

**DOES GENDER IMPACT ON FEMALE DOCTORS'
EXPERIENCES
IN THE TRAINING AND PRACTICE OF SURGERY?**

By

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Submitted in partial fulfilment (25%) of the academic requirements

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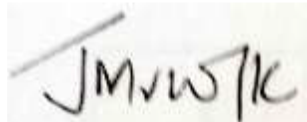
Dissertation Title: Does gender impact on female doctors' experiences in the training and practice of surgery?

As the candidate's supervisor, I agree to the submission of this dissertation for examination

Supervisor

Dr J. van Wyk

Signature:

A handwritten signature in black ink on a light-colored background. The signature appears to be 'JMVWYK' written in a cursive, slightly slanted style.

Date: 31 January 2017

DECLARATION

I, Dr Flora Umoetok declare that

(i) The research reported in this dissertation, except where otherwise indicated, is my original work.

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Signed: Dr Flora Umoetok

Date: 31 January 2017

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I thank my family members for the continuous moral support they gave me during the time that I conducted this study.

My thanks goes to the Almighty God for keeping me alive to complete this work.

ABSTRACT

Background

Surgery has been identified as a male-dominated specialty in South Africa and abroad.

Objective

This study explored how female registrars perceived the impact of gender on their training and practice of surgery.

Method

This exploratory qualitative case study collected data from a purposive sample of female registrars from a South African institution. A self-administered questionnaire was used to explore whether females perceived any benefits to training in a male-dominated specialty, their choice of mentors and the challenges that they encountered during surgical training.

Results

Thirty two female registrars (69.5%) participated in the study. The respondents were mainly South African (91%) and enrolled in seven surgical specialties. Twenty-seven (84%) respondents were satisfied with their training and skills development. Twenty four (75%) respondents had a mentor from the department. Seventeen (53%) respondents perceived having received differential treatment due to their gender and 25 (78.2%) thought that the gender of their mentor did not impact on the quality of the guidance in surgery. Challenges included physical threats to them as females from patients and disrespect, emotional threats and defaming statements from male registrars. Challenges included time-constraints for family and academic work, poor work-life balance and being treated differently due to their gender. Seventeen (53%) respondents would consider teaching in the Department of Surgery.

Conclusion

Generally females had positive perceptions of their training in Surgery. They expressed concern about finding a work-life balance. The gender of their mentor did not impact on the quality of the training but 'bullying' from male peers and selected supervisors occurred. Respondents will continue to recommend the specialty as a satisfying career to young female students.

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Part 1: The Review of Literature

Women continue to participate in labour markets on an unequal basis with men. In 2013, the male employment-to-population ratio stood at 72.2 per cent, while the ratio for females was 47.1 per cent (International Labour Organization, 2014).

It was previously not a common expectation for a woman to become a surgeon. Women who entered medicine and especially surgery were objectified and overlooked for positions of leadership. They were also marginalized for residency training. It seems as if much of these behaviours towards women academics have not yet been eradicated. In her article called "women surgeons-still in a male-dominated world", an American surgeon, Freischlag recalls being interviewed for the position of chair in the department of surgery. The dean expressed his reluctance to employ a woman in that position. She also noted that she eventually was not appointed, despite being qualified for the job at the time ^[1].

Evelyn Fox Keller, an American activist similarly pointed out in her talk at Havard University in April 2005 that gender discrimination during selection for surgical residency programmes remains widespread. Not only are women discouraged from choosing surgery as a speciality, but they are also suffering due to on-going sexual discrimination. The study which surveyed one hundred women surgeons and surgical residents concluded that sexual discrimination continues to be a persuasive problem and that 75% of women experienced gender discrimination in their surgical career (Keller and Longino 1996).

Conley (a surgical professor in USA) wrote in 1998 that male chauvinism and sexual discrimination existed in her university medical school so much that she was told she was merely a woman who finished surgical training but she was not a surgeon ^[2]. She added that this robbed women of self-esteem, dignity and respect. According to her, gender inequality resulted from stereotypic thinking, outdated behaviour and arrogant superiority ideology, coupled with stubborn resistance to change ^[2].

In their article “Perceptions of gender-based discrimination during surgical training and practice” the researchers remarked that gender discrimination existed in the field of surgery and that its impact led to only a few women having being moved to management positions in surgery. The majority of responses indicated perceived gender-based discrimination during medical school, residency, and practice and observed that gender-based discrimination came from both sexes and had a significant impact on women surgeon [3].

Most of the accounts mentioned above narrates studies from first world settings where citizen enjoy much greater freedoms while a literature review of the topic in South African context revealed limited publications. Women on our continent were traditionally restricted to engage in domestic work and child rearing and being educated or receiving schooling had been a privilege generally reserved to the men in the families. A record indicating that the problem also exists in South Africa dates back to the 19th century, when a certain Dr James Barry, born as Margaret Ann Bulkley, became known as the surgeon who performed the first successful caesarean section in the then Republic of South Africa (Cape Town). She however had to pretend to be a man in order to practice as a surgeon (du Preez, 2008).

