							
Strongly agree/agree	63 (35.6)	56 (32.0)	50 (43.1)	53 (35.3)	47 (28.8)	16 (19.0)	285 (33.0)
Neutral	51 (28.8)	58 (33.1)	32 (27.6)	35 (23.3)	44 (27.0)	24 (28.6)	244 (28.2)
Strongly disagree/disagree	63 (35.6)	61 (34.9)	34 (29.3)	62 (41.4)	72 (44.2)	44 (52.4)	336 (38.8)
58. I would try to convince other health care providers *not* to perform abortions.							
Strongly agree	17 (9.5)	15 (8.5)	6 (5.2)	4 (2.7)	7 (4.3)	2 (2.4)	51 (5.8)
Agree	38 (21.2)	28 (15.8)	9 (7.7)	14 (9.4)	12 (7.3)	4 (4.7)	105 (12.1)
Neutral	53 (29.6)	38 (21.5)	30 (25.9)	29 (19.5)	35 (21.3)	16 (18.8)	201 (23.1)
Disagree	46 (25.7)	52 (29.4)	36 (31.0)	59 (39.6)	50 (30.5)	30 (35.3)	273 (31.4)
Strongly disagree	25 (14.0)	44 (24.8)	35 (30.2)	43 (28.8)	60 (36.6)	33 (38.8)	240 (27.6)
58. I would try to convince other health care providers *not* to perform abortions.							
Strongly agree/agree	55 (30.7)	43 (24.3)	15 (12.9)	18 (12.1)	19 (11.6)	6 (7.1)	156 (17.9)
Neutral	53 (29.6)	38 (21.5)	30 (25.9)	29 (19.5)	35 (21.3)	16 (18.8)	201 (23.1)
Strongly disagree/disagree	71 (39.7)	96 (54.2)	71 (61.2)	102 (68.4)	110 (67.1)	63 (74.1)	513 (59.0)

Table 7a. Characteristics associated with intentions to provide abortion services: I intend to provide legal abortion services to women once I am qualified

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	23.68 (81)	76.32 (261)	0.16 (FE)
17-19 years	24.79 (30)	75.21 (91)	
20-21 years	20.96 (35)	79.04 (132)	
22-23 years	27.50 (11)	72.50 (29)	
24-25 years	20.00 (2)	80.00 (8)	
26-31 years	75.00 (3)	25.00 (1)	
Year in Medical School	27.67 (184)	72.33 (481)	0.011
First year	20.57 (29)	79.43 (112)	
Second year	32.03 (41)	67.97 (87)	
Third year	17.64 (15)	82.35 (70)	
Fourth year	34.48 (40)	65.52 (76)	
Fifth year	26.87 (36)	73.13 (98)	
Sixth year	37.70 (23)	62.30 (38)	
Sex	27.67 (184)	72.33 (481)	0.63
Male	26.56 (64)	73.44 (177)	
Female	28.30 (120)	71.70 (304)	
Religious Affiliation	27.75 (184)	72.25 (479)	<0.0001
Catholic	15.49 (11)	84.51 (60)	
Christian, non-Catholic	22.49 (85)	77.51 (293)	
Muslim	12.00 (12)	88.00 (88)	
Hindu	63.41 (26)	36.59 (15)	
Jewish	86.67 (13)	13.33 (2)	
Other religion	47.62 (10)	52.38 (11)	
Agnostic/Atheist	72.97 (27)	27.03 (10)	
Frequency of Religious Service Attendance	26.45 (173)	73.55 (481)	<0.0001
Regular	6.25 (20)	93.75 (300)	
Semi-regular	32.85 (45)	67.15 (92)	
Not often	49.23 (64)	50.77 (66)	
Never	65.67 (44)	34.33 (23)	
Relationship Status	26.74 (173)	73.26 (173)	<0.0001
Single, Never with someone	15.71 (22)	84.29 (118)	
Single, Not with anyone currently	25.41 (62)	74.59 (182)	
Single, In a relationship	36.17 (85)	63.83 (150)	
Other (including married)	14.29 (4)	85.71 (24)	
Type of Residential Area Raised In	24.01 (85)	75.99 (269)	0.377 (FE)
Urban/City	28.76 (44)	71.24 (109)	
Township	25.71 (9)	74.29 (26)	
Rural/Farm	17.65 (6)	82.35 (28)	
Suburban	20.16 (26)	79.84 (103)	
Other	0 (0)	100.0 (3)	
Nationality	24.01 (85)	75.99 (269)	0.52
South African	23.47 (73)	76.53 (238)	
Non-South African	27.91 (12)	72.09 (31)	
Province in South Africa	23.18 (70)	76.82 (232)	0.07
Eastern Cape	21.28 (10)	78.72 (37)	
Free State	25.00 (1)	75.00 (3)	
Gauteng	18.42 (7)	81.58 (31)	
Kwa-Zulu Natal	34.43 (21)	65.57 (40)	
Limpopo	0 (0)	100.0 (15)	
Mpumalanga	16.67 (1)	83.33 (5)	
Northwest	0 (0)	100.0 (6)	
Northern	66.67 (2)	33.33 (1)	
Western Cape	22.95 (28)	77.05 (94)	
Population Group	27.88 (184)	72.12 (476)	0.12
White	28.97 (62)	71.03 (152)	
African	29.25 (62)	70.75 (150)	
Coloured	17.65 (18)	82.35 (84)	
Indian	33.33 (36)	66.67 (72)	
Other	25.00 (6)	75.00 (18)	
Ever Had Sexual Intercourse	27.86 (180)	72.14 (466)	<0.0001
Yes	44.96 (107)	55.04 (131)	
No	17.89 (73)	82.11 (335)	
Considering specializing in OBGYN	27.79 (184)	72.21 (478)	0.64
Strongly agree/agree	29.03 (45)	70.97 (110)	
Neutral	30.22 (42)	69.78 (97)	
Strongly disagree/disagree	26.36 (97)	73.64 (271)	

