Experiences of mothers who are registrars in a department of anaesthesiology and the negotiations of their work-life balance

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg in partial fulfilment of the requirements for the degree of Master of Medicine in the branch of Anaesthesiology.

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Declaration

I, Nisaa Bismilla declare that this research report is my own unaided work. It is being submitted for the Degree of Master of Medicine in the branch of Anaesthesiology at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.

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Abstract

Background

The feminisation of medicine has resulted in a change in the demographic profile of the medical workforce. Female registrars are faced with gender-specific challenges of juggling multiple roles and responsibilities as mothers, professionals, students and spouses. The change in gender roles and constructs has led to concerns of work-life balance in female physicians. The aim of this study is to explore the experiences of work-life balance in registrar mothers and the assets with which they equip themselves in order to navigate the world of specialisation.

Methods

An exploratory, qualitative research design was employed in which in-depth, focused, open-ended one-on-one interviews were conducted with registrar mothers in the Department of Anaesthesiology at the University of the Witwatersrand between August 2019 and October 2019. Registrar mothers were asked about their experiences of work-life balance and how they negotiate these experiences. The interviews were audio recorded and transcribed verbatim and an inductive method of coding using Braun and Clark's thematic analysis was applied. A hierarchical framework of data analysis was applied.

Results

The rich data obtained from the interviews suggest that registrar mothers in the specialisation program experienced gender biases, maternal discrimination, high levels of stress, the perception of unequal opportunities for academic progression and work-life imbalance. Despite these challenges, these women make sense of their living world by constructing an identity with a multitude of dichotomous roles. This sense-making process allowed these registrar mothers to balance the stressors, work-life challenges and guilt they faced against the reward of professional excelling, and the multifaceted mother that they become as a result of personal fulfilment. They construct and rely on a strong support system from which

they gain sustenance that enables them to succeed. Through this journey they mother themselves into becoming more than they imagined at the conception.

Conclusion

This study demonstrates the complex, dynamic nature of juggling motherhood and professional development and the armamentarium employed by registrar mothers in order to negotiate the challenges they face. It demonstrates how registrar mothers make sense of their lived reality and the reconstruction of their ideological identity. Their process of sense-making and negotiation allows them to excel in multiple spheres of life.

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Position statement

I am a married 30-year-old female registrar with a 19-month-old baby boy in my third year of training in the department. I had my son in the first year of my registrar training, after writing the primary examination.

My perception of being a registrar mother is a complex one. I gain a sense of accomplishment, purpose, enjoyment, fulfilment and reward from my specialisation training and my role as a doctor working in the public sector. However, I feel a constant struggle with work-life balance and feel great amounts of pressure in meeting the demands of both work and family. Some of the factors contributing to this are long work hours, after work responsibilities such as attendance of tutorials, and requirements to work at outreach hospitals such as Klerksdorp for prolonged durations. At times, this results in conflict and job dissatisfaction.

I believe that gender equality is identifying and equally respecting the different and unique needs, priorities, strengths of men and women, and would love to have a work environment that understands that my needs are different, and celebrates the strengths I bring to the workplace, such as empathy, patience and nurturing.

This study is important to me as I would like to allow others to gain insight into the experiences, challenges, strengths and skillset that working mothers have. I believe that if people are aware of the diversity of needs and assets that women bring to the workplace, we could adapt the environment to one which is best suited for the growth and development of each individual. In addition, I would like to remove the stigma associated with being a registrar mother.

Statement

This research was done in partial fulfilment of a Master of Medicine degree.

The Research Report consists of a literature review, draft article, study proposal and appendices. The study proposal is included for background reference and is not for examination.

The formatting of this Research Report complies with the University of the Witwatersrand's Style Guide for Theses, Dissertations and Research Reports. The formatting of the draft article may differ from the author guidelines of the BMC Medical Education Journal, the journal to which it is intended to be submitted, in order to comply with the university's style guide.

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Abbreviations

Wits	University of the Witwatersrand

Section 1: Review of the literature

1.1 Introduction

In the latter half of the twentieth century, the number of women graduating from medical school across the globe and in South Africa increased (1), with women constituting 43% of the medical doctors in South Africa in 2020 (2). The change in the demographic profile of doctors has brought with it gender-specific challenges with more female registrars juggling multiple roles and responsibilities as mothers, professionals, students and spouses. The shift in gender roles and constructs has led to concerns about work-life balance in female physicians (3). Female physicians have reported experiences of maternal discrimination, gender bias, unequal opportunities for professional progression and an unfriendly training environment (4). Despite these challenges, women in anaesthesiology are succeeding in negotiating the challenges they face in the specialisation program.

This literature review will explore the evolution of women's role in the workplace, motivators for employment, closing the gender gap, the theories analysing parental employment, a healthy workplace and work-life balance. This will be followed by a discussion of the impact of the feminisation of medicine, barriers to women's' success in medicine, stress, job satisfaction and burnout, mental health, and the effects of non-standard work hours on the family dynamic. Lastly, the experiences of physician mothers and the experiences of female registrars in the South African context are discussed.

1.2 The evolution of women's role in the workplace

Female employment in South Africa has increased from 23% in 1960 (5) to 44% in 2017 (6). Women's role in medicine has paralleled this trend with the so-called "feminisation" of medicine (1, 7). The number of women entering and graduating from medical school in South Africa and across the globe has been on the rise over the last two decades (8, 9). From 1999 − 2014 there was a growth in female enrolment into medicine from 49.7 − 62.2%, with the number of female medical students now surpassing males nationally (10). These changes have occurred alongside fundamental restructuring in the family model in order to accommodate

for non-stereotypical gender-based family roles (11, 12). As a result, women's traditional role as that of a carer, (11) and men's role as bread-winner has had to be reconstructed. The changes in family dynamics have brought with it the growing concern of finding the balance between professional responsibilities, family care and work-life balance (11-13).

1.3 Motivators of employment

Self-actualisation is the realisation or fulfilment of one's talents and potential, considered as a drive present in everyone (14). There are a number of theories exploring the basic needs of individuals. According to the Theory of Self Determination (15), an individual has three basic needs to ensure personal well-being, growth and development. These include the need for autonomy (freedom from excessive control), kinship (feeling of belonging) and competence (conquering of challenges) (16). Maslow's Hierarchy of Needs (14) states that individuals are motivated to accomplish certain needs, which are described in a 5-stage hierarchal, pyramidal model, as depicted in Figure 1. When one need is met, the individual then aims to accomplish the next one and so on. Maslow's Hierarchy of Needs (14) has been adapted for the work environment (17). In the adapted version, wages form the basic need, training is viewed as a reinforcing a sense of safety, and the tiers ascend as a sense of belonging, recognition in one's job, and a need for new challenges, as depicted in Figure 1 (17). According to the adaptation of Maslow's Hierarchy of Needs (17), gainful employment affords one fulfilment of their basic needs (18). Some of the benefits of paid employment include a sense of self-worth, personal development and mental stimulation (11). Hence employment can also be viewed as a resource from which one can attain support and as an impedance to non-work stressors (11), and this highlights the importance of employment in fulfilling ones' needs.

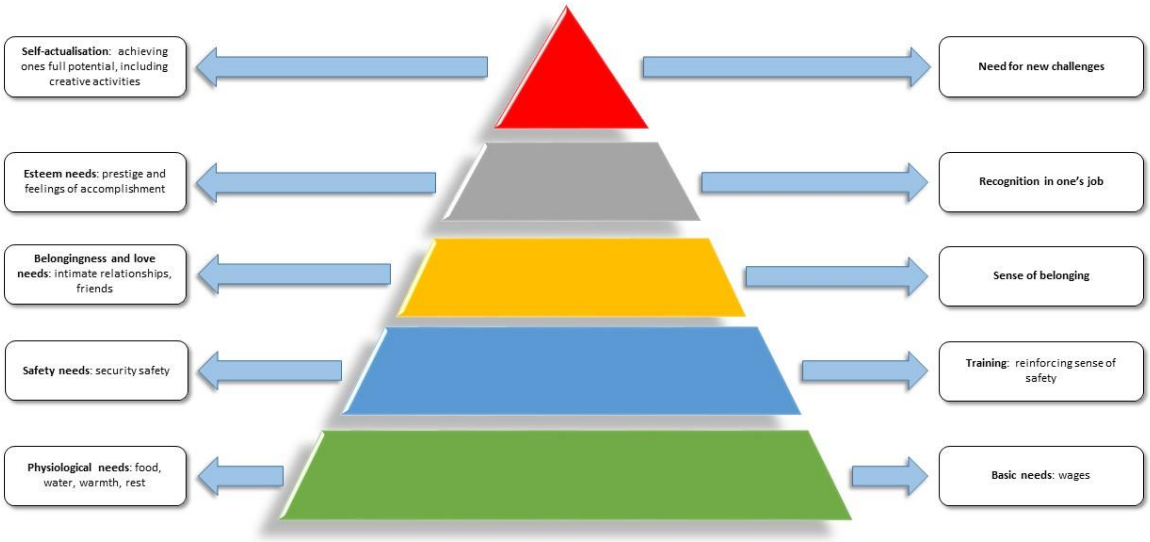

Figure 1: Maslow's Hierarchy of needs with comparative adaptation to the workplace (14, 17)

1.4 Closing the gender gap

In the South African labour market in 2019, the gap between male and female employment was still relatively large, at 12.3%(19), highlighting the gender disparities experienced. The disparities in employment are largely reflective of the different gender roles. In South Africa, women devote more than twice as much time to household responsibilities in comparison to men (20). The cultural norms and traditional views of gender roles are some of the many factors limiting women's professional opportunities and progression.