In the absence of studies to highlight the experiences of females in previously male dominated professions, this study was conducted to explore the experiences and gender-based differences in the practice of surgery in the local context of a South African patriarchal society. It is hoped that the life experiences of females may eventually help to change the perceptions of members of the community, gatekeepers and educators in surgery to create a more supportive educational environment for all during training.

Women treated as second class citizens in Africa

While all countries in Africa have amended or passed gender sensitive laws to stem the tide of violence and prejudice against women, concern increases over enforcement of existing legislation. In fact, women in Africa remain at a higher risk of gender- based violence due to the absence of a law- enforcement strategy and lack of attention to human rights in the region. Thus the region is characterized by widespread armed conflict, political repression, poverty, and social inequality, persecution of human rights defenders and continuous exploitation and abuse of vulnerable groups. The deeply rooted traditional rules and culture of African people are to blame for most of the physical and psychological abuse of African women. For example, the practice of female genital mutilation (in spite of the harmful consequences) is still practiced on women in 28 African countries from both the Muslim and Christian faiths (Yoder, Abderrahim et al. 2004). Wife

beating is viewed as a normal part of the marital relationship (Jewkes, Levin et al. 2002) and men. Men in Africa openly conduct extra-marital affairs because the culture in most African countries encourages polygamy (Delius and Glaser 2004). African laws with the exception of Cameroun, Mauritania and South Africa does not recognize marital rape as a crime (Okereke 2006). The customary prohibition of women from acquiring property and the custom of inheriting wives as part of the deceased husband's estate has left many women poor, homeless, desperate and vulnerable to abuse (Okereke 2006). This situation is also believed to have contributed to the rapid spread of HIV/AIDS in the region.

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Part 2: The Final Study Protocol

MASTERS OF MEDICINE IN GENERAL SURGERY

RESEARCH PROPOSAL

TITLE: Does gender impact on females' experiences in the practice of surgery?

CANDIDATE: Flora Umoetok

Student Number: 212561450

Supervisor: Dr JM van Wyk

Co-supervisor: Prof TE Madiba

Purpose of Protocol

This protocol is prepared for a study in partial fulfillment of the requirement for the degree of Master of Medicine at the School of Clinical Medicine, College of Health Sciences, University of KwaZulu-Natal, Durban, South Africa.

ABSTRACT:

Surgery has been defined as a male-dominated speciality, both in South Africa and abroad (Kass, Souba et al 2006, Breier and Wildschutt 2008, Conrad, Carr et al 2010, Riska 2010, Mudaly and Van Wyk 2015, Naidoo et al 2016). The aim of this study is to explore how gender differences impact on the practice of surgery. It will focus on the experiences of females in surgery and surgical specialties. The study will explore the benefits of being in a male-dominated specialty, problems encountered due to gender, as well as possible solutions to inhibiting problems. The study will explore participants' perceptions of the impact of gender on their surgical training, surgical practice and surgical expertise; explaining benefits, challenges and issues involved in this specialty because of gender differences. Literature related to this topic from different countries/continents will help to illuminate the life experiences of females in this setting and may help to identify areas needed to change in the surgical community to create a more supportive educational environment for all during training.

INTRODUCTION:

Females often enter surgery with great difficulty and they are seldom encouraged to specialize in the discipline. It is a general perception that female surgeons have to make every effort to be accepted in this male-dominated career. Perceptions of working in a hostile environment may be discouraging to ambitious women and future female leaders.

It is therefore important for parents to give a lot of encouragement to their female children, make them study to tertiary level, stop pushing them to get married early and treat male and female children equally. This will discourage chauvinism and encourage women to achieve more.

Manifestation of the problem: Females are generally afraid to venture into the surgical specialties because they know it will be difficult (if not impossible) for them to succeed.

This problem impacts negatively on health care delivery because of the following: patients lack confidence in female surgeons; female surgeons in training are generally discouraged by their male counterparts, resulting in doubt about their ability and long-term success in the career. Some women give up surgery because they could not withstand the constant discrimination, while others persist and continue with deep regret.

Most medical schools have seen an increased intake of undergraduate female students, due to policies of equity and redress. This increase in the number of females referred to as the feminization of the medical profession may also impact on previous male strongholds such as surgery. The lack of women in the medical profession and surgery dates back to the beginning of medical science, when women in the medical field were expected to be nurses and not doctors.

LITERATURE REVIEW

It was previously not a common expectation for a woman to become a surgeon. Women who entered medicine and especially surgery were objectified and overlooked for positions of leadership. They were also marginalized for residency training. It seems as if much of these behaviours towards women academics have not yet been eradicated. In her article called "women surgeons-still in a male-dominated world", an American surgeon, Freischlag recalls being interviewed for the position of chair in the department of surgery. The dean expressed his reluctance to employ a woman in that position. She also noted that she eventually was not appointed, despite being qualified for the job at the time ^[1].

Evelyn Fox Keller, an American activist similarly pointed out in her talk at Havard University in April 2005 that gender discrimination during selection for surgical residency programmes remains widespread. Not only are women discouraged from choosing surgery as a speciality, but they are also suffering due to on-going sexual discrimination. The study which surveyed one hundred women surgeons and surgical residents concluded that sexual discrimination continues to be a persuasive problem and that 75% of women experienced gender discrimination in their surgical career (Keller and Longino 1996).