Table 7b. Characteristics associated with intentions to provide abortion services: I would refer patients for abortion services, in situations where I cannot or will not provide those services myself

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	80.15 (315)	19.85 (78)	0.90 (FE)
17-19 years	81.02 (111)	18.98 (26)	
20-21 years	79.27 (153)	20.73 (40)	
22-23 years	82.98 (39)	17.02 (8)	
24-25 years	75.00 (9)	25.00 (3)	
26-31 years	75.00 (3)	25.00 (1)	
Year in Medical School			0.04
First year	78.38 (116)	21.62 (32)	
Second year	78.81 (119)	21.19 (32)	
Third year	84.76 (89)	15.24 (16)	
Fourth year	87.59 (120)	12.41 (17)	
Fifth year	82.14 (115)	17.86 (25)	
Sixth year	92.96 (66)	7.04 (5)	
Sex	83.11 (625)	16.89 (127)	0.39
Male	81.51 (216)	18.49 (49)	
Female	83.98 (409)	16.02 (78)	
Religious Affiliation	83.04 (622)	16.96 (127)	<0.0001
Catholic	83.75 (67)	16.25 (13)	
Christian, non-Catholic	78.54 (322)	21.46 (88)	
Muslim	79.21 (80)	20.79 (21)	
Hindu	100.0 (55)	0 (0)	
Jewish	95.45 (21)	4.55 (1)	
Other religion	96.00 (24)	4.00 (1)	
Agnostic/Atheist	94.64 (53)	5.36 (3)	
Frequency of Religious Service Attendance	82.95 (613)	17.05 (126)	<0.0001
Regular	68.17 (212)	31.83 (99)	
Semi-regular	95.12 (156)	4.88 (8)	
Not often	94.25 (164)	5.75 (10)	
Never	90.00 (81)	10.00 (9)	
Relationship Status	82.83 (608)	17.17 (126)	<0.0001 (FE)
Single, Never with someone	79.31 (115)	20.69 (30)	
Single, Not with anyone currently	77.15 (206)	22.85 (61)	
Single, In a relationship	90.54 (268)	9.46 (28)	
Other (including married)	73.08 (19)	26.92 (7)	
Type of Residential Area Raised In	80.20 (324)	19.80 (80)	0.78 (FE)
Urban/City	82.14 (138)	17.86 (30)	
Township	82.22 (37)	17.78 (8)	
Rural/Farm	75.61 (31)	24.39 (10)	
Suburban	78.23 (115)	21.77 (32)	
Other	100.0 (3)	0 (0)	
Nationality	80.20 (324)	19.80 (80)	0.36
South African	79.49 (279)	20.51 (72)	
Non-South African	84.91 (45)	15.09 (8)	
Province in South Africa	79.23 (267)	20.77 (70)	0.11
Eastern Cape	83.67 (41)	16.33 (8)	
Free State	66.67 (4)	33.33 (2)	
Gauteng	80.00 (32)	20.00 (8)	
Kwa-Zulu Natal	82.19 (60)	17.81 (13)	
Limpopo	94.74 (18)	5.26 (1)	
Mpumalanga	42.86 (3)	57.14 (4)	
Northwest	90.00 (9)	10.00 (1)	
Northern	100.0 (3)	0 (0)	
Western Cape	74.62 (97)	25.38 (33)	
Population Group	83.22 (620)	16.78 (125)	0.19
White	80.58 (195)	19.42 (47)	
African	82.38 (201)	17.62 (43)	
Coloured	83.33 (90)	16.67 (18)	
Indian	90.40 (113)	9.60 (12)	
Other	80.77 (21)	19.23 (5)	
Ever Had Sexual Intercourse	82.99 (605)	17.01 (124)	<0.0001
Yes	91.69 (276)	8.31 (25)	
No	76.87 (329)	23.13 (99)	
Considering specializing in OBGYN	83.16 (622)	16.84 (126)	0.25
Strongly agree/agree	80.22 (146)	19.78 (36)	
Neutral	81.40 (140)	18.60 (32)	
Strongly disagree/disagree	85.28 (336)	14.72 (58)	

Table 7c. Characteristics associated with intentions to provide abortion services: I would only refer women for abortion under certain restricted circumstances