1.5 Theories analysing parental employment

Maternal employment has been associated with positive self-image and self-worth, an improved sense of personal fulfilment, personal development (21), elevated self-esteem and mental stimulation (11). This notion is in keeping with The Role Accumulation Theory (22) that states the accumulation of multiple social roles simultaneously is associated with greater "life satisfaction and psychological well-being", and a greater "meaning in life". Additionally, a positive mood as a result of one domain, for example family, can spill over into the work domain, leading to

greater productivity and positive interactions with others leading to role fulfilment (23). On the other hand, working parents juggling multiple roles has been associated with life dissatisfaction, stress and role conflict (24). These findings are in keeping with the Role Strain hypothesis (25), which states that the accumulation of multiple roles is related to increased stress and psychological distress.

1.6 A healthy workplace and work-life balance

The World Health Organization (26) defines a healthy workplace as "…a place where everyone works together to achieve an agreed vision for the health and well-being of workers and the surrounding community. It provides all members of the workforce with physical, psychological, social and organizational conditions that protect and promote health and safety…" (26) therefore emphasising the importance of cultivating an environment that supports and promotes a healthy work-life balance. Work-life balance is defined as an "individual perception that work and non-work activities are compatible and promote growth in accordance with an individual's current life priorities." (27). A perceived positive work-life balance has been associated with a better sense of job fulfilment, life satisfaction and positive affect. A negative perception of work-life balance has been associated with elevated levels of anxiety, stress and depression (28). The importance of work-life balance in the United Kingdom has been emphasised by the Labour government through interventions in the form of legislature and policies which have been devised to be friendlier to parents in allowing them to combine work and family care. In 2000, the Work-Life Balance Campaign (29) promoted flexible working hours for parents and those caring for the elderly. Fagnani (30) stated "many people feel torn between work and family not just because their households increasingly juggle competing responsibilities, but also because job expectations and parenting standards have become more demanding". Working hours for the general population have also increased over the last 20 years. For a working couple the working year has increased by 700 hours, and 30% of people report being "exhausted by the end of the week" (31, 32).

In a study performed in the United Kingdom, 67 in-depth qualitative interviews were conducted with mothers of children between the ages of 18 months and 15 years, working both part-time or full-time, and with various levels of authority in

different sectors. For the most part, the encounters of balancing work and family were viewed unfavourably, with long working hours, inflexible working environments, partners who were not understanding, a lack of “informal support” and persistent gender bias being the major factors seen as problematic (28). Women involved in the working sector experience the strain of household care differently to men as they usually shoulder the majority of the household responsibilities (33). Family responsibilities are the major reason for women’s discontinuation of participation in the labour market. As a result, women gravitate towards jobs of lower career progression or less hours, or higher qualified women will opt to delay progression because higher positions place greater strain on time management and result in conflict (34). Despite women’s greater involvement in the working sector, the assumption that women should be the primary carer continues to exist (12).

Doctors, particularly women with children, reported a lack of work-life balance, making it challenging to cope with personal pressures (35). Doctors who were particularly dissatisfied with their work-life balance felt that they had a lack of freedom in choosing to spend more time with family due to a hospital culture that did not allow it in order to have a successful career (36). Female doctors were at an increased risk of developing burnout as a result of work-life imbalance (37).

1.7 Impact of the feminisation of medicine

The feminisation of medicine has been viewed dichotomously. The growth in female doctors has led to an unequal distribution of women in “family-friendly” specialities such as general practice and psychiatry (38). One of the implications of this is that the effects of part-time work and maternity leave are unequally distributed amongst different specialities. In addition, female physicians are more likely to work part-time than their male colleagues (39) and fewer women work out of regular working hours (40). Research has also shown that female physicians plan on retiring earlier than their male colleagues (40). Women with children produce less research and have fewer publications than men with children or women without children (41).

On the other hand, women convey a different skill set, are more likely to engage in patient-centred communication and offer psychological and emotional support. Women treat their patients with more empathy, nurturing and relatedness (42) The "patient-focused" treatment style of female practitioners' results in more favourable health outcomes for their patients (43). A Dutch and American study exploring patients' perceptions of female doctors found that the patients of female doctors were more assertive, disclosed more biomedical and psychosocial information, were less irritated and less anxious (44).

1.8 Barriers to women's career success in medicine

In a study conducted in 2004 in South Africa (1), it was shown that female students are starting to outperform their male counterparts, however, the increase in enrolment and graduation of female physicians has not translated into more female physician registrations. There is still a marked disparity between the number of women graduating, and the number of women in medical practice (1). A possible reason for this is that the medical profession does not lend itself to having a healthy work-life balance, and advancement in a professional sense is often at the expense of family or an enormous amount of stress in order to achieve success in both domains (1). There is a clear differentiation in genders in different specialities, with females being a minority in the "harder" specialities such as general surgery (1). According to Dobson (45), females tend to gravitate towards the "softer" specialities with more flexible working hours such as anaesthesiology, psychiatry, public health and pathology. In 2007, Hudson et al (46) found that domestic commitments were one of the most important factors affecting female doctor's career choices. Wildschut (8) stated that "it is impossible for women doctors to reconcile familial responsibilities and work demands." Domestic commitments were one of the most important factors influencing female doctors' career choices (45, 47, 48).

Part-time specialisation training is not a freely available option, despite research indicating a demand, especially amongst female trainees (49), therefore, further isolating women with family responsibilities (46). Even in the specialities that are viewed as favourable to women, there is still very little provision for "flexible training". In fact, the medical training programme is so inflexible in accommodating

women that many institutions have no formal contingency plan for managing pregnancies in their staff (1, 50).

1.9 Stress, job satisfaction and burnout

Physicians experience a greater amount of stress (3) and lower levels of job satisfaction than the general population (51). Some of the most common stressors for residency trainees include high workloads, lack of sleep, challenging patients, inconducive learning environments, information overload and career planning (52). Sources of stress for the anaesthesiologist include the need to act quickly and precisely, critical decision making, the risk of adverse events, high patient demands, challenging ethical situations, end of life care, family counselling, periods of labour-intensive patient care, risk of litigation and patient suffering (51). Female anaesthesiologists are at particularly high risk of emotional exhaustion (53). These chronic stressors have detrimental consequences on the physical, mental and psychological health of the physician (52), leading to burnout (54) and depression (55).

One of the major factors influencing the quality of work-life is job satisfaction. Individuals who are satisfied in their work environment are shown to be more productive and innovative (51), and the patients of satisfied doctors are more compliant with treatment and more satisfied with their care (56). Ramirez et al (57) found that job satisfaction was a protective factor against mental strain from chronically high levels of stress. Factors that lead to improved job satisfaction include: good relationships with colleagues and patients, recognition at work, autonomy and intellectual stimulation. The main determinants of job dissatisfaction in anaesthesiologists include professional stress, the nature of their personalities, and the nature of their jobs. Other risk factors leading to job dissatisfaction include: “over-committed” personality type with high expectations, poor social support, poor control over workload, interference with work-life balance, low levels of resources and inexperienced employees. With these factors in mind, it becomes increasingly evident that the training programme lends itself to having dissatisfied employees (51).

Job satisfaction in the general population in the European context related to gender has been contradictory, with some studies showing woman to have a lower level of job satisfaction, postulated to be due to greater home responsibilities or “discrimination in the workplace” (58), while others show no difference (51).

The relationship between stress, job satisfaction and burnout has been well investigated (51) and studies have shown that for the same amount of stress, high levels of job satisfaction are associated with a lower incidence of burnout and improved mental health (59, 60). Patients of doctors who are experiencing burnout are shown to be less adherent to their treatment (51).

In 2015, Van der Walt et al (61) conducted a study in the Department of Anaesthesiology at the University of the Witwatersrand which showed that the registrars in the department had a significantly higher incidence of stress and burnout, 21%, in comparison with 17.9% in the general population (62). International studies show that 25% of anaesthesiologists are at risk of burnout (63). Van der Walt et al (61) found that the demographic group at the greatest risk of burnout was young female registrars.

1.10 Mental health

Women have a higher lifetime risk of developing depression than men, and the incidence in females is twice that of males (64). Paralleling this, studies show a higher rate of depression amongst female residents than males (65). One of the possible reasons for this phenomenon is that women may be more vulnerable to the stressors of family life (66). In 2007, Lin et al (67) showed that the incidence of depression among general surgery residents was higher in residents who were single in comparison to those who were married or divorced.

In the general population, marriage appears to be protective against mental illness and being single was a risk factor for emotional unwellness (68). Medical professionals who are married are likely to benefit from the emotional, social and even financial support from their spouses, therefore, enabling them to cope better with the stressors associated with specialist training. (67) This would suggest that having a family structure would be protective against mental illness.

Parental depression has been shown to have adverse effects on children's behaviour, development and cognition (69, 70). There is a higher incidence of maternal versus paternal depression. The incidence of depression of both parents is highest in the first year of their child's life, it then plateaus for the remainder of the child's life and decreases slightly as the child gets older (71). Maternal mental illness and depression, in particular, have led to poor growth in young children and depressed mothers tend to have a more critical, aggressive and less empathetic parenting style (69). Women are particularly at risk of depression in the postpartum period due to hormonal changes and the lifestyle adaption that comes along with being a new parent.