Conley (a surgical professor in USA) wrote in 1998 that male chauvinism and sexual discrimination existed in her university medical school so much that she was told she was merely a woman who finished surgical training but she was not a surgeon ^[2]. She added that this robbed women of self-esteem, dignity and respect. According to her, gender inequality resulted from stereotypic thinking, outdated behaviour and arrogant superiority ideology, coupled with stubborn resistance to change ^[2].

Most of the accounts mentioned above are recounts of studies in first world countries where citizen enjoy much greater freedom of speech. Very little literature about the phenomenon could be found in the developing context. Women on our continent were traditionally restricted to

engage in domestic work and child rearing and being educated or receiving schooling had been a privilege generally reserved to the men in the families. A record indicating that the problem also exists in South Africa dates back to the 19th century, when a certain Dr James Barry, born as Margaret Ann Bulkley, became known as the surgeon who performed the first successful caesarean section in the then Republic of South Africa (Cape Town). She however had to pretend to be a man to be accepted as a surgeon (du Preez, H.M 2008). In the absence of studies to highlight the experiences of females in previously male dominated professions, this study hopes to contribute to this gap by exploring the experiences and gender-based differences in the practice of surgery in the local context of a South African patriarchal society. It is hoped that the life experiences of females (including Africans) may eventually help to change the perceptions of members of the community, gatekeepers and educators in surgery to create a more supportive educational environment for all during training.

LIMITATIONS AND CHALLENGES

It is not easy to change the perception that surgery is a male-dominated speciality, despite the increase entry of females into medicine ^[4]. In the African contexts a man is supposed to be the 'superior sex' and therefore fit to achieve more than females in general, that is why the world is viewed as a 'man's world'. Culture, tradition and even some religions seem to support masculine superiority and feminine apparent inferiority and this affects the male-dominated specialties like surgery adversely. This perception is 'primitive' and needs to be changed to prevent females from having problems in surgery and other male-dominated specialties.

Benefits: By studying this problem deeply, we will surely arrive at ways of solving this problem, correcting wrong perceptions and thus changing the world at large. This will make the world a better place to live in, as women will be more comfortable in any profession/speciality they choose.

Politically, in South Africa at this moment, the government condemns all types of discrimination-racial, gender, etc. so this study corresponds to what the ruling party advocates for in terms of 'anti-discrimination policy'. The South African constitution guarantees the right to equality and also gives protection to all and discourages all forms of unfair discrimination (South African constitution 1996).

This study will encourage today's women to work harder academically, socially, politically and otherwise. The assumption that women are the 'weaker sex' and should therefore be excluded

from certain professions should be a thing of the past. Being wives and mothers should not prevent women from succeeding in their careers. Women form the majority of our African population, so women succeeding means success of the majority of Africans. Currently, most families are run by women (single parents). This makes women empowerment crucial to the development of our society. This concept will liberate our people from poverty and improve the standard of living on our continent at large.

Women treated as second class citizens in African Culture:

While all countries in Africa have amended or passed gender sensitive laws to stem the tide of violence and prejudice against women, concern increases over enforcement of existing legislation. In fact, women in Africa remain at a higher risk of gender- based violence due to the absence of a law- enforcement strategy and lack of attention to human rights in the region. Thus the region is characterized by widespread armed conflict, political repression, poverty, and social inequality, persecution of human rights defenders and continuous exploitation and abuse of vulnerable groups. The deeply rooted traditional rules and culture of African people are to blame for most of the physical and psychological abuse of African women. For example, the practice of female genital mutilation (in spite of the harmful consequences) is still practiced on women in 28 African countries from both the Muslim and Christian faiths ^[5]. Wife beating is viewed as a normal part of the marital relationship^[6] and men in Africa openly conduct extra-marital affairs because the culture in most African countries encourages polygamy ^[7]. African laws with the exception of Cameroun, Mauritania and South Africa does not recognize marital rape as a crime ^[8]. The customary prohibition of women from acquiring property and the custom of inheriting wives as part of the deceased husband's estate has left many women poor, homeless, desperate and vulnerable to abuse ^[8]. This situation is also believed to have contributed to the rapid spread of HIV/AIDS in the region.

Research Proposition

The great influx of women to medicine will impact on the number of women who will choose surgery as a specialty ^[9]. Such women should be encouraged although they complain of long working hours and insufficient time for their families ^[1, 10-15]. Men in surgery also need more flexible working hours; women can help them solve this problem if more women choose surgery. The constitution legislates equity for all previously disadvantaged groups including women and

people with disability and has increased awareness and policy frameworks to redress such perception^[16]. There is however an implementation gap and this study will investigate the current experiences of female registrars to understand their life experiences while training in the discipline.

Research Question

The purpose of this study was to investigate the current experiences of females in general and other subspecialties of surgery to explore how they perceive the quality of their training and exposures in the discipline. It also explores whether they have adequate mentors during training and their perceptions of how gender impact on their experiences during specialization.