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	63.76 (241)	36.24 (137)	<0.0001 (FE)
17-19 years	77.86 (102)	22.14 (29)	
20-21 years	57.22 (107)	42.78 (80)	
22-23 years	55.56 (25)	44.44 (20)	
24-25 years	33.33 (3)	66.67 (6)	
26-31 years	66.67 (4)	33.33 (2)	
Year in Medical School	55.92 (397)	44.08 (313)	<0.0001
First year	75.68 (112)	24.32 (36)	
Second year	62.50 (90)	37.50 (54)	
Third year	47.87 (45)	52.13 (49)	
Fourth year	43.44 (53)	56.56 (69)	
Fifth year	50.38 (66)	49.62 (65)	
Sixth year	43.66 (31)	56.34 (40)	
Sex	55.92 (397)	44.08 (313)	0.44
Male	57.79 (152)	42.21 (111)	
Female	54.81 (245)	45.19 (202)	
Religious Affiliation	55.73 (394)	44.27 (313)	0.002
Catholic	56.98 (49)	43.02 (37)	
Christian, non-Catholic	56.73 (215)	43.27 (164)	
Muslim	69.90 (72)	30.10 (31)	
Hindu	40.43 (19)	59.57 (28)	
Jewish	36.36 (8)	63.64 (14)	
Other religion	50.00 (10)	50.00 (10)	
Agnostic/Atheist	42.00 (21)	58.00 (29)	
Frequency of Religious Service Attendance	56.29 (394)	43.71 (306)	<0.0001
Regular	63.37 (192)	36.63 (111)	
Semi-regular	59.35 (92)	40.65 (63)	
Not often	46.71 (78)	53.29 (89)	
Never	42.67 (32)	57.33 (43)	
Relationship Status	56.07 (388)	43.93 (304)	0.001
Single, Never with someone	70.42 (100)	29.58 (42)	
Single, Not with anyone currently	53.73 (137)	46.27 (118)	
Single, In a relationship	52.01 (142)	47.99 (131)	
Other (including married)	40.91 (9)	59.09 (13)	
Type of Residential Area Raised In	63.99 (247)	36.01 (139)	0.55 (FE)
Urban/City	63.52 (101)	36.48 (58)	
Township	65.79 (25)	34.21 (13)	
Rural/Farm	56.10 (23)	43.90 (18)	
Suburban	65.28 (94)	34.72 (50)	
Other	100.0 (4)	0 (0)	
Nationality	63.99 (247)	36.01 (139)	0.61
South African	64.48 (216)	35.52 (119)	
Non-South African	60.78 (31)	39.22 (20)	
Province in South Africa	64.31 (209)	35.69 (116)	0.53
Eastern Cape	65.96 (31)	34.04 (16)	
Free State	60.00 (3)	40.00 (2)	
Gauteng	69.77 (30)	30.23 (13)	
Kwa-Zulu Natal	72.06 (49)	27.94 (19)	
Limpopo	70.59 (12)	29.41 (5)	
Mpumalanga	66.67 (4)	33.33 (2)	
Northwest	44.44 (4)	55.56 (5)	
Northern	33.33 (1)	66.67 (2)	
Western Cape	59.06 (75)	40.94 (52)	
Population Group	55.70 (391)	44.30 (311)	0.04
White	48.74 (116)	51.26 (122)	
African	59.64 (133)	40.36 (90)	
Coloured	59.05 (62)	40.95 (43)	
Indian	55.36 (62)	44.64 (50)	
Other	75.0 (18)	25.00 (6)	
Ever Had Sexual Intercourse	55.65 (384)	44.35 (306)	<0.0001
Yes	43.23 (115)	56.77 (151)	
No	63.44 (269)	36.56 (155)	
Considering specializing in OBGYN	55.92 (397)	44.08 (313)	0.29
Strongly agree/agree	56.80 (96)	43.20 (73)	
Neutral	60.76 (96)	39.24 (62)	
Strongly disagree/disagree	53.52 (205)	46.48 (178)	

Table 7d. Characteristics associated with intentions to provide abortion services: I would not perform an abortion under any circumstances

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	45.64 (157)	54.36 (187)	0.38 (FE)
17-19 years	48.70 (56)	51.30 (59)	
20-21 years	44.44 (76)	55.56 (95)	
22-23 years	41.86 (18)	58.14 (25)	
24-25 years	66.67 (6)	33.33 (3)	
26-31 years	16.67 (1)	83.33 (5)	
Year in Medical School	40.24 (272)	59.76 (404)	<0.0001
First year	56.25 (72)	43.75 (56)	
Second year	38.30 (54)	61.70 (87)	
Third year	41.38 (36)	58.62 (51)	
Fourth year	26.05 (31)	73.95 (88)	
Fifth year	46.83 (59)	53.17 (67)	
Sixth year	26.67 (20)	73.33 (55)	
Sex	40.24 (272)	59.76 (404)	0.67
Male	41.30 (102)	58.70 (145)	
Female	39.63 (170)	60.37 (259)	
Religious Affiliation	40.12 (270)	59.88 (403)	<0.0001
Catholic	58.90 (43)	41.10 (30)	
Christian, non-Catholic	44.72 (165)	55.28 (204)	
Muslim	48.84 (42)	51.16 (44)	
Hindu	26.42 (14)	73.58 (39)	
Jewish	0 (0)	100.0 (22)	
Other religion	26.09 (6)	73.91 (17)	
Agnostic/Atheist	0 (0)	100.0 (47)	
Frequency of Religious Service Attendance	40.94 (271)	59.06 (391)	<0.0001
Regular	60.92 (173)	39.08 (111)	
Semi-regular	36.23 (50)	63.77 (88)	
Not often	23.90 (38)	76.10 (121)	
Never	12.35 (10)	87.65 (71)	
Relationship Status	40.82 (269)	59.18 (390)	0.01
Single, Never with someone	48.00 (60)	52.00 (65)	
Single, Not with anyone currently	43.85 (107)	56.15 (137)	
Single, In a relationship	33.58 (89)	66.42 (176)	
Other (including married)	52.00 (13)	48.00 (12)	
Type of Residential Area Raised In	45.51 (162)	54.49 (194)	0.62 (FE)
Urban/City	42.57 (63)	57.43 (85)	
Township	46.51 (20)	53.49 (23)	
Rural/Farm	47.37 (18)	52.63 (20)	
Suburban	47.20 (59)	52.80 (66)	
Other	100 (2)	0 (0)	
Nationality	45.51 (162)	54.49 (194)	0.29
South African	46.60 (144)	53.40 (165)	
Non-South African	38.30 (18)	61.70 (29)	
Province in South Africa	46.82 (140)	53.18 (159)	0.49
Eastern Cape	41.67 (20)	58.33 (28)	
Free State	40.0 (2)	60.00 (3)	
Gauteng	45.45 (15)	54.55 (18)	
Kwa-Zulu Natal	50.77 (33)	49.23 (32)	
Limpopo	33.33 (5)	66.67 (10)	
Mpumalanga	42.86 (3)	57.14 (4)	
Northwest	25.00 (2)	75.00 (6)	
Northern	100.0 (3)	0 (0)	
Western Cape	49.57 (57)	50.43 (58)	
Population Group	40.00 (268)	60.00 (402)	0.19
White	39.91 (91)	60.09 (137)	
African	38.32 (82)	61.68 (132)	
Coloured	45.10 (46)	54.90 (56)	
Indian	42.34 (47)	57.66 (64)	
Other	13.33 (2)	86.67 (13)	
Ever Had Sexual Intercourse	39.85 (261)	60.15 (394)	<0.0001
Yes	27.37 (75)	72.63 (199)	
No	48.82 (186)	51.18 (195)	
Considering specializing in OBGYN	39.97 (269)	60.03 (404)	0.89
Strongly agree/agree	38.61 (61)	61.39 (97)	
Neutral	39.47 (60)	60.53 (92)	
Strongly disagree/disagree	40.77 (148)	59.23 (215)	