1.11 Effects of non-standard work hours on the family dynamic

Due to the nature of the medical profession, and the need for around the clock service delivery, there is a high prevalence of evening and night shifts and weekend hours, the so-called "non-standard" working hours. Li et al (72) found that in labourers in the food and commercial industry working non-standard hours, in particular, the night shift and rotating shifts have been implicated in conditions leading to poor mental health, depression, sleep disorders, chronic physical ill-health, and neurotic disorders. Working non-standard hours has been associated with chronic fatigue and anxiety (73). These atypical work schedules have led to the growing concern on their impact on children living in these homes. Chronic fatigue can lead to a poor parenting style, which can result in a home environment that is inconducive to empathetic caring (74). Working night shifts have been associated with a greater incidence of depression in both mothers and fathers. Chronic fatigue associated with non-standard working hours was linked to higher levels of work-family conflict and marital discourse particularly in women (75). Parents occupied in non-standard working hours are not available to participate in the fundamentally important activities, such as helping with homework (76). There is conflicting evidence regarding the quantity of time parents working non-standard schedules spend with their children. Wight et al (76) found that parents working non-standard hours were more likely to be home when their children return from school, while in contrast, Kimmel and Connely (77) found that these parents spend less time with their children. The burden on a family is felt more severely when the

mother is the parent involved in non-standard working hours (75). Children brought up in a home where one or both parents work non-standard hours have more “behavioural and emotional” problems (72). It must however be noted that confounding factors such as poorer socio-economic status may influence these findings, and the negative impact was less evident in the wealthier socio-economic class (75).

A three-year longitudinal study performed in the general population found the rate of divorce increased from 7 − 11% in couples when one spouse worked weekends or night shifts over that period. It was also found that of the couples that stayed married, the initiation of shift work had introduced more marital difficulties (78). Of interest was Presser’s (19) findings in 2000, where a higher incidence of divorce was found in couples where the wives worked weekends and night-shifts, in comparison to couples where the wife worked regular day-time hours. These findings have been attributed to having a greater degree of disruption in the family routine when the woman of the home is engaged in work outside of the home environment (19, 75). There is an increased incidence of marital discord and displeasure in the marriages of medical professionals. Possible reasons for this include the long working hours, including overnight shifts, which leave less time for family and leisure activities (52). The findings are, however, inconsistent, as other studies found no difference in couple marital dissatisfaction and quality of marital relationships where either spouse worked non-standard hours (79).

1.12 Experiences of physician mothers

In an online qualitative survey exploring female physician experiences in 2018, the following themes emerged:

- maternal discrimination, with physician mothers reporting feelings of being ill-treated or expected to deliver unrealistically high levels of performance, as a “punishment” for taking maternity leave or taking time to express breastmilk during working hours
- gender inequality, with women describing a feeling of gender-based performance standards, where they were held to a higher level of

expectation than their male colleagues in order to prove their dedication and capability

- unequal pay
- fewer prospects for professional progression
- lack of emotional and structural support in the peripartum period and work-family conflict with a battle to find caregivers available to care for their children with their long work hours, and the lack of flexibility in working hours to allow them to balance work and family responsibilities better (4).

One of the driving factors identified behind maternal discrimination was the culture of medicine, whereby there is a notion that mothers cannot be good doctors and vice versa. One should postpone starting a family as it destroys one's professional career and the failure to do so implies that one does not appreciate the worth of their profession. The "structure of medicine" also does not afford women flexible hours, and work shifts are often long, with no facilities available to express breastmilk (4).

Cuthbert (80) reported that the majority of the male and female participants struggled to maintain a healthy balance in their lives and eventually experienced burnout after years of continuous neglect of themselves and their families. One participant in the study provided insight into the experiences of female registrars with families and reflected as follows:

> *I think we would all agree that children need quality time with their parents and to me it is utterly unreasonable that I practically cannot be both a dedicated parent and pursue my career goals. At WITS it seems one must significantly suffer. As a parent, the academic side will invariably then suffer because I put my child above everything else (80).*

It was also implied that the academic expectations of excellence were found to be unrealistic as the department was not accommodating to women by being more "mum-friendly".

1.13 Experiences of South African female registrars

Women, in particular, are adversely affected by the registrar training programme. (80) Female registrars were at higher risk of emotional exhaustion (81). Pregnancy is also a challenging undertaking by medical professionals, with a higher rate of pregnancy-related complications seen in medical students and practitioners, such as premature labour, placenta abruptio and low birth weight (82). Saloojee and Rothberg (81) found that female registrars feel that the structure of the training program was not sensitive towards their needs and they felt as though they did not have the freedom to fall pregnant. In fact, 71% of female registrars reported that they had been actively discouraged from falling pregnant.

As the proportion of the female labour force grows exponentially, the effects of dual-earning households on family dynamics and family well-being become increasingly important. The feminisation of medicine has led to the evolution of clinical practice, with subsequent shifts in women's roles. Women's pursuit of professional success has also led to the idea of "bridging the gender gap" in the medical and academic world (83). The experiences of female registrars juggling multiple roles and the armamentarium that they utilise are relevant to our setting and there is a lack of research available that explores these concepts.

1.14 Summary

This literature review explores the impact of the feminisation of medicine and gender-specific challenges experienced by female physicians in the medical profession. It explores their motivators for employment and the relationship between work-life imbalance, stress, job satisfaction and burnout, all of which are shown to have a higher incidence in female physicians. With women making up 43% of the medical workforce in South Africa, insight into their gender-specific challenges and experiences becomes increasingly relevant in order to build a healthy workplace that caters to their needs.

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Section 2: Author’s guidelines

BMC Medical Education

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BMC Medical Education is an open access journal publishing original peer-reviewed research articles in relation to the training of healthcare professionals, including undergraduate, postgraduate, and continuing education. The journal has a special focus on curriculum development, evaluations of performance, assessment of training needs and evidence-based medicine.

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2.5 Criteria

Research articles should report on original primary research, but may report on systematic reviews of published research provided they adhere to the appropriate reporting guidelines which are detailed in our editorial policies. Please note that non-commissioned pooled analyses of selected published research will not be considered. Studies reporting descriptive results from a single institution will only be considered if analogous data have not been previously published in a peer reviewed journal and the conclusions provide distinct insights that are of relevance to a regional or international audience.

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2.6 Preparing your manuscript

The information below details the section headings that you should include in your manuscript and what information should be within each section.

Please note that your manuscript must include a 'Declarations' section including all of the subheadings (please see below for more information).

2.6.1 Title page

The title page should:

- present a title that includes, if appropriate, the study design e.g.:
    - "A versus B in the treatment of C: a randomized controlled trial", "X is a risk factor for Y: a case control study", "What is the impact of factor X on subject Y: A systematic review"
    - or for non-clinical or non-research studies a description of what the article reports
- list the full names and institutional addresses for all authors
    - if a collaboration group should be listed as an author, please list the Group name as an author. If you would like the names of the individual members of the Group to be searchable through their individual PubMed records, please include this information in the “Acknowledgements” section in accordance with the instructions below
- indicate the corresponding author

2.6.2 Abstract

The Abstract should not exceed 350 words. Please minimize the use of abbreviations and do not cite references in the abstract. Reports of randomized controlled trials should follow the CONSORT extension for abstracts. The abstract must include the following separate sections:

- **Background:** the context and purpose of the study

- **Methods:** how the study was performed and statistical tests used
- **Results:** the main findings
- **Conclusions:** brief summary and potential implications
- **Trial registration:** If your article reports the results of a health care intervention on human participants, it must be registered in an appropriate registry and the registration number and date of registration should be in stated in this section. If it was not registered prospectively (before enrollment of the first participant), you should include the words 'retrospectively registered'. See our editorial policies for more information on trial registration

2.6.3 Keywords

Three to ten keywords representing the main content of the article.

2.6.4 Background

The Background section should explain the background to the study, its aims, a summary of the existing literature and why this study was necessary or its contribution to the field.

2.6.5 Methods

The methods section should include:

- the aim, design and setting of the study
- the characteristics of participants or description of materials
- a clear description of all processes, interventions and comparisons. Generic drug names should generally be used. When proprietary brands are used in research, include the brand names in parentheses
- the type of statistical analysis used, including a power calculation if appropriate

2.6.6 Results

This should include the findings of the study including, if appropriate, results of statistical analysis which must be included either in the text or as tables and figures.

2.6.7 Discussion

This section should discuss the implications of the findings in context of existing research and highlight limitations of the study.

2.6.8 Conclusions

This should state clearly the main conclusions and provide an explanation of the importance and relevance of the study reported.

2.6.9 List of abbreviations

If abbreviations are used in the text they should be defined in the text at first use, and a list of abbreviations should be provided.

2.7 Declarations

All manuscripts must contain the following sections under the heading 'Declarations':

- Ethics approval and consent to participate
- Consent for publication
- Availability of data and materials
- Competing interests
- Funding
- Authors' contributions
- Acknowledgements
- Authors' information (optional)

Please see below for details on the information to be included in these sections.

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Ethics approval and consent to participate

Manuscripts reporting studies involving human participants, human data or human tissue must:

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- include the name of the ethics committee that approved the study and the committee's reference number if appropriate

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If your manuscript does not report on or involve the use of any animal or human data or tissue, please state "Not applicable" in this section.

Consent for publication

If your manuscript contains any individual person's data in any form (including any individual details, images or videos), consent for publication must be obtained from that person, or in the case of children, their parent or legal guardian. All presentations of case reports must have consent for publication.

You can use your institutional consent form or our consent form if you prefer. You should not send the form to us on submission, but we may request to see a copy at any stage (including after publication).

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Availability of data and materials

All manuscripts must include an ‘Availability of data and materials’ statement. Data availability statements should include information on where data supporting the results reported in the article can be found including, where applicable, hyperlinks to publicly archived datasets analysed or generated during the study. By data we mean the minimal dataset that would be necessary to interpret, replicate and build upon the findings reported in the article. We recognise it is not always possible to share research data publicly, for instance when individual privacy could be compromised, and in such instances data availability should still be stated in the manuscript along with any conditions for access.