The specific research questions that the study aimed to address include

1. What are the experiences and perceptions of post graduate female students at the UKZN about the impact of gender on their training and practice in surgery?
2. What challenges do they face during their training?

METHODS

Design:

This study will use a mixed-method research design to investigate the experiences of female registrars registered between 1-4 years in Surgery at the Nelson R Mandela School of Medicine and hospitals in the Durban functional region. Phenomenological study (Atkinson 1992)

Both quantitative and qualitative data will be collected by means of a questionnaire and interview. The questionnaire will explore the impact on females' experience in the training and practice of surgery.

Sampling & Setting:

A purposive sampling of female surgical registrars who are enrolled as PG students and registrars in the Department of General Surgery and Surgical subspecialties in the Durban Functional region will be identified as data sources/or people who could provide details on this phenomenon.

Data Collection:

Data will be collected through interviews/ questionnaires (Bekele, Reissig, Looler and Hinz 2011)

Questions to be posed were whether or not they thought that their training in surgery had been adequate, whether or not they received sufficient exposure in theory and practical skills. They will also be asked whether they received mentoring from seniors and whether they thought that the gender impacted on the quality of their mentoring relationship.

Females will be asked whether they were treated differently due to their gender, whether they had specific challenges during their training and whether they perceived that their gender impacted on their relationships with their patients.

Data will be captured in an Excel spreadsheet for ease of analysis and answers to each question were calculated. Qualitative data from open- ended questions and the interviews will be transcribed verbatim and thematically analyzed (Berdie and Anderson, 1974, Barque and Clark, 1992).

Ethical approval and gatekeepers permissions was obtained from the BREC (Ref: BE004/15) of the UKZN. The results are reported in Part 3.

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Part 3: A submission ready manuscript.

Does Gender Impact on Female Doctors' Experiences in the Training and Practice of Surgery?

ABSTRACT

Background

Surgery has been identified as a male-dominated specialty in South Africa and abroad.

Objective

This study explored how female registrars perceived the impact of gender on their training and practice of surgery.

Method

This exploratory qualitative, case study collected data from a purposive sample of female registrars from a South African institution. A self-administered questionnaire was used to explore whether females perceived any benefits to training in a male-dominated specialty, their choice of mentors and the challenges that they encountered during surgical training.

Results

Thirty two female registrars participated in the study. The respondents were mainly South African (91%) and enrolled in seven surgical specialities. Twenty-seven (84%) respondents were satisfied with their training and skills development. Twenty four (75%) respondents had a mentor from the department. Seventeen (53%) respondents perceived having received differential treatment due to their gender and 25 (78.2%) thought that the gender of their mentor did not impact on the quality of the guidance in surgery. Challenges included physical threats to them as females from patients and disrespect, emotional threats and defaming statements from male registrars. Challenges included time-constraints for family and academic work, poor work-life

balance and being treated differently due to their gender. Seventeen (53%) respondents would consider teaching in the Department of Surgery.

Conclusion

Generally females had positive perceptions of their training in Surgery. They expressed concern about finding a work-life balance. The gender of their mentor did not impact on the quality of the training but 'bullying' from male peers and selected supervisors occurred. Respondents will continue to recommend the specialty as a satisfying career to young female students.

INTRODUCTION

Globally, the entry of female students into medical schools has increased dramatically.^[17] An escalation in female enrolment has been reported in South Africa over the past two decades.^[18, 19] The consequent increase in the number of women enrolled in the health care sector resulted in the term 'pink collar medicine'.^[20] This generated discourse around representation according to gender in professional medical and academic organisations. It has also raised questions about how values, ascribed to the different genders will impact on the psycho-social practice and/or business aspects of medicine.^[21] Debates such as these have given rise to a focus on gender-based discrimination in medicine, and attempt to understand the barriers that affect the integration of women in medicine. The under-representation of women in prestigious, high income specialities and their sluggish progression to leadership on professional bodies and in academic medicine^[10, 22] have been widely researched.

Medicine in general is dominated by men and the resultant patriarchal culture gives rise to structural, attitudinal and behavioural obstacles.^[23] Gender discrimination remains widespread and has been reported during selection for surgical residency programmes in the USA.^[24]

Women find it difficult to get selected into managerial positions, even when they are suitably qualified.^[10, 25] A study reported that women surgeons in the USA were just regarded as 'women who completed surgical training' but not truly recognized as surgeons.^[24]

One of the first documented accounts of discrimination against women in medicine dates back as far as the 19th century. The account details the story of Dr James Barry, born as Margaret Ann Bulkley, who became well known as the surgeon who performed the first successful caesarean section in the Republic of South Africa. Bulkley reportedly pretended to be a man in order to practice as a surgeon.^[26]

Most studies of female doctors' experiences and perceptions reported on the experiences of practitioners from developed countries. Very little has been recorded about this phenomenon in the developing country context, thus the need for this study.

METHODOLOGY:

This mixed-method, exploratory case study was conducted to describe the experiences of female registrars at the Nelson R Mandela School of Medicine of the University of KwaZulu-Natal (UKZN), Durban, South Africa. The study population was a purposive sample ^[27] of all female registrars (or residents) in the first to fourth years of training, who were exposed to workplace-based service training at public hospitals in the Durban functional region. These participants, as female doctors, were in the best position to provide details of their perceptions on surgical training at the institution.