Table 7e. Characteristics associated with intentions to provide abortion services: I would not refer a patient for abortion under any circumstances.

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	18.90 (69)	81.10 (296)	0.57 (FE)
17-19 years	22.76 (28)	77.24 (95)	
20-21 years	16.5 (30)	83.05 (147)	
22-23 years	16.67 (8)	83.33 (40)	
24-25 years	25.00 (3)	75.00 (9)	
26-31 years	0 (0)	100.0 (5)	
Year in Medical School	12.79 (93)	87.21 (634)	<0.0001
First year	27.61 (37)	72.39 (97)	
Second year	15.65 (23)	84.35 (124)	
Third year	13.40 (13)	86.60 (84)	
Fourth year	6.06 (8)	93.94 (124)	
Fifth year	6.52 (9)	93.48 (129)	
Sixth year	3.80 (3)	96.20 (76)	
Sex	12.79 (93)	87.21 (634)	0.03
Male	16.47 (42)	89.19 (421)	
Female	10.81 (51)	83.53 (213)	
Religious Affiliation	12.83 (93)	87.17 (632)	0.001
Catholic	12.82 (10)	87.18 (68)	
Christian, non-Catholic	17.92 (69)	82.08 (316)	
Muslim	7.00 (7)	93.00 (93)	
Hindu	5.08 (3)	94.92 (56)	
Jewish	4.35 (1)	95.65 (22)	
Other religion	0 (0)	100.0 (27)	
Agnostic/Atheist	5.66 (3)	94.34 (50)	
Frequency of Religious Service Attendance	12.76 (91)	87.24 (622)	<0.0001
Regular	20.48 (60)	79.52 (233)	
Semi-regular	5.59 (9)	94.41 (152)	
Not often	9.25 (16)	90.75 (157)	
Never	6.98 (6)	93.02 (80)	
Relationship Status	13.01 (92)	86.99 (615)	0.001 (FE)
Single, Never with someone	17.91 (24)	82.09 (110)	
Single, Not with anyone currently	17.06 (43)	82.94 (209)	
Single, In a relationship	7.43 (22)	92.57 (274)	
Other (including married)	12.00 (3)	88.00 (22)	
Type of Residential Area Raised In	19.31 (73)	80.69 (305)	0.62 (FE)
Urban/City	19.02 (31)	80.98 (132)	
Township	19.51 (8)	80.49 (33)	
Rural/Farm	28.21 (11)	71.79 (28)	
Suburban	17.29 (23)	82.71 (110)	
Other	0 (0)	100.0 (2)	
Nationality	19.31 (73)	80.69 (305)	0.99
South African	19.31 (62)	80.69 (259)	
Non-South African	19.30 (11)	80.70 (46)	
Province in South Africa	19.81 (61)	80.19 (247)	0.21
Eastern Cape	17.02 (8)	82.98 (39)	
Free State	33.33 (1)	66.67 (2)	
Gauteng	13.89 (5)	86.11 (31)	
Kwa-Zulu Natal	20.00 (14)	80.00 (56)	
Limpopo	29.41 (5)	70.59 (12)	
Mpumalanga	50.00 (2)	50.00 (2)	
Northwest	0 (0)	100.0 (8)	
Northern	66.67 (2)	33.33 (1)	
Western Cape	20.00 (24)	80.00 (96)	
Population Group	12.66 (91)	87.34 (628)	0.12
White	11.72 (28)	88.28 (211)	
African	17.03 (39)	82.97 (190)	
Coloured	11.76 (12)	88.24 (90)	
Indian	8.66 (11)	91.34 (116)	
Other	4.55 (1)	95.45 (21)	
Ever Had Sexual Intercourse	12.38 (87)	87.62 (616)	0.12
Yes	10.14 (30)	89.86 (266)	
No	14.00 (57)	86.00 (350)	
Considering specializing in OBGYN	12.31 (89)	87.69 (634)	0.09
Strongly agree/agree	13.79 (24)	86.21 (150)	
Neutral	16.27 (27)	83.73 (139)	
Strongly disagree/disagree	9.92 (38)	90.08 (345)	

Table 7f. Characteristics associated with intentions to provide abortion services: If a female patient requested an abortion, I would try to discourage her from seeking the procedure.