Data availability statements can take one of the following forms (or a combination of more than one if required for multiple datasets):

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- The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.
- All data generated or analysed during this study are included in this published article [and its supplementary information files].
- The datasets generated and/or analysed during the current study are not publicly available due [REASON WHY DATA ARE NOT PUBLIC] but are available from the corresponding author on reasonable request.
- Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.
- The data that support the findings of this study are available from [third party name] but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly

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Hao Z, AghaKouchak A, Nakhjiri N, Farahmand A. Global integrated drought monitoring and prediction system (GIDMaPS) data sets. figshare. 2014. http://dx.doi.org/10.6084/m9.figshare.853801

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The datasets generated during and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS].[Reference number]

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2.8 References

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2.9 Figures, tables and additional files

See General formatting guidelines for information on how to format figures, tables and additional files.

Section 3: Draft article

Experiences of registrar mothers in an anaesthesiology department and their negotiations of work-life balance

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Key words: Work-life balance, feminisation of medicine, working mothers

Abstract

Background

The feminisation of medicine has resulted in a change in the demographic profile of the medical workforce. Female registrars are faced with gender-specific challenges of juggling multiple roles and responsibilities as mothers, professionals, students and spouses. The change in gender roles and constructs has led to concerns of work-life balance in the lives of female physicians. The aim of this study was to explore the experiences of work-life balance in registrar mothers and the assets with which they equip themselves in order to navigate the world of specialisation.

Methods

An exploratory, qualitative research design was employed in which in-depth, focused, open-ended one-on-one interviews were conducted with registrar mothers in the Department of Anaesthesiology at the University of the Witwatersrand between August 2019 and October 2019. Registrar mothers were asked about their experiences of work-life balance and how they negotiate these experiences. The interviews were audio recorded and transcribed verbatim and an inductive method of coding using Braun and Clark's thematic analysis was applied. A hierarchal framework of data analysis was applied.

Results

The rich data obtained from the interviews suggest that registrar mothers in the specialisation program experienced gender biases, maternal discrimination, high levels of stress, unequal opportunities for academic progression and work-life imbalance. Despite these challenges, these women make sense of their living world by constructing an identity with a multitude of dichotomous roles. The sense-making process allowed these registrar mothers to balance the stressors, work-life challenges and guilt they faced against the reward of professional excelling, and the multifaceted mother that they become as a result of personal fulfilment. They construct and rely on a strong support system from which they gain sustenance

that enables them to succeed. Through this journey they mother themselves into becoming more than they imagined at the conception.

Conclusion

This study demonstrates the complex, dynamic nature of juggling motherhood and professional development and the armamentarium employed by registrar mothers in order to negotiate the challenges they face. It demonstrates how registrar mothers make sense of their lived reality and the reconstruction of their ideological identity. The process of sense-making and negotiation allows them to excel in multiple spheres of life.

Introduction

From ancient Egyptians times, women have had a place in the medical world. The ancient Egyptians worshipped Isis, the goddess of medicine. Hieroglyphic representations of women performing surgery and practicing medicine decorate the walls of tombs celebrating the place of women in the medical world (84). This role has come a long way since then, yet there remains a considerable disparity in gender roles.

In the latter part of the twentieth century, the number of women entering the medical profession, both in South Africa and internationally, has increased (1, 5, 85). In South Africa in 2014, more than 62.2% of medical students were women (10) and in 2015, women accounted for 40% of the total number of qualified medical doctors (86). This has led to the coining of the term: “feminisation” of medicine (8). Despite women’s increased involvement in the medical field, there has not been a redistribution of family responsibilities (87), with women still shouldering the majority of child care responsibilities. Females are more adversely affected by work-life imbalance in comparison to their male colleagues (66, 88). In a study conducted amongst young female physicians, achieving work-life balance was a priority amongst 91% of respondents (89). Traditionally women have opted to delay starting a family until completion of their speciality training, but recent research shows that more women plan on having children during their training years (90). Female physicians report that their careers were an obstacle to child-bearing (91) and were less likely to excel in their professional careers due to family responsibilities (92).

Part-time specialisation training is not a freely available option, despite research indicating a demand, especially amongst female trainees. (49) This results in further isolating women with family responsibilities (46). Even in the specialities that are viewed as favourable to women, there is still very little provision for “flexible training”. In fact, the medical training programme is so inflexible in accommodating women that many institutions have no formal contingency plan for managing pregnancies in their staff (1, 8, 50). The medical profession does not lend itself to having a healthy workplace balance, and advancement in the professional sense is often at the expense of family or an enormous amount of

stress in order to achieve success in both domains (8). Domestic commitments were one of the most important factors influencing female doctors career choices (45, 47).

Despite the numerous attributes such as a particular skill set, patient-centred communication style and emotional and psychological support that women bring to the profession (93), a woman's role in the medical field has not always been well received. Wynn (84) reports that in 1873 Edward Clark, a Harvard Medical School professor, wrote that the medical education of women would result in "monstrous brains and puny bodies".

Studies exploring the experiences of physician mothers identified key themes such as "maternal discrimination", gender inequality, unequal pay, fewer prospects for professional progression, a lack of emotional and structural support in the peripartum period and work-family conflict (4). Halley et al (4) concluded that physician mothers perceived the culture of medicine to be one of the driving factors behind maternal discrimination. In this study, participants felt there is a notion that mothers cannot be good doctors, and vice versa and that one should postpone starting a family as it destroys one's professional career. Failure to do so implies that one does not appreciate the worth of their profession.

The feminisation of medicine and the changing gender constructs have created new gender-specific challenges faced by female doctors. The experiences and negotiations of these women have not been fully explored in the South African context. The aim of this study was to explore the experiences and negotiations of work-life balance amongst registrar mothers in the Department of Anaesthesiology at the University of the Witwatersrand (Wits).

Methodology

This exploratory qualitative research study was approved by the Human Research Ethics Committee (Medical) (M190441) of Wits and other relevant authorities.

The study was conducted amongst registrar mothers in the Department of Anaesthesiology between August 2019 and October 2019. In-depth, focused, open-ended one-on-one interviews were conducted with registrar mothers who

were identified with the Anaesthesia Mama's group, an informal WhatsApp group created by the Anaesthesia Wellness Committee as a supportive platform for registrar and consultant mothers. Registrars were invited to participate via this group, and thereafter a snowball sampling method was used. Registrar mothers who were in the immediate postpartum period on maternity leave were excluded.

Registrar mothers who agreed to participate in the study gave written consent for participation in the interview as well as for the voice recordings. Interviews were recorded with the aid of two voice recording devices, to ensure clarity in the event of a device malfunction. All the interviews were conducted by one author (NB) at a time and place that was deemed most convenient for participants. Venues included the participants' homes, the registrar study room or library rooms. NB attended a training session with a psychologist in preparation for managing potential emotional distress in participants during the interview, and how to manage interview bias in order to prevent data contamination. Most interviews were conducted over a period of two days due to the pressing demands of the registrar mother, which included both work and family responsibilities. The duration of each interview ranged between 60 − 75 minutes. Interviews were conducted in a semi-structured method, with broad open-ended questions followed by a clue-on-cue system to further explore emergent ideas. Demographic data were collected, followed by open-ended questions such as "Tell me about your children? How do you juggle registrar training and motherhood? What are your biggest challenges? How has motherhood changed your perspective on being a doctor? What motivates you?" Participants were encouraged to speak freely and openly, and non-verbal cues were used to facilitate the conversation. Fieldnotes recorded important words and phrases during and after the interview. These were compiled retrospectively as a narrative account of the experience.

Interviews were then transcribed by NB, and authenticity and accuracy of transcriptions were ensured by relistening to the recordings and correlating it with the transcripts. Each participant was allocated a code and only NB had access to the coding sheet. The transcripts and fieldnotes were anonymised and contemporaneously analysed by the authors and constant feedback was used to adjust the interview guide in order to attain rich data.

Seven in-depth interviews were conducted to explore the experiences of registrar mothers. The first five interviews were analysed contemporaneously and a constant comparison process was applied. As a result, the emergent themes from these interviews led to the modification of the interview guide to explore the emerging themes more deeply. This included more in-depth probing questions regarding the family constructs and support network of these working women, the power dynamics within the work and home environment, and the psychological impact of the multiple roles in which they find themselves. An additional two interviews were conducted in order to explore the initial themes in greater depth. The modification of the interview guide afforded participants a better opportunity to discuss the psychology of the roles they occupy, and the negotiations which they navigate.

Participants were assigned a code and the data were transcribed and coded concurrently and reviewed by the authors to establish when data saturation had been achieved, which was deemed after seven interviews. Many of the registrar mothers became emotional during the interview, but none of them required further referral or support at the end of the interview.

Braun and Clark's (94) inductive method of coding was utilised for the thematic analysis and a hierarchal coding framework was employed.

Trustworthiness was ensured by using the appropriate Guba and Lincoln's (95) criteria as shown in Table 1.