Quantitative and qualitative data were collected by means of a self-administered questionnaire to explore the perceptions of female respondents towards the influence of gender on their experience and clinical practice. Using a self-administered questionnaire ^[28], respondents were asked to indicate the extent of their agreement with statements thought to impact on their experiences during surgical training, the adequacy of practice opportunities, availability and gender preferences relating to mentors and the challenges during training. Participants were also asked about (i) specific challenges encountered during their training, (ii) their perceptions of being treated differently based on their gender, and (iii) their perceptions of the impact of gender on their relationships with their patients and their colleagues. The questions also explored whether gender had influenced the quality of their training in surgery.

Data were collected during August- December 2015 and captured in an Excel spreadsheet. The quantitative data were analysed descriptively while the qualitative data from open-ended questions were transcribed verbatim and analysed independently to identify themes.^[29] All respondents were informed of the purpose of the study, their right to withdraw at any stage but they were encouraged to complete the questionnaire. Ethical approval and gatekeeper's permissions were obtained from the Biomedical Research Ethics Committee of the University of KwaZulu-Natal (BE 004/15).

RESULTS

Demographical profile of respondents

A total of 32 (69.5%) female registrars were purposively invited to participate from the total number of female registrars (N=46) enrolled in the Surgical disciplines. The median age of the

respondents was 36 years (std dev= 7.3). The racial breakdown included Black (n=17, 63%); White (n=3, 9%) and Indian females (n=12, 38%). Twenty nine (91%) respondents were South African citizens and 3 (9%) were foreign nationals. Table 1 illustrates the demographic and specialty profile of the respondents.

Table 1: Respondent demographics and specialty

Speciality	Race						Total	%
	Black	%	Indian	%	White	%		
Cardio-Thoracic	2	6%	0	0%	0	0%	2	6%
ENT Surgery	1	3%	2	6%	0	0%	3	9%
General Surgery	4	13%	5	16%	1	3%	10	31%
Neuro-Surgery	5	16%	0	0%	0	0%	5	16%
Ophthalmology	5	16%	0	0%	0	0%	5	16%
Orthopaedic Surgery	1	3%	0	0%	0	0%	1	3%
Paediatric	1	3%	2	6%	1	3%	4	13%
Plastic Surgery	1	3%	0	0%	1	3%	2	6%
Total	20	63%	9	28%	3	9%	32	100%

All respondents (100%) were satisfied with both the theoretical and practical components as well as quality of their post-graduate training in surgery. Twenty seven (84%) respondents perceived their practical training to develop their skills as successful surgeons to be sufficient. Twenty four (75%) respondents indicated having identified a mentor in their department. All these respondents believed that the gender of their mentor did not impact on the quality of their training. Thirteen (41%) respondents had identified a male mentor; eight (25%) had identified a female mentor and 11 (32%) had no mentor. Seven (22%) respondents believed that the gender of their mentor had made a difference in the type and quality of the mentorship that they had received during training.

The reported challenges of the respondents included physical threats from patients to their safety (n=11; 34%) and emotional threats (13; 40%) from peers and supervisors. Sixteen (50%) respondents experienced bullying that included defaming statements about them made in their absence by male registrars, being disrespected through behaviour and abusive language and being told that surgery was not for females. All respondents perceived that surgery demanded much time which impacted on their time allocations to family responsibilities. They felt guilty for trying to balance their service and family commitments. The service commitments also

impacted on the time allocated to their academic studies with many complaining of long working hours and difficulty in completing the research component of their post graduate studies. Other challenges included 'biased' rotations; non-exposure to interesting cases and discrimination due to gender. The respondent reported being 'treated at times like a gender quota'. Another remarked that others were being favoured over herself as she is a 'foreigner'.

Despite feelings of persecution, all the respondents remained adamant that young female students should not be afraid to pursue surgery as a specialty. They believed that female doctors should expect some obstacles during training. They, however, warned that the pursuit of a surgical specialty will impact on females' decisions, such as whether to delay marriage and children or whether to consider marriage at all. Overall, the respondents were positive that choosing surgery was the right thing to do. Seventeen (53%) respondents indicated an interest in teaching and serving as female role models in the Department of Surgery.

DISCUSSION

All respondents in our study were satisfied with the quality of the registrar training that they received. Similar observations had been made in the literature. A Canadian study reported on women surgeons' satisfaction with their career, despite noting the compromises involved.^[30] A study from the USA reported that female doctors were satisfied with their careers in surgery. All the females in that study were, however, unmarried and childless, worked more hours and did more calls than their female counterparts in other disciplines.^[31]

Twenty two percent of the respondents in our study believed that the gender of their mentors had made an impact on the quality of their training. The absence of female mentors is believed to be a major contributing factor to the persistent male culture and resultant barrier to career advancement of female academics in surgery.^[11] In a Canadian study, Seemann et al^[10], similarly reported that 89% of the respondents had identified a male mentor but that 54% had wished for better mentorship.