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	52.42 (173)	47.58 (157)	0.02 (FE)
17-19 years	60.33 (73)	39.67 (48)	
20-21 years	52.23 (82)	47.77 (75)	
22-23 years	30.56 (11)	69.44 (25)	
24-25 years	50.00 (5)	50.00 (5)	
26-31 years	33.33 (2)	66.67 (4)	
Year in Medical School	277 (42.88)	57.12 (369)	<0.0001
First year	65.15 (86)	34.85 (46)	
Second year	55.00 (66)	45.00 (54)	
Third year	31.11 (28)	68.89 (62)	
Fourth year	32.43 (36)	67.57 (75)	
Fifth year	39.06 (50)	60.94 (78)	
Sixth year	16.92 (11)	83.08 (54)	
Sex	42.88 (277)	57.12 (369)	0.03
Male	48.47 (111)	51.53 (118)	
Female	39.81 (166)	60.19 (251)	
Religious Affiliation	42.86 (276)	57.14 (368)	<0.0001
Catholic	38.81 (26)	61.19 (41)	
Christian, non-Catholic	51.39 (185)	48.61 (175)	
Muslim	53.09 (43)	46.91 (38)	
Hindu	14.29 (7)	85.71 (42)	
Jewish	15.79 (3)	84.21 (16)	
Other religion	30.43 (7)	69.57 (16)	
Agnostic/Atheist	11.11 (5)	88.89 (40)	
Frequency of Religious Service Attendance	43.53 (276)	56.47 (358)	<0.0001
Regular	67.26 (189)	32.74 (92)	
Semi-regular	30.08 (40)	69.92 (93)	
Not often	25.50 (38)	74.50 (111)	
Never	12.68 (9)	87.32 (62)	
Relationship Status	43.56 (274)	56.44 (355)	0.001
Single, Never with someone	52.03 (64)	47.97 (59)	
Single, Not with anyone currently	48.25 (110)	51.75 (118)	
Single, In a relationship	33.99 (86)	66.01 (167)	
Other (including married)	56.00 (14)	44.00 (11)	
Type of Residential Area Raised In	52.63 (180)	47.37 (162)	0.41 (FE)
Urban/City	47.52 (67)	52.48 (74)	
Township	58.14 (25)	41.86 (18)	
Rural/Farm	52.94 (18)	47.06 (16)	
Suburban	55.74 (68)	44.26 (54)	
Other	100.0 (2)	0 (0)	
Nationality	52.63 (180)	47.37 (162)	0.07
South African	54.55 (162)	45.45 (135)	
Non-South African	40.00 (18)	60.00 (27)	
Province in South Africa	54.90 (157)	45.10 (129)	0.32
Eastern Cape	50.00 (23)	50.00 (23)	
Free State	75.00 (3)	25.00 (1)	
Gauteng	66.67 (24)	33.33 (12)	
Kwa-Zulu Natal	53.13 (34)	46.88 (30)	
Limpopo	64.29 (9)	35.71 (5)	
Mpumalanga	16.67 (1)	83.33 (5)	
Northwest	62.50 (5)	37.50 (3)	
Northern	100.0 (2)	0 (0)	
Western Cape	52.83 (56)	47.17 (50)	
Population Group	42.66 (273)	57.34 (367)	0.31
White	40.20 (82)	59.80 (122)	
African	46.54 (101)	53.46 (116)	
Coloured	43.48 (40)	56.52 (52)	
Indian	36.45 (39)	63.55 (68)	
Other	55.00 (11)	45.00 (9)	
Ever Had Sexual Intercourse	42.90 (269)	57.10 (358)	<0.0001
Yes	25.78 (66)	74.22 (190)	
No	54.72 (203)	45.28 (168)	
Considering specializing in OBGYN	42.79 (276)	57.21 (369)	0.04
Strongly agree/agree	50.97 (79)	49.03 (76)	
Neutral	43.33 (65)	56.67 (85)	
Strongly disagree/disagree	38.82 (132)	61.18 (208)	

Table 7g. Characteristics associated with intentions to provide abortion services: I would try to convince other health care providers not to perform abortions.