Table 1: Methods used to ensure trustworthiness

Method	**Criteria**
Semi-structured prolonged engagement, open-ended interviews	Credibility person confidentiality, independent
Voluntary participation and the freedom to withdraw from study	Credibility
Comprehensive descriptions of methodology, data collection and fieldwork	Credibility, dependability, transferability
Encouragement of open, honest responses	Credibility
Person triangulation	Credibility
Ensuring accurate transcriptions	Credibility, conformability, authenticity
Independent supervisor and researcher data analysis,	Credibility, confirmability
Researcher and supervisor feedback sessions	Credibility, confirmability

Results

Common to every interview was a constant sense of juggling by the participant. Interviews frequently had to be postponed, rescheduled, or discontinued abruptly and continued at a later stage due to pressing demands from work or family, or sometimes both. As a result, many of the interviews were conducted over two days, with an average duration of an hour to an hour and fifteen minutes. Interviews conducted in the home environment were punctuated with the voices of curious and interested children asking mom for help, chatting happily or just playing contently. Despite this, participants were eager, enthusiastic and determined to participate and have their voices heard and the interviews were characterised by a sense of commitment. Participants spoke openly and candidly about their working experiences and there was an immediate sense that the registrar mothers appreciated the idea of having their voices heard and an opportunity to tell their story in a safe space.

The image that emerged from analysis of the data was that a registrar mothers life appears similar to that of a playground and her place in on the see-saw. At the fulcrum of the see-saw, upon which the supporting lever rests, is the resilience and strength of the registrar mother. At opposing ends of the see-saw are forces in tension, with the registrar mother's family and support system at one end, and the multifaceted registrar's identity as a professional doctor and mother at the other end. At the centre of the lever is the registrar mother, balancing precariously on the see-saw beam, shifting her weight from one end to the other, controlling the up and down motion and ensuring harmony. The motion of a see-saw requires an up and down, give and take negotiation. In order for both ends to function in unity, they both have to participate in this balancing act. The danger with a see-saw though is that if one force is no longer in tension the entire system comes crashing down and this is the vital negotiation. The themes that emerged were:

- It takes a village to raise a child
    - support system
    - adaptive academic programs
- Reflections in the mirror:
    - role as a mother

    - work-life balance
    - maternal well-being
- The balancing act
    - role as a doctor
    - the matriarch
    - gender constructs
- Women of steel
    - identity of a working mother.

Figure 2: The balancing act

It takes a village to raise a child

Support system

A fundamental asset of any working mother is her support system. At the one end of the see-saw is the support system of the registrar mother, constructed from the relationships that the registrar mother has established, from which she derives strength. Mother registrars are supported by a network of husbands, nannies,

grandparents, friends and mentors that enables these mothers to pursue their career goals. The capacity of the registrar to build and create this network is a reflection on their resourcefulness and in some instances, a celebration of the extended family construct. One registrar commented, “We need a hell of a strong support structure to help us get through this” (P3), emphasising the importance of constructing a strong support system and the dependence these registrar mothers have on their support.

This network becomes a bitter-sweet interaction, however, with registrar mothers being eternally grateful for their support system, but simultaneously feeling guilty about the burden of responsibility placed on their support system. Husbands of registrar mothers often also have very demanding jobs leading to less flexibility. One registrar mother described herself as a single mom for the first six months of her baby’s life while her husband was working and studying in another city. She describes this experience as extremely emotionally taxing, “I was dying” (P1), highlighting some of the setbacks and emotional sequelae experienced by mother registrars as a result of not having a strong support system.

There was an underlying sense of mistrust in allowing nannies and husbands to take responsibility for child care and some participants admitted to struggling to delegate responsibilities to their partners. At the root of struggle were two main ideas. Primarily the registrar mothers inherently believed that caring for their child was their responsibility and allowing someone else to take that responsibility felt incorrect. A participant commented that “… as a mom, the majority (of childcare) falls on you” (P6). Another participant commented, “This is your baby” (P1), emphasising her ideas that caring for her baby was her responsibility, but also in the colloquial sense that her life situation was her responsibility to navigate and one she would have to do independently. A secondary struggle was accepting the loss of control by allowing someone else in their support network to take control. In relationships where husbands featured as the primary caregiver for their child, there was also a sense of sadness in the registrar, with the underlying tone of the interview reflecting a sense of loss and wanting. A loss in the role of the mother they would have liked to be and a desire for a different dynamic.

Husbands featured not only as a fundamental partner in childcare but also strongly as emotional support, encouraging and championing participants to stay motivated. Their profound influence and continuous support were highlighted by the following: “So if it wasn't for him, and if I was with someone else, and they didn't push me, I don’t think I would have come back” (P6). These relationships are a source of replenishment and sustenance to the registrar mother and from which they derive strength to become more than they believed they were at the beginning of their parenting and specialisation journey and are integral to maintain the balance and strength of the see-saw.

An adaptive academic program

These women’s struggles for work-life balance is deeply rooted in a desire to maintain and build important relationships with their families, patients, colleagues and friends and create a playground that cultivates a healthy space in which this can be accomplished. The “mommy program” is a nickname for the extended surgical program offered at Wits to surgical registrars who are mothers, where they have the option to extend their speciality training in exchange for shorter days, with less overtime responsibilities. Participants were in favour of this idea, as they felt it represented the perfect marriage of one’s desire for professional development and family aspirations. One participant succinctly and eloquently said, “This can’t be your life it has to be part of your life” (P7). It would also allow the department an opportunity to harness these women’s resilience and drive for progression. Registrar mothers viewed this as a negotiation of constructing a playground that allows women the opportunity to excel in different spheres of life.

Reflections in the mirror

Role as a mother

The experience of motherhood was described as the highlight of their lives. Mothers gushed when asked about their children, their faces lit up and they could not contain their pride and happiness when speaking about their children. The sense of elation motherhood had given them was almost tangible. In the same tone, the majority of participants spoke about their careers with the same passion and fondness and reported having a love for their jobs and finding fulfilment in

their profession. The multifaceted identity of the registrar mother is what rests at the other end of the see-saw.

Work-life balance

Registrar mothers have a unique situation in which they find themselves in the middle of what they described as a “trifecta of absenteeism”, the combination of working, studying and night shift/weekend overtime, contributing to this heightened sense of guilt. The majority of registrars reported that they struggled to achieve work-life balance with a constant tug of war between work and home. One participant stated rather emphatically, “Being a doctor has stolen my life” (P3), further emphasising the undertone of loss in the different spheres of one’s life. There was also a sense of guilt for the perceived impact that the training program has had on their children. Their concerns were vast and included causing feelings of abandonment, premature exposure to emotionally difficult concepts such as death, illness and loss and causing feelings of anger and resentment in their children.

Contrasting these feelings of guilt, motherhood had given registrars a new sense of purpose, a deeper sense of appreciation and responsibility, and fuelled their determination and drive to complete the specialisation program. Participants are more motivated to specialise in order to allow their children to have better opportunities. Working and specialising also allowed them to be role models for their children, brought them a sense of fulfilment and allowed them to be better mothers, setting the example of working hard and teaching their children the importance of respecting and encouraging a woman’s desire for professional fulfilment. “The overcoming of this whole registrar time is a huge lesson for not only me, but that I will pass on to them.” (P4) At the epicentre of this negotiation was the registrar mother, trying to balance setting a good example for her children, showing them the importance of hard work, contributing to society, having a sense of responsibility and being physically and emotionally present for her family. This pivotal balancing act was how registrars made sense of the situation in which they find themselves and the justification for their professional and family decisions.

Mental well-being

Depressed, overwhelmed, distracted, sleep-deprived, anxious, burnt out, stressed and joyless were some of the feelings used to describe their emotional state. Some registrars reported that they felt as though they were failing in every aspect on a daily basis. These feelings of failure led to feelings of inadequacy and self-doubt. Some participants spoke about the marital discourse that they were experiencing due to the pressures of the specialisation program. There were also feelings of academic incompetence as their reading was not as vast as their colleagues and as a result, consultants tend not to invest as much effort into teaching and training registrar moms as other candidates who are more committed to the academic program.

Participants felt completely depleted emotionally, physically and mentally at the end of the workday with one participant commenting "… I give so much to work. I give 90% of my time to work. Now you want to take of that 10%? No, that's my time" (P2). This highlights the registrar mothers' feelings of needing to protect herself in a way of self-preservation. It implies the concept of "giving from an empty cup", which was mentioned repeatedly in interviews. All the interviews had an undercurrent of the temporary nature of this stressful period and participants shared sentiments of repairing bonds and rekindling relationships once their training was complete, which was part of their negotiation with themselves and their families.

The negotiations and compromise made by every registrar mother is the understanding that they cannot give 100% of themselves to all aspects of their lives 100% of the time. Their internal negotiation involves accepting that some days they will invest all their resources in their jobs when it is required of them and on other days they will dedicate themselves to their families, analogous to the to and fro motion of balancing one's family and work life upon to opposing sides the see-saw.

The idea of everything coming crashing down was a very strong one, as it gave the sense that the registrar is carefully but precariously balancing everything, analogous to the see-saw and one small disruption to this balancing feat will result

in complete mayhem. “This is freaking hard and we mustn’t pretend that we’ve got it all together and that we’re going to cruise through this. Because our day to day isn’t cruising. It’s a whole lot of juggling and sometimes the balls are falling out of the sky” (P4).

Upon experiencing a particularly challenging period in her life, one registrar mother reflected and said, “No, this cannot be life for me. I don’t want to live for this career. I need to do something else; I need to readjust and regroup and reprioritise what I want in life” (P1). This statement emphasised the registrar’s search for something more than her career in order to find fulfilment and the feelings of discontentment in having only had her career to live for. The concept of reprioritising and readjusting is an important one as it highlights the journey of change and growth that leads these women to become who they are.

One of the registrars described the training program as analogous to war, and commented that “I'm glad that we've survived this and I hope that whatever damage was caused we can heal from … at certain points it does feel like a war, like conflict. Like you are ... like you are entering a situation where you are under constant threat.” The words “survival”, “damage” and “war” describe the inherent battle that is analogous to registrar training and the continuous fight for balance.