Eleven respondents in our study reported having no formal mentoring. A study in the USA similarly reported an absence of mentors for 50% of the women surgeons. A study of female

paediatric surgeons in the USA concluded that female role models were necessary to recruit more female doctors into surgical specialties.^[32] The participants of that study however ascribed their continued commitment to surgery to having excelled in attributes such as perseverance, drive and having a positive outlook.^[33] These observations support our findings in this study where women stated their commitment to surgery despite the challenges discussed in this study.

Women leaders in surgery reported discrimination as occurring throughout their careers including medical school, in residency, fellowship and as staff surgeons.^[10] Fifty six percent of the respondents in that study also cited gender as the most common source of discrimination, and less commonly cited were age and race and culture^[10]. Likewise in the present series female doctors reported many challenges which ranged from physical and emotional threats to disrespect, bullying and discrimination. Of additional interest was the fact that respondents were willing to encourage female medical students to pursue careers in surgery but highlighted the need to anticipate challenges.

All respondents thought that they had made sacrifices to their family life in order to continue their commitment to the discipline. Female doctors have a need to balance their career and family life. This has been done successfully by women surgeons in Canada despite the reports that it involved a number of compromises.^[30] The compromises included decisions about having children in institutions that lacked maternity policies with 23% reporting inadequate time for breastfeeding; 74% breastfeeding for less than 4 months, 61% returning to work while still breastfeeding and 55% resorting to live-in child care.^[30] Forty five percent of the females took the main responsibility for their households and eight percent had a paid home-maker.^[30] In a comparative study of female surgeons in Japan, USA and Hong Kong Kawase *et al.* pointed to the added pressure imposed by culture on women's roles in their families.^[34]

This exploratory case was conducted at a single institution in KwaZulu-Natal. Respondents were all registrars, represented 7 subspecialties and various racial and cultural groups. The views of the females in this study cannot be generalised to other institutions, but it is recommended that researchers compare the context of this setting to their own to benefit from the lessons.

There is still much to do before genuine ‘feminist’ transformation becomes a reality in the discipline. Men still out-number women in key positions in the medical profession, surgery is not an exception. Institutional, social and cultural factors collude to discriminate against women in medicine.

CONCLUSION

This study has demonstrated that gender has an impact on female doctors’ experiences in the training and practice of surgery. Despite challenges, all respondents remained adamant that young female students should not be afraid to pursue their study of surgery. They believed that female doctors should expect some obstacles during training. Respondents warned that choosing to specialise in surgery will ultimately impact on decisions regarding personal choices, such as whether to get married or delay marriage and whether/not to have children. The problem of male domination and discrimination against women in surgery can be addressed by an increased awareness of the phenomenon. It is also recommended that departments review the working hours to ensure some degree of balance for surgeons and their families.

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Part 4: Appendices

Appendix 1: South African Journal of Surgery: Author Guidelines

Accepted manuscripts that are not in the correct format specified in these guidelines will be returned to the author(s) for correction, and will delay publication.

AUTHORSHIP

Named authors must consent to publication. Authorship should be based on substantial contribution to: (i) conception, design, analysis and interpretation of data; (ii) drafting or critical revision for important intellectual content; and (iii) approval of the version to be published. These conditions must all be met (uniform requirements for manuscripts submitted to biomedical journals; refer to www.icmje.org).

CONFLICT OF INTEREST

Authors must declare all sources of support for the research and any association with a product or subject that may constitute conflict of interest.

RESEARCH ETHICS COMMITTEE APPROVAL

Provide evidence of Research Ethics Committee approval of the research where relevant.

PROTECTION OF PATIENT'S RIGHTS TO PRIVACY

Identifying information should not be published in written descriptions, photographs, and pedigrees unless the information is essential for scientific purposes and the patient (or parent or guardian) gives informed written consent for publication. The patient should be shown the manuscript to be published. Refer to www.icmje.org.

ETHNIC CLASSIFICATION

References to ethnic classification must indicate the rationale for this.

MANUSCRIPTS

Shorter items are more likely to be accepted for publication, owing to space constraints and reader preferences.

Original articles not exceeding 3 000 words, with up to 6 tables or illustrations, are usually observations or research of relevance to surgery. References should preferably be limited to no more than 15. Please provide a structured abstract not exceeding 250 words, with the following recommended headings: *Background, Objectives, Methods, Results, and Conclusion*.

Scientific letters/short reports, which include case reports, side effects of drugs and brief or negative research findings should preferably be 1500 words or less, with 1 table or illustration and no more than 6 references. Please provide an accompanying abstract not exceeding 150 words.

Editorials, Opinions, etc. should be about 1000 words and are welcome, but unless invited, will be subjected to the SAJS peer review process.

Review articles are rarely accepted unless invited.

Letters to the editor, for publication, should be about 400 words with only one illustration or table, and must include a correspondence address.

Obituaries should be about 400 words and may be accompanied by a photograph.

MANUSCRIPT PREPARATION

Refer to articles in recent issues for the presentation of headings and subheadings. If in doubt, refer to 'uniform requirements' - www.icmje.org.

Manuscripts must be provided in **UK English**.

Qualification, affiliation and contact details of ALL authors must be provided in the manuscript and in the online submission process.