Characteristic, n (%)	Yes, I agree	No, I do not agree	P-value
Age	31.75 (107)	68.25 (230)	0.19 (FE)
17-19 years	38.79 (45)	61.21 (71)	
20-21 years	30.54 (51)	69.46 (116)	
22-23 years	19.51 (8)	80.49 (33)	
24-25 years	25.00 (2)	75.00 (6)	
26-31 years	20.00 (1)	80.00 (4)	
Year in Medical School	23.32 (156)	76.68 (513)	<0.0001
First year	43.65 (55)	56.35 (71)	
Second year	30.94 (43)	69.06 (96)	
Third year	17.44 (15)	82.56 (71)	
Fourth year	15.00 (18)	85.00 (102)	
Fifth year	14.73 (19)	85.27 (110)	
Sixth year	8.70 (6)	91.30 (63)	
Sex	23.32 (156)	76.68 (513)	0.09
Male	26.91 (67)	73.09 (182)	
Female	21.19 (89)	78.81(331)	
Religious Affiliation	23.27 (155)	76.73 (511)	<0.0001
Catholic	22.54 (16)	77.46 (55)	
Christian, non-Catholic	31.96 (116)	68.04 (247)	
Muslim	23.08 (18)	76.92 (60)	
Hindu	1.85 (1)	98.15 (53)	
Jewish	0 (0)	100.0 (22)	
Other religion	7.69 (2)	92.31 (24)	
Agnostic/Atheist	3.85 (2)	96.15 (50)	
Frequency of Religious Service Attendance	23.70 (155)	76.30 (499)	<0.0001
Regular	46.07 (123)	53.93 (144)	
Semi-regular	9.29 (13)	90.71 (127)	
Not often	7.88 (13)	92.12 (152)	
Never	7.32 (6)	92.68 (76)	
Relationship Status	23.46 (152)	76.54 (496)	<0.0001 (FE)
Single, Never with someone	36.89 (45)	63.11 (77)	
Single, Not with anyone currently	28.40 (69)	71.60 (174)	
Single, In a relationship	12.17 (32)	87.83 (231)	
Other (including married)	30.00 (6)	70.00 (14)	
Type of Residential Area Raised In	32.19 (113)	238 (67.81)	0.54 (FE)
Urban/City	28.77 (42)	71.23 (104)	
Township	29.73 (11)	70.27 (26)	
Rural/Farm	42.86 (15)	57.14 (20)	
Suburban	33.85 (44)	66.15 (86)	
Other	33.33 (1)	66.67 (2)	
Nationality	32.19 (113)	67.81 (238)	0.29
South African	33.22 (101)	66.78 (203)	
Non-South African	25.53 (12)	74.47 (35)	
Province in South Africa	33.33 (98)	66.67 (196)	0.73
Eastern Cape	31.82 (14)	68.18 (30)	
Free State	60.00 (3)	40.00 (2)	
Gauteng	34.29 (12)	65.71 (23)	
Kwa-Zulu Natal	33.80 (24)	66.20 (47)	
Limpopo	45.45 (5)	54.55 (6)	
Mpumalanga	0 (0)	100.0 (5)	
Northwest	33.33 (3)	66.67 (6)	
Northern	50.00 (1)	50.00 (1)	
Western Cape	32.14 (36)	67.86 (76)	
Population Group	23.08 (153)	76.92 (510)	0.02
White	29.60 (66)	70.40 (157)	
African	21.40 (46)	78.60 (169)	
Coloured	22.22 (22)	77.78 (77)	
Indian	13.08 (14)	86.92 (93)	
Other	26.32 (5)	73.68 (14)	
Ever Had Sexual Intercourse	23.54 (153)	76.46 (497)	<0.0001
Yes	8.96 (24)	91.04 (244)	
No	33.77 (129)	66.23 (253)	
Considering specializing in OBGYN	23.20 (155)	76.80 (513)	0.35
Strongly agree/agree	26.25 (42)	73.75 (118)	
Neutral	25.17 (37)	74.83 (110)	
Strongly disagree/disagree	21.05 (76)	78.95 (285)	

Table 8. External influences on beliefs about TOP among medical school students at the University of Cape Town, South Africa as indicated on self-administered questionnaire

Characteristic, n (%) Q 59-63	First year 186 (38.7)	Second year 177 (36.8)	Third year 118 (24.5)	Fourth year 150 (17.0)	Fifth year 166 (18.8)	Sixth year 85 (9.6)	Total 882 (100.0)
59. Do you think that your attitudes towards abortion have changed since you started medical school?							
YES	32 (17.7)	56 (32.0)	50 (42.7)	82 (55.4)	64 (38.8)	50 (59.5)	334 (38.4)
NO	121 (66.8)	108 (61.7)	52 (44.5)	60 (40.5)	86 (52.1)	28 (33.3)	455 (52.3)
Don't know	28 (15.5)	11 (6.3)	15 (12.8)	6 (4.1)	15 (9.1)	6 (7.2)	81 (9.3)
60. How strongly has your family influenced your beliefs about abortion?							
Very much	54 (30.3)	49 (27.7)	19 (16.1)	23 (15.5)	35 (21.5)	14 (16.5)	194 (22.3)
Somewhat	74 (41.6)	77 (43.5)	57 (48.3)	78 (52.7)	76 (46.6)	49 (57.6)	411 (47.3)
Not at all	50 (28.1)	51 (28.8)	42 (35.6)	47 (31.8)	52 (31.9)	22 (25.9)	264 (30.4)
61. How strongly have your friends influenced your beliefs about abortion?							
Very much	18 (10.1)	21 (11.9)	11 (9.3)	16 (10.9)	19 (11.5)	8 (9.4)	93 (10.7)
Somewhat	85 (47.8)	85 (48.3)	56 (47.5)	71 (48.3)	72 (43.6)	47 (55.3)	416 (47.9)
Not at all	75 (42.1)	70 (39.8)	51 (43.2)	60 (40.8)	74 (44.9)	30 (35.3)	360 (41.4)
62. How strongly has your religion influenced your beliefs about abortion?							
Very much	102 (57.3)	97 (54.8)	57 (49.2)	54 (36.5)	79 (47.9)	32 (37.7)	421 (48.4)
Somewhat	45 (25.3)	33 (18.6)	36 (31.0)	55 (37.2)	48 (29.1)	29 (34.1)	246 (28.3)
Not at all	31 (17.4)	47 (26.6)	23 (19.8)	39 (26.3)	38 (23.0)	24 (28.2)	202 (23.3)
63. How strongly has your medical education influenced your beliefs about abortion?				-	-	-	
Very much	44 (25.1)	48 (27.1)	37 (31.6)				129 (27.5)
Somewhat	81 (46.3)	88 (49.7)	58 (49.6)				227 (48.4)
Not at all	50 (28.6)	41 (23.2)	22 (18.8)				113 (24.1)

Table 9. Overall and class-specific response rates obtained among medical school students at the University of Cape Town, South Africa

Medical School Class	Responses obtained (#), determined by number of questionnaires completed	Total students enrolled in 2005 in MBChB program (#)	Response rate (%)
1st year	186	230	80.9
2nd year	177	193	91.7
3rd year	118	170	69.4
4th year	150	168	89.3
5th year	166	187	88.8
6th year	85	152	55.9
Total	**882**	**1100**	**80.2**

APPENDIX B: Study Instrument

Consent and Questionnaire for Future Health Care Providers regarding Termination of Pregnancy (TOP) / Abortion Services

- Thank you for taking part in this study. The following questionnaire will take about 20 minutes to complete. Please be as honest and thorough as possible in your answers.
- If you are confused or have any questions, do not hesitate to raise your hand and the facilitator will help.
- Your name and/or other personal identifiers will not be collected anywhere on this questionnaire.
- **Participation in this survey is completely voluntary, and you may decide not to participate or decline to answer any questions without penalty.**
- **The information you provide will remain completely anonymous and confidential, and only the research investigators will ever see the information collected.**

I have read and understood the above information, and I voluntarily agree to participate by completing the following questionnaire. Further, I understand that I may withdraw from the study at any time or refuse to answer any questions without penalty. **(Please indicate your consent with a tick mark): _____**

Please circle or write in the most appropriate answer.