Registrar mothers prefer being on call as opposed to normal day shifts as it affords them the opportunity to spend time with their children pre- and post-call, albeit when they are exhausted. This is an adaptation that registrar mothers make to accommodate the demands of work and family and a negotiation they make with themselves. Registrars also admitted to learning coping mechanisms for dealing with unpredictable situations and becoming adaptable when things do not go according to plan.

Balancing act

Role as a doctor

In the context of being a doctor, participants had seen a positive change in their professional development upon becoming mothers. They had become more empathetic and caring, especially towards the paediatric population, were more

invested in their sense of well-being and had become more capable and well-balanced doctors. This notion was suggestive of adopting the maternal role across different domains and further enhanced the concept of doctors being advocates for their patients.

Despite having strong professional ambitions, aspirations and goals, all the participants identified their families as their number one priority. “I’m a mother first. My career, for me is secondary” (P4). Another participant commented “I have always prioritised my family” (P 7), emphasising the parallel nature in which these women navigate their careers and families. “I juggle both the way I can. And I try to be the best at both” (P 4).

The matriarch

Women described a matriarchal home in which they were responsible for the majority of childcare, shouldering the responsibility for the family’s financial well-being and emotionally navigating the family through the next years. For some participants, the role of the matriarch is accepted begrudgingly, but the role of mother is embraced and celebrated. In the journey of specialisation, mother registrars identify strongly with the role of mother and along the journey also mother themselves into the strong characters which they become.

Gender constructs

Having gone through this journey with her husband and witnessing the challenges that he faced throughout his career progression, one participant observed that the problems and struggles faced by mothers are not unique to women and fathers grapple with many of the same problems, but in a different way.

> *It’s important for us to realise that these problems are not unique to being female, or being registrars and dads grapple with the same issues. But perhaps due to societal constructs we believe that the issues of child care are more relevant to moms and we feel a greater degree of responsibility for child care, but it’s not. Men struggle too, just in a different way and perhaps they can rationalise it because their absence in a family is because*

they are providing for them, whereas with us our career pursuits are almost seen as selfish (P7).

This statement shed light and insight into the complex nature of the team family structure and how there was a sense of unison in the struggles faced by both parents. It also highlights the lack of preconceived gender constructs in some family units and the equal distribution of child care.

Women of steel; the working mother

At the one end of the see-saw is the registrar mother with a strong sense of independent identity. A woman with multiple attributes and dimensions and with the desire to express all facets of herself. These women invest in their personal development, which then equips them in being more holistic parents.

So I think it's so important for mothers to culture, whatever is important to them. Another aspect that is not just their children, not just their family, to have their work, to have a career, to have hobbies or other interests, whatever they may be, because that will strengthen you as a mother that will make you multi-faceted and the minute you're a multi-faceted mother, you will be a good parent in a multi-faceted way and lead your children through life…You need to have things that you enjoy, you need to have things that challenged you. You need to have things that you overcome. The overcoming of this whole registrar time is a huge lesson for not only me, but that I will pass on to them [my children] (P4).

In the pivoting act of balancing on the see-saw lever registrar mothers are constantly readjusting their expectations as both a registrar and a mother. They construct the world around them to fit every piece of the complex puzzle that has now become their lives and in this newly constructed world, there is a lot more room for flexibility and acceptance of imperfection. This acceptance of imperfection is something a lot of mothers acknowledged to struggling with initially but realised it was integral to their survival on the playground.

Maybe along my journey, I've learned that when I started off, just after internship for example, I was convinced I'm going to be the best doctor in

the world, the best mother in the world. And that's evolved now to "I'm the best version of me as a doctor. Me as mother. Me as partner. Me as a friend. Me as a person. And it's my best (P4).

At the fulcrum of the see-saw, upon whom everything is balancing, is a resilient, strong and tough registrar mother. They have a greater hunger for success, as they have sacrificed so much more in order to be where they were. They described having to prove that they can do this on a daily basis, and that failure was not an option because the stakes were so much higher.

…as a group, we're tougher, and fiercer, than probably our counterparts. Because we have a lot more to lose in not completing what we've started. And we've sacrificed a whole other aspect, an entire world, in order to be where we're at (P4).

Discussion

The feminisation of medicine has resulted in an increasing number of women embarking on medical specialisation. The speciality training program is however largely inflexible and at odds with the needs of women, especially women with family responsibilities. This study explored the negotiations and adaptations applied by registrar mothers in the Department of Anaesthesiology at Wits in order to succeed in a professional academic environment.

Registrar mothers negotiate their competing identities and responsibilities through a complex process of sense-making. Sense-making is defined as the way in which an individual makes sense of their lived experiences, and draws from past interactions to make sense of present situations (96). It allows individuals to construct a reality, and is integral in the determination of human behaviour. The registrar mother's identity is characterised by a multitude of dichotomous roles. Among these are the dichotomy of the role as mother versus professional, and the role as a dominant matriarch versus fragile woman oppressed by gender stereotypes. The registrar mother stands precariously on the pivot of a see-saw balancing her support system at one end with her identity as a professional and mother on the other. The see-saw pivots on a fulcrum of resilience, which is the essence of the registrar mother. Her sense-making represents a complex

interaction of constructing a strong support system; fulfilling her role as a mother and becoming the role model her children needed, fulfilling an inherent sense of purpose and self-actualisation by pursuing her career ambitions and professional development and mothering herself into a resilient woman who can withstand adversity.

As the old African proverb goes, “It takes a village to raise a child”. Schueller (97) found that the secret to establishing a successful career was the support of a partner, family members and friends. In our study, we found that a strong support system and a village of carers were integral to the success of the registrar mother, and it was the sustenance from which she drew strength. The ability of the registrar to create relationships that supported her was a celebration of the extended village. Characteristics that ensured a successful “medical marriage” were reliable mutual support in relationships, recognising the important roles of each family member, recognising how the support from external family members helped them to function optimally and sharing the same values such as raising their kids (98) and this was in keeping with our findings.

Laney et al (99) reported that motherhood strongly influenced a women’s identity. In the study, motherhood often meant redefining one’s identity to allow the integration of the role of mother, as well as an enhancement of their personalities and emotional experiences. The registrar mothers in our study had newly reconstructed their identities to include being role models for their children, and to accept the new best version of themselves as mother, doctor and spouse. They had a deeper sense of purpose, determination, fulfilment and meaning upon becoming mothers resonating with the Role Accumulation Theory (22), which suggests multiple social roles are associated with greater life satisfaction and psychological well-being (100).

The emergent image of a strong, resilient woman (registrar mother) who has the capacity of adaptation in the face of adversity brings to mind the concept of “Sumud”, an Arabic term meaning “steadfastness” (101). Sumud reflects the resistance shown by Palestinian women in maintaining dignity and honour despite adversity and hardship, similar to the women in our study who had reconstructed their world to accommodate and cope with daily life under a constant sense of

conflict. Through their journey, they had become more than they imagined at the conception. The sense-making process allowed these registrar mothers to balance the guilt, stressors and work-life challenges they faced against the reward of professional excelling and the multifaceted mother that they had become because of personal fulfilment. The see-saw of opposing forces in tension, with the mother registrar being the pivotal component, was a depiction of the negotiation needed. The dynamic growth, adaptation, acceptance, forgiving nature of these women in times of adversity is a celebration of their resilience and liberation. This study provides insight into their experiences and affords us vital information, which may serve as a platform upon which the working environment could be adapted to becoming more conducive to their growth and understanding of their living world. This would require the input of both the university and the Department of Health in order reconstruct the training platform.

Conclusion

This study demonstrates the complex, dynamic nature of juggling motherhood and professional development and the armamentarium employed by registrar mothers in order to negotiate the challenges they face. It demonstrates how registrar mothers make sense of their lived reality and the reconstruction of their ideological identity. The process of sense-making and negotiation allows them to excel in multiple spheres of life.

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Conflict of interest

The authors declare that we have no financial or personal relationships which may have inappropriately influenced us in writing this paper.

Section 4: Proposal

Experiences of mothers who are registrars in an anaesthesiology department and the negotiations of their work-life balance

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4.1 Introduction and problem statement

From ancient Egyptians times, women have had a place in the medical world. The ancient Egyptians worshipped Isis, the goddess of medicine. Hieroglyphic representations of women performing surgery and practising medicine decorate the walls of tombs and celebrate women's place in the medical world (84). Women's role in the medical field has come a long way since then, yet there still seems to be a disparity in gender roles.

Since the latter half of the twentieth century, there has been an increase in the number of women entering the medical profession, both in South Africa and internationally (1, 5, 85). In South Africa in 2014, more than 62.2% of medical students were women (10) and in 2015, women accounted for 40% of the total number of qualified medical doctors (86). This has led to the so called "feminisation" of medicine (8). The changing gender constructs resulting in shifting roles of women in society and the workplace has brought reciprocal changes in family and social structures that have not been fully explored in the South African context. In 2019, a total of 1809 anaesthesiologists were registered with the Health Professionals Council of South Africa (102). In the Department of Anaesthesiology at the University of the Witwatersrand, women account for 61% (69 out of 113) of the registrar work-force.