Abbreviations should be spelt out when first used and thereafter used consistently, e.g. 'intravenous (IV)' or 'Department of Health (DoH)'.

Scientific measurements must be expressed in SI units except: blood pressure (mmHg) and haemoglobin (g/dl). Litres is denoted with a lowercase 'l' e.g. 'ml' for millilitres). Units should be preceded by a space (except for %), e.g. '40 kg' and '20 cm' but '50%'. Greater/smaller than signs (> and <) should be placed immediately preceding the relevant number, i.e. 'women >40 years of age'. The same applies to \pm and $^{\circ}$, i.e. '35 \pm 6' and '19 $^{\circ}$ C'.

Numbers should be written as grouped per thousand-units, i.e. 4 000, 22 160...

Quotes should be placed in single quotation marks: i.e. The respondent stated: '...'

Round **brackets** (parentheses) should be used, as opposed to square brackets, which are reserved for denoting concentrations or insertions in direct quotes.

General formatting

The manuscript must be in Microsoft Word or RTF document format. Text must be single-spaced, in 12-point Times New Roman font, and contain no unnecessary formatting (such as text in boxes, with the exception of Tables).

ILLUSTRATIONS AND TABLES

If tables or illustrations submitted have been published elsewhere, the author(s) should provide consent to republication obtained from the copyright holder.

Tables may be embedded in the manuscript file or provided as '**supplementary files**'. They must be numbered in Arabic numerals (1,2,3...) and referred to consecutively in the text (e.g. 'Table 1'). Tables should be constructed carefully and simply for intelligible data representation. Unnecessarily complicated tables are strongly discouraged. Tables must be cell-based (i.e. not constructed with text boxes or tabs), and accompanied by a concise title and column headings. Footnotes must be indicated with consecutive use of the following symbols: * † ‡ § ¶ || then ** †† ‡‡ etc.

Figures must be numbered in Arabic numerals and referred to in the text e.g. '(Fig. 1)'. Figure legends: Fig. 1. 'Title...'

All illustrations/figures/graphs must be of **high resolution/quality**: 300 dpi or more is preferable but images must not be resized to increase resolution. Unformatted and uncompressed images must be attached as '**supplementary files**' upon submission (not embedded in the accompanying manuscript). TIFF and PNG formats are preferable; JPEG and PDF formats are accepted, but authors must be wary of image compression. Illustrations and graphs prepared in Microsoft Powerpoint or Excel must be accompanied by the original

workbook.

REFERENCES

Authors must verify references from the original sources. *Only complete, correctly formatted reference lists will be accepted.* Reference lists must be generated manually and **not** with the use of reference manager software.

Citations should be inserted in the text as superscript numbers between square brackets, e.g. These regulations are endorsed by the World Health Organization,^[2] and others.^[3,4-6]

All references should be listed at the end of the article in numerical order of appearance in the **Vancouver style** (not alphabetical order). Approved abbreviations of journal titles must be used; see the List of Journals in Index Medicus.

Names and initials of all authors should be given; if there are more than six authors, the first three names should be given followed by et al. First and last page, volume and issue numbers should be given.

Wherever possible, references must be accompanied by a digital object identifier (DOI) link and PubMed ID (PMID)/PubMed Central ID (PMCID). Authors are encouraged to use the DOI lookup service offered by [CrossRef](#).

Journal references:

Price NC, Jacobs NN, Roberts DA, et al. Importance of asking about glaucoma. *Stat Med* 1998;289(1):350-355. [<http://dx.doi.org/10.1000/hgjr.182>] [PMID: 2764753]

Book references:

Jeffcoate N. *Principles of Gynaecology*. 4th ed. London: Butterworth, 1975:96-101.

Chapter/section in a book:

Weinstein L, Swartz MN. Pathogenic Properties of Invading Microorganisms. In: Sodeman WA jun, Sodeman WA, eds. *Pathologic Physiology: Mechanisms of Disease*. Philadelphia: WB Saunders, 1974:457-472.

Internet references:

World Health Organization. *The World Health Report 2002 - Reducing Risks, Promoting Healthy Life*. Geneva: World Health Organization, 2002. <http://www.who.int/whr/2002> (accessed 16 January 2010).

Other references (e.g. reports) should follow the same format:

Author(s). Title. Publisher place: publisher name, year; pages.

Cited manuscripts that have been accepted but not yet published can be included as references followed by '(in press)'.

Unpublished observations and personal communications in the text must not appear in the reference list. The full name of the source person must be provided for personal communications e.g. '...(Prof. Michael Jones, personal communication)'.

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A PDF proof of an article may be sent to the corresponding author before publication to resolve remaining queries. At that stage, **only** typographical changes are permitted; the corresponding author is required, having conferred with his/her co-authors, to reply within 2 working days in order for the article to be published in the issue for which it has been scheduled.

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Please notify the Editorial Department of any contact detail changes, including email, to facilitate communication.

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As part of the submission process, authors are required to check off their submission's compliance with all of the following items, and submissions may be returned to authors that do not adhere to these guidelines.