Demographic Information

1. I am… a. male b. female

2. My date of birth is… _____ / _____ / _____ (Day, Month, Year).

3. I am a _____ year medical student.
   a. first b. second c. third d. fourth e. fifth f. sixth

4. I would describe my religion as…
   a. Catholic
   b. Christian, but not Catholic
   c. Muslim
   d. Hindu
   e. Jewish
   f. other religion (please specify: _____)
   g. agnostic/atheist

5. I attend religious services…
   a. regularly b. semi-regularly c. not often d. never

6. I am…
   a. single, never been in a romantic relationship
   b. single, not in a romantic relationship now (but have been in the past)
   c. involved in a romantic relationship now
   d. other (please specify: _____)

7. I grew up in an area characterized as:
   a. urban/city b. township c. rural/farm d. suburban
   e. other (please specify: _____)

8. I grew up:
   a. inside South Africa (please specify PROVINCE: _____)
   b. in another country outside South Africa (please specify COUNTRY: _____)

9. I would describe myself as:
   a. White b. African c. Coloured d. Indian
   e. other (please specify: _____)

10. I _____ had sexual intercourse.
    a. have
    b. have never

11. If you have had sexual intercourse, how old were you the first time you had sexual intercourse? ____

Please answer true / false / don't know to the following questions (circle your answer):

12	Legal abortion on request is available in South Africa.	**TRUE**	**FALSE**	**DON'T KNOW**
13	In South Africa, a woman can obtain an abortion for *any reason* until up through *12 weeks of pregnancy*.	**TRUE**	**FALSE**	**DON'T KNOW**
14	*Between 13 and 20 weeks of pregnancy*, the only circumstance for which abortion may be granted is *if the pregnancy poses physical harm to the mother.*	**TRUE**	**FALSE**	**DON'T KNOW**
15	Abortion is illegal *beyond 20 weeks of pregnancy*.	**TRUE**	**FALSE**	**DON'T KNOW**
16	I know of at least one health facility where a woman could obtain an abortion.	**TRUE**	**FALSE**	**NOT SURE**
17	Abortion is *free* in public health facilities in South Africa.	**TRUE**	**FALSE**	**DON'T KNOW**
18	I know someone who has had an abortion	**TRUE**	**FALSE**	**NOT SURE**
19	Only *doctors* can perform abortions in South Africa.	**TRUE**	**FALSE**	**DON'T KNOW**
20	Under the apartheid government, abortion was officially illegal/against the law.	**TRUE**	**FALSE**	**DON'T KNOW**
21	When performed by a *trained medical professional*, abortions are safe procedures with minimal risk to a woman's health.	**TRUE**	**FALSE**	**DON'T KNOW**
22	When performed by an *untrained person ("backstreet")*, abortions are safe procedures with minimal risk to a woman's health.	**TRUE**	**FALSE**	**DON'T KNOW**

For the following questions, please indicate on a scale of 1 to 5 your agreement with the following statements.
1=Strongly Agree
2=Agree
3=Neutral/No opinion
4=Disagree
5=Strongly Disagree

		Strongly Agree	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*
23	I believe that safe, voluntary abortion should be *legal* and *accessible.*	1	2	3	4	5
24	**I believe abortion should be *legal* if:**					
	(a) The woman's *physical* health is endangered by the pregnancy.	1	2	3	4	5
	(b) The woman's *mental* health is endangered by the pregnancy.	1	2	3	4	5
	(c) The woman is not married.	1	2	3	4	5
	(d) The family (or woman) cannot afford to have the child.	1	2	3	4	5
	(e) The foetus shows signs of serious congenital *defect* or *malformation.*	1	2	3	4	5
	(f) The woman was *raped.*	1	2	3	4	5
	(g) The pregnancy was the result of *incest.*	1	2	3	4	5
	(h) The pregnancy would mean that the mother had to drop out of school.	1	2	3	4	5
	(i) The woman's doctor agrees to the procedure.	1	2	3	4	5
	(j) The woman chooses *on her own* to seek an abortion.	1	2	3	4	5
	(k) The pregnancy was unplanned, and the woman does not want to be pregnant.	1	2	3	4	5
25	I believe an abortion should be legal *for any reason.*	1	2	3	4	5
26	**I would *favour* the following *restrictions* on TOP:**					
	(a) Requiring that the parent(s) *be told about the abortion*, for girls under 18 years of age.	1	2	3	4	5
	(b) Requiring that the parent(s) *agree* to the girl having the abortion, for girls under 18 years of age.	1	2	3	4	5
	(c) Specifying that abortion cannot be performed for any reason *after 12 weeks of pregnancy.*	1	2	3	4	5
	(d) Specifying that abortion cannot be performed for any reason *after 16 weeks of pregnancy.*	1	2	3	4	5
	(e) Specifying that abortion cannot be performed for any reason *after 20 weeks of pregnancy.*	1	2	3	4	5
	(f) Requiring a *doctor's statement* that the *woman's health is at risk if she continues the pregnancy.*	1	2	3	4	5
	(g) Requiring a *waiting period* (5-10 days) to let the woman to 'think about it'.	1	2	3	4	5
	(h) Requiring *partner consent* for the abortion.	1	2	3	4	5
	(i) Restricting a woman to *one abortion only* in her lifetime.	1	2	3	4	5