Health care workers experience unique stressors that are related to their responsibilities (3, 51, 55, 103). Chronic stress can lead to depression, anxiety, hypertension and psychological illness (104). Thirty percent of medical personnel working in the operating theatre reported high levels of stress (105). Physicians ranked time pressure, their own work situation, the residency program and personal relationships highly as contributors to their stress (64). Seventy nine percent of Irish anaesthesiology residents felt that stress from work had affected their health (106). Stress related conditions are more common amongst anaesthesiologists than other physicians (105). Higher levels of fatigue were found in anaesthesiologists than other health care workers and there was a direct relationship between fatigue and psychological distress (107). Some of the factors contributing to stress that is unique to the anaesthesiologist are long working hours, challenges of working as part of a team (108), low control over work,

chronic sleep deprivation, high degree of work demands and responsibility, the need for sustained vigilance, the fear of litigation (109-111) and the increasing frequency of anaesthetising patients at the extremes of age (112). Van der Walt et al (61) found that 21% of anaesthesiology registrars at Wits display features of stress and burnout. For the same amount of stress, high levels of job satisfaction are associated with a lower incidence of burnout and improved mental health (59). This, therefore reinforces the important relationship between physical and emotional well-being and job satisfaction, and the importance of creating an environment in which this is supported (57).

Despite the numerous attributes that women bring to the profession, such as a different skill set, patient-centred communication style and emotional and psychological support (93), a woman's role in the medical field has not always been well received. According to Wynn (84), in 1873 Edward Clark, a Harvard Medical School professor at the time, wrote that the medical education of women would result in "monstrous brains and puny bodies".

Female doctors experience various challenges. Gjerberg et al (113) are of the opinion that nursing staff are less helpful to female doctors, are less respectful and display lower levels of confidence in their abilities. Saloojee and Rothberg (81) found that female registrars in paediatrics felt that the structure of the program is insensitive towards their needs and that they did not have the freedom to fall pregnant and that female registrars were at greater risk of emotional exhaustion. Traditionally women have opted to delay starting a family until completion of their speciality training, but recent research shows that more women plan on having children during their training years (90). Pregnancy is also more challenging for medical professionals, as they experience a higher rate of pregnancy related complications (82). In addition, Saloojee and Rothberg (81) found that 71% of paediatrics registrars reported that they had been actively discouraged from falling pregnant. Women are more likely to experience difficulty in finding work-life balance (66, 80, 88) and experience a greater amount of inter- and intra-role conflict (13, 114).

Studies exploring the experiences of physician mothers identified key themes such as "maternal discrimination", gender inequality, unequal pay, fewer prospects for

professional progression, a lack of emotional and structural support in the peripartum period and work-family conflict (4). Halley et al (4) concluded that physician mothers perceived the culture of medicine to be one of the driving factors behind maternal discrimination. In this study, participants felt there is a notion that mothers cannot be good doctors, and vice versa and that one should postpone starting a family as it destroys one's professional career. Failure to do so implies that one does not appreciate the worth of their profession.

Part-time specialisation training is not a freely available option, despite research indicating a demand, especially amongst female trainees, (49) therefore further isolating women with family responsibilities (46). Even in the specialities that are viewed as favourable to women, there is still very little provision for "flexible training". In fact, the medical training programme is so inflexible in accommodating women that many institutions have no formal contingency plan for managing pregnancies in their staff (1, 8, 50). The medical profession does not lend itself to having a healthy workplace balance, and advancement in the professional sense is often at the expense of family, or an enormous amount of stress in order to achieve success in both domains (8). Domestic commitments was one of the most important factors influencing female doctors career choices (45, 47).

The feminisation of medicine and the changing gender constructs have created new gender-specific challenges faced by female doctors. Little is known about the experiences of female doctors in the South African context.

4.2 Aim and objectives

4.2.1 Aim

The aim of this study is to explore the experiences of registrars who are mothers in the Department of Anaesthesiology at Wits and the negotiations these entail.

4.2.2 Objectives

The objective of this study is to explore the work and family related experiences of registrar mothers in an academic training setting and the negotiations of these experiences of work-life balance.

4.2.3 Research assumptions

The following definitions will be used in this study.

Anaesthesiology registrar: a qualified doctor who is registered with the Health Professions Council of South Africa as a trainee anaesthetist.

Mother: any registrar who is responsible for caring for a child or children, biological or otherwise, with whom they reside and is under the age of 18 years old.

Work-life balance: is defined as the equitable distribution of one's time and resources between paid employment and family responsibilities, ensuring that the demands of both spheres are met (115, 116).

Negotiations: a process of bargaining between two or more parties, each with their own aims and needs, with the intentions of coming to an agreement whereby all parties are satisfied (35, 39).

4.3 Demarcation of study field

This study will be conducted in the Department of Anaesthesiology at Wits. The department consists of 74 consultants, 112 registrars and 22 medical officers. Of the 112 registrars, 60% are female.

The following are core hospitals on the departments training platform:

- Charlotte Maxeke Johannesburg Academic Hospital, a 1200-bed central hospital
- Chris Hani Baragwanath Academic Hospital, a 2800-bed central hospital
- Helen Joseph Hospital, a 500-bed tertiary hospital
- Rahima Moosa Mother and Child Hospital, a 338-bed regional hospital
- Wits Donald Gordon Medical Centre, a 190-bed public/private hospital
- Klerksdorp Tshepong Hospital Complex, a 1200-bed regional hospital in North West Province
- Thelle Mogoerane Regional Hospital, an 821-bed regional hospital.

4.4 Ethical considerations

Approval to conduct this study will be obtained from the Graduate Studies Committee and the Human Research Ethics Committee (Medical) of the University of the Witwatersrand. Permission was obtained from the Head of the Department of Anaesthesiology (Appendix 1).

Anaesthesiology registrars who are mothers will be identified and invited to participate in the study. The aim of the study will be explained to them and they will receive an information letter (Appendix 2). Upon agreeing to participate in the study, participants will be requested to sign a consent form (Appendix 3) and consent for audio recording of the interview (Appendix 3). Participation will be entirely voluntary, and the decision to participate or decline will not affect their training or work. They will be free to withdraw at any point if they so wish.

Every participant will receive a code, and a separate list with names and codes will be generated and filed separately. The transcribed data will only contain the participant's code, to ensure confidentiality. Only the researcher and supervisors will have access to the transcribed data. All data will be reported anonymously. Data and audio-recordings will be kept securely for a minimum period of six years in a securely locked cupboard, and thereafter will be destroyed.

The study will be conducted in accordance with good clinical research practice as described in the South African Good Practice Guidelines (117) and the Declaration of Helsinki (118).

The researcher will develop skills in dealing with distressed participants. This will be done with the assistance of a psychologist that is proficient in managing acute emotional distress and debriefing. In the event that a participant becomes distressed, the researcher will also request permission to contact the participant's preferred support provider, or the participant will be referred to a member of the Wellness Committee of the Department of Anaesthesiology to provide additional support.

4.5 Research methodology

4.5.1 Research design

This is an exploratory, qualitative study which will employ semi-structured interviews with participants.

Burns and Grove (119) define qualitative research as “a systematic, subjective approach used to describe life experiences and give them significance”. An exploratory study is one “that explores the dimensions of a phenomenon or that develops or refines hypotheses about relationships between phenomena”(120). A qualitative design is best suited for this study as it allows the researcher to explore the descriptive experiences of participants.

4.5.2 Study population

The study population will consist of registrars who are mothers in the Department of Anaesthesiology.

4.5.3 Study sample

Sample size

In qualitative research, an adequate sample size is one that satisfactorily answers the questions posed, and the criteria of sufficiency and saturation have been met (121). The sample size will be guided by the richness of the data obtained in the interviews. In this study participants will be interviewed until data saturation is achieved. The data will be analysed after each interview and interviews will continue until data saturation is achieved (120, 122).

Sampling method

A combination of purposive and snowball sampling methods will be utilised for this study. Purposive sampling is a non-probability-based technique most commonly utilised in qualitative research. It is constructed on the researcher’s knowledge and judgement of which participants will be best suited to answer the questions of concern, on which the study is focused (120). Snowball sampling entails asking early participants to refer to other potential participants. It provides the advantage

of allowing researchers to specify the characteristics they are seeking to ensure rich data (120). At the end of every interview, participants will be asked if they know of anyone else that has strong views on the matter and would like to share their thoughts.

Inclusion and exclusion criteria

All registrars who are mothers, who are currently working in the Department of Anaesthesiology and agree to participate in the study will be included.

Participants in the immediate postnatal period who are currently on maternity leave will be excluded.

4.5.4 Data collection

Method

Semi-structured interviews will be employed in order to achieve detailed insight into participants experiences (121). In addition, interviews allow the researcher the opportunity to explore themes and clarify unclear responses (48).

The interviewer will be the researcher. I am a registrar in my third year of training and have a 19-month-old boy. My position statement is presented in Appendix 4.

Participants

Participants will be identified with purposive sampling, with the aid of the “Anaesthesia Mamas” WhatsApp group. This group was created by the Anaesthesiology Wellness Committee to provide support and offer advice to all moms who are registrars in the department. However, this group is not inclusive of all registrar mothers in the department. As of May 2019, the group consisted of 25 participants. The departmental data base listing all registrars who have needed to extend the registrar training time due to maternity leave will also be used. Thereafter a snowball sampling technique will be used in which participants will be asked if they know of anyone else that has strong views on the matter and would like to share their thoughts.

Once participants have responded to the invitation to participate, I will communicate with them telephonically or in person and explain the study to them. The purpose of the interview and the approximate duration will be explained(121). If they are agreeable, a time and venue that is most convenient for them will be arranged.