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2. The submission has not been previously published, nor is it before another journal for consideration.
3. The text complies with the stylistic and bibliographic requirements in **Author Guidelines**.
4. The manuscript is in Microsoft Word or RTF document format. The text is single-spaced, in 12-point Times New Roman font, and contains no unnecessary formatting.
5. Illustrations/figures are high resolution/quality (not compressed) and in an acceptable format (preferably TIFF or PNG). These must be submitted as 'supplementary files' (not in the manuscript).
6. For illustrations/figures or tables that have been published elsewhere, the author has obtained written consent to republication from the copyright holder.
7. Where possible, references are accompanied by a digital object identifier (DOI) and PubMed ID (PMID)/PubMed Central ID (PMCID).
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9. The research was approved by a Research Ethics Committee (if applicable)
10. Any conflict of interest (or competing interests) is indicated by the author(s).

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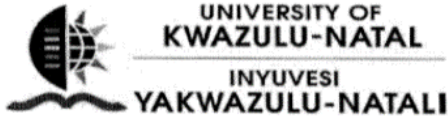
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Appendix 2: Protocol Approval



04 December 2014

Dr J van Wyk
Post Graduate Teaching
School of Clinical Medicine

Dear Dr van Wyk

MED PROTOCOL: "Does gender impact on females' experiences in the practice of surgery"
Student: Dr, F Umoetok, student number: 212561450 (Surgery)

I am pleased to inform you that the abovementioned study has been approved.

Please note:

- The Academic Leader: Research must review any changes made to this study.
- The study may not begin without the approval of the Biomedical Research Ethics Committee.

May I take this opportunity to wish the student every success with the study.

Yours sincerely

for Dr VS Singaram
Academic Leader School Research (Acting)
School of Clinical Medicine

CC Professor T E Madiba
Dr F Umoetok

Biomedical Research Ethics Committee
Westville Campus

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 1910 - 2010 
100 YEARS OF ACADEMIC EXCELLENCE

Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

Appendix 3: Ethical Approval



13 May 2015

Dr Flora Umoetok
P O Box 59118
Umbilo
4075
floraumoetok@yahoo.com

Dear Dr Umoetok

PROTOCOL: Does gender impact on females' experiences in the practise of surgery? (212561450)
REF: BE004/15

EXPEDITED APPLICATION

A sub-committee of the Biomedical Research Ethics Committee has considered and noted your application received on 17 December 2014.

The study was provisionally approved pending appropriate responses to queries raised. Your responses received on 05 May 2015 to queries raised on 20 March 2015 have been noted by a sub-committee of the Biomedical Research Ethics Committee. The conditions have now been met and the study is given full ethics approval.

This approval is valid for one year from 13 May 2015. To ensure uninterrupted approval of this study beyond the approval expiry date, an application for recertification must be submitted to BREC on the appropriate BREC form 2-3 months before the expiry date.

Any amendments to this study, unless urgently required to ensure safety of participants, must be approved by BREC prior to implementation.

Your acceptance of this approval denotes your compliance with South African National Research Ethics Guidelines (2015), South African National Good Clinical Practice Guidelines (2006) (if applicable) and with UKZN BREC ethics requirements as contained in the UKZN BREC Terms of Reference and Standard Operating Procedures, all available at <http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>.

BREC is registered with the South African National Health Research Ethics Council (REC-290408-009). BREC has US Office for Human Research Protections (OHRP) Federal-wide Assurance (FWA 678).

The sub-committee's decision will be **RATIFIED** by a full Committee at its meeting taking place on 09 June 2015.

We wish you well with this study. We would appreciate receiving copies of all publications arising out of this study.

Yours sincerely

Professor J Tsoka-Gwegweni
Chair: Biomedical Research Ethics Committee

Biomedical Research Ethics Committee
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Website: <http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>

1910 - 2010
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Appendix 4: Data collection Questionnaire

Section A: Demographics: Age, SA Ethnic group

<u>Section B:</u> Question/Statement	Yes	No
1. Do you think your training in surgery has been adequate?	Y	N
2. Did it involve theory and practical components	Y	N
3. Do you believe that you are receiving sufficient exposure/ experience in developing your skills as a surgeon?	Y	N
4. Who, in your department has taken responsibility to mentor you? _____--		
5. Is this a senior person in the department?		
6. Indicate the gender of your mentor?	M	F
7. Do you think that the gender of your mentor makes a difference in the way in which you are guided?	Y	N
8. Do you think that the gender of your mentor makes a difference in the quality of the training that you receive?	Y	N
9. Do you feel as if you are treated differently in surgery because you are female?	Y	N
10. Are you still happy with surgery as your choice of career?	Y	N
	Y	N

11. Do you think your race impacts on your interactions with patients in the wards	Y	R
12. Have there been occasions where you perceived yourself as being physically threatened during your training/practice Explain:	Y	N
13. Have there been occasions where you felt emotionally threatened during your training/practice Explain:	Y	N
14. List the three major challenges you faced in your surgical training? a) _____ b) _____ c) _____		
15. What advice will you give other females, wishing to choose surgery as a career? a) _____ b) _____ c) _____		
16. Would you like to come back and teach in this department?	Y	N