		Strongly Agree	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*
27	I believe the South African government should be responsible for providing abortions as a part of free public health care.	1	2	3	4	5
28	**Health care providers who conscientiously object to abortion should:**					
	(e) Be allowed to *refuse* to perform abortions.	1	2	3	4	5
	(f) Be *required to tell patients* seeking abortion that they conscientiously object.	1	2	3	4	5
	(g) Be *required to refer patients* seeking abortion to a non-objecting provider.	1	2	3	4	5
	(d) Be *required to tell patients about their right* to have an abortion.	1	2	3	4	5
29	I believe that in addition to doctors, nurses should be trained to provide abortions.	1	2	3	4	5
30	I believe it is necessary to legalize/regulate some form of safe, accessible abortion in South Africa	1	2	3	4	5
30a	I think it is necessary for all doctors to know how to perform a safe abortion.	1	2	3	4	5
31	I believe that abortion is *morally unacceptable* for any reason.	1	2	3	4	5
32	I think most of my friends think abortion should be legal.	1	2	3	4	5
33	I think most of my friends think abortion should be illegal.	1	2	3	4	5
34	I think most of my family think abortion should be legal	1	2	3	4	5
35	I think most of my family think abortion should be illegal	1	2	3	4	5
36	I believe that abortions *should not be provided* for any reason.	1	2	3	4	5
37	I believe that a woman should have the right to decide for herself whether or not to have an abortion.	1	2	3	4	5
38	I believe that abortion should be a personal choice.	1	2	3	4	5
39	I am considering specialising in *Obstetrics & Gynaecology*.	1	2	3	4	5
40	I am considering specialising in *family medicine (primary care)*.	1	2	3	4	5
41	Because it is a routine medical procedure, abortion *should* be incorporated into the medical curriculum.	1	2	3	4	5
42	I would be willing to attend a *workshop* on abortion and related issues.	1	2	3	4	5
43	I would be willing to take a *class that involved training* in performing voluntary abortions and related topics.	1	2	3	4	5
44	I would be willing to attend a university whose curriculum *required* abortion training.	1	2	3	4	5
45	I feel that issues related to abortion require *more* attention in the MBChB curriculum.	1	2	3	4	5
46	I feel that issues related to abortion require *less* attention in the MBChB curriculum.	1	2	3	4	5
47	I think that most of my teachers/professors feel that	1	2	3	4	5

		Strongly Agree	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*
	abortion should be legal.					
48	I think that most of my teachers/professors feel that abortion should be illegal.	**1**	**2**	**3**	**4**	**5**
49	I would like to receive more information about abortion and abortion-related health services.	**1**	**2**	**3**	**4**	**5**
50	I intend to seek out opportunities to learn about abortion and abortion-related health services.	**1**	**2**	**3**	**4**	**5**
51	I intend to *provide* legal abortion services to women once I am qualified.	**1**	**2**	**3**	**4**	**5**
52	I would *refer* patients for abortion services, in situations where I cannot or will not provide those services myself.	**1**	**2**	**3**	**4**	**5**
53	I would only *refer* women for abortion under certain restricted circumstances (e.g., risk to mother's health; situations of rape / incest; severe foetal malformation / defect).	**1**	**2**	**3**	**4**	**5**
53a	I would *perform* an abortion in a situation of rape.	**1**	**2**	**3**	**4**	**5**
53b	I would *perform* an abortion if the pregnancy posed a risk to the mother's life.	**1**	**2**	**3**	**4**	**5**
53c	I would *perform* an abortion if the pregnancy posed a risk to the mother's mental health.	**1**	**2**	**3**	**4**	**5**
53d	I would *perform* an abortion in cases of severe foetal congenital anomaly/defect.	**1**	**2**	**3**	**4**	**5**
53e	I would *perform* an abortion if it were a medical emergency.	**1**	**2**	**3**	**4**	**5**
53f	I would *perform* an abortion under any legal circumstances.	**1**	**2**	**3**	**4**	**5**
54	I would not *perform* an abortion under any circumstances.	**1**	**2**	**3**	**4**	**5**
55	I would not *refer* a patient for abortion under any circumstances.	**1**	**2**	**3**	**4**	**5**
56	If a female patient requested an abortion, I would try to discourage her from seeking the procedure.	**1**	**2**	**3**	**4**	**5**
57	I think I would be discriminated against/stigmatized if I *provided* abortions to women.	**1**	**2**	**3**	**4**	**5**
58	I would try to convince other health care providers *not* to perform abortions.	**1**	**2**	**3**	**4**	**5**
59	Do you think that your attitudes towards abortion have changed since you started medical school?	**YES**		**NO**		**Don't Know**

60	How strongly has your family influenced your beliefs about abortion?	**Very much**	**Some what**	**Not at all**
61	How strongly have your friends influenced your beliefs about abortion?	**Very much**	**Some what**	**Not at all**
62	How strongly has your religion influenced your beliefs about abortion?	**Very much**	**Some what**	**Not at all**
63	How strongly has your medical education influenced your beliefs about abortion?	**Very much**	**Some what**	**Not at all**

Please write any questions that you may have about abortion (We will provide answers at a later date)

_____

_____

_____

_____

_____

PLEASE WRITE ANY ADDITIONAL COMMENTS HERE:

_____

_____

_____

_____

_____

THANK YOU FOR YOUR TIME!!