Conduct of the interview

The quality of the data obtained in qualitative research depends deeply on the skill of the interviewer. As I am a registrar in the department, and an insider to this context, I have the advantage of knowing most of the registrar body and have an existing rapport with the participants. As there is an element of familiarity, and I am also a registrar mother, it will promote a comfortable environment in which participants feel at ease to share honest responses. I will reiterate their confidentiality and will behave in a polite, welcoming and unbiased manner. I will not express any views of agreement, disapproval or shock to responses, and will remain neutral (120). I will use an interview guide (Appendix 4) and maintain a conversational tone and open body language (120). I will maintain the skill of being a good listener and avoid interrupting (121).

I will be prepared for potential emotional responses and be equipped to manage emotional crisis (120) by developing skills with the aid of a proficient psychologist. The Wits Anaesthesiology Wellness Committee and the support provider referral system will be utilised for participants in emotional distress, depending on their preference.

Data collection will be done at a venue that is deemed convenient for the participant, which may include the participant's home, or a coffee shop near the participants home. The venue will be comfortable (121) and conducive to interviewing. Beverages such as tea, coffee and water will be provided. Tissues and bathroom facilities will be available.

I will obtain informed consent for both the interview process and the recording of audio data. The interviews will be conducted in English. I will start with some "ice-breakers" to allow the participants time to become comfortable with the audio

recording and use nonverbal communication such as posture and facial expressions to set an amiable tone (120).

The interview will start with obtaining demographic details, followed by broad, open-ended questions. Following on that response, subsequent questions will be based on a “clue-and-cue” taking method, directed by participants responses (121). The questions of the interview guide (Appendix 5) were designed to gain insight into the perspectives, experiences and challenges faced by registrar mothers.

These include

Demographic details such as, age, marital status, number of years in the registrar training programme, if they had their children before or during their registrar training, if they are currently studying for exams or if they have completed their exams and research, if they have a nuclear or extended family, what kind of support structure they have and who cares for their children during the day.

Tell me about your children? How many do you have?

What has it been like having kids and being a registrar?

How do you approach the challenges of these experiences?

How do you approach the successes of these experiences?

What in your opinion are the attributes of a professional working mother?

The conversations will be recorded with two cellular phones to anticipate for any potential equipment malfunctions. They will be charged prior to the interview and placed in a position for maximal clarity of recordings.

Interviews are anticipated to last between 45 − 60 minutes, however, they will not be abruptly terminated if I feel that new, rich data is still being explored or if the participant has more to say. I will aim to end the interaction on a positive note, and an open-ended question such as “Is there anything else you would like to share with me?” to ensure that the participant has an opportunity to express any other thoughts. In closure, I will request permission to contact the participant if additional

questions evolve upon interrogation of data, or if clarification of data is needed (120).

Field notes

Field notes are records of information that display explanatory and analytical cognitive processes to attempt to comprehend the data that is being processed. These notes will be coded and matched to the interview and kept by the researcher after every interview. They will contain a narrative account of experiences in the field, and later become data for analysis. The researcher will attempt to describe the interaction in great detail and will be both “observational” and “reflective” (120).

Efforts will be made to compile the field notes as soon after the interview as possible, to minimise the potential for omitting or distorting important data. Most of the field notes will be written after the interview to minimise distractions during the interview process, but important phrases or words that could later serve as a reminder will be inconspicuously “jotted down” (120).

Post interview procedure

The interviews will be reviewed soon after the interview was conducted. The recordings will be transcribed by the researcher and the accuracy of the transcription will be ensured by listening to the original recording while reading the transcript.

The collection and interrogation of data will occur concomitantly in the form of compiling field notes and reviewing the transcriptions. This will allow the researcher to establish when data saturation has been achieved. The interviews will be allocated a code and identifying information will be removed. The field notes and matching interview transcription will be analysed together.

4.5.5 Data analysis

Data analysis will be done using Braun and Clark’s (94) thematic analysis. The six phases are shown in Table 1.1.

Table 1: Six phase thematic analysis according to Braun and Clark (94)

Phase	Description of Phase	Method of implementation
1	Familiarising yourself with the data	I will accomplish this by thorough reading, interrogation and rereading of transcriptions. Noting down initial ideas, and then re-evaluating these ideas
2	Generating initial codes	I will code interesting features of the data in a systematic manner across the entire data set, and thereafter gather data under each code
*3	Searching for themes	I will collate codes into potential themes, and then gather all the data applicable to each theme
4	Reviewing the themes	I will check that the themes work in relation to the coded extracts (level 1) and the entire data set (level 2), and generate a thematic “map” of the analysis
5	Defining and naming themes	I will refine the particulars of each theme, and the overall story the analysis tells. I will generate clear definitions and names for each theme
6	Producing the report	This is the final opportunity for analysis. This will entail compiling vivid, compelling extract examples, the final analysis of extract examples chosen, relating the examples and analysis back to the research questions and literature, and produce a research report of the analysis.

4.6 Significance of the study

A woman’s position in the workplace and within the family structure is rapidly evolving, and with this comes new challenges. The perceptions, experiences, challenges and attributes of registrar mothers in the Department of Anaesthesiology is not known. Insight into their experiences affords us vital

information which may serve as a platform upon which the environment could be adapted to becoming more conducive to their growth and understanding of their living world.

4.7 Trustworthiness of the study

Guba and Lincoln (95) created a model upon which “trustworthiness” could be built. These criteria are: creditability, dependability, conformability, transferability and authenticity. Table 1.2 presents a summary of how trustworthiness will be ensured in this study

Table 2: Methods of ensuring trustworthiness

Method	**Criteria**
Semi structured prolonged engagement, open ended interviews	Credibility person confidentiality, independent
Voluntary participation and freedom to withdraw from study	Credibility
Comprehensive descriptions of methodology, data collection and fieldwork	Credibility, dependability, transferability
Encouragement of open, honest responses	Credibility
Person triangulation	Credibility
Ensuring accurate transcriptions	Credibility, conformability, authenticity
Independent supervisor and researcher data analysis,	Credibility, confirmability
Researcher and supervisor feedback sessions	Credibility, confirmability

4.8 Potential limitations

This research project is a qualitative one and the results cannot be extrapolated to other contexts. In addition, due to the nature of language, there is an inherent property of ambiguity. However, this study may serve as a platform upon which further research can be conducted and provide insight into the experiences of mothers in specialisation medical training.

4.9 Project outline

Table 3: Time frame

Activity	Mar 2019	Apr 2019	May 2019	Jun 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Proposal preparation										
Literature review										
Proposal submission										
Ethics approval										
Post-graduate approval										
Data collection										
Data analysis										
Draft article										
Submission										

Table 4: Budget

Item	Price per item	Number of items	Copies	Total
Proposal	1	25	6	R 150
Post-graduate form	1	2	6	R 12
Complete report	1	100	4	R 400
Psychology skill session	R800	2		1600
Printing research report	R1	+-80	5	R400
Binding final report	R30	5		R150
Consent forms and information sheets	R1	+-45		R45
Coffee/tea/ beverages	20	+-15		**300**
Grand total				**R3057**

The Wits Department of Anaesthesiology will incur the costs of paper and printing.

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Section 5: Appendices

Appendix 1: Letter to the Head of the Department of Anaesthesiology

Dr Nisaa Bismilla
Department of
Anaesthesiology
University of the
Witwatersrand
nbismilla@gmail.com
4 April 2019

Dear Dr. Motshabi

I am a registrar in the Department of Anaesthesiology and am currently doing research for the completion of the M Med. The research project is titled "Experiences of mothers who are registrars in an anaesthesiology department and the negotiations of their work-life balance".

The aim of this project is to explore the experiences of registrar mothers in an academic training setting and gain insight into their challenges and successes. The study will involve in-depth interviews with registrar moms, which will be tape recorded. The interviews will be conducted at a venue and time that is deemed most convenient for the participants.

I would like to request your permission to carry out my research in the department.

Thanking you in advance for your assistance.

Kind regards

Nisaa Bismilla
Registrar: Dept of Anaesthesiology
Contact number: 073 802 0923

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HEALTH
REPUBLIC OF SOUTH AFRICA

WITS UNIVERSITY

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Department of Anaesthesia
Area 361
Charlotte Maxeke Johannesburg Academic Hospital

Tel: 011 488-4344

05 April 2019

Subject: **Permission to collect data from Department of Anaesthesia**

To whom it may concern,

This letter stands to affirm that I, Dr PMV Motshabi, grant permission to Dr Nisaa Bismilla, HPCSA number MP 0769630, to collect data in Department of Anaesthesiology at University of Witwatersrand for her study "Experiences of mothers who are registrars in an anaesthesiology department and the negotiations of their work-life balance".

The approximate time frame will be, but not limited to, the months of May to September 2019, until her sample size is obtained. The information obtained from the data will be used for Dr Bismilla research study for her Masters in Medicine only, and will include information and data relevant to her study.

Yours sincerely,

WITS UNIVERSITY

Dr Palesa Motshabi
Academic Head: Department of Anaesthesia
Head of Clinical Unit: Cardiac Anaesthesia

Tel: +27 (0)11 488 4344
Cell: 083 432 1994
Email: palesa.motshabi@wits.ac.za
Website: www.wits.ac.za

WITS SCHOOL OF CLINICAL MEDICINE
FACULTY OF HEALTH SCIENCES

Charlotte Maxeke Johannesburg Academic Hospital, 6th Floor, Area 361/16, Jubilee Road, Parktown, Johannesburg

Appendix 2: Participant Information Sheet

Dear Fellow Registrar Mom

My name is Nisaa Bismilla and I am a registrar in the Department of Anaesthesiology. I would like to invite you to participate in my M Med study. The title of the study is “Experiences of mothers who are registrars in an anaesthesiology department and the negotiations of their work-life balance”. The aim of the study is to explore the experiences of registrar mothers, and gain insight into their challenges and successes.

I have obtained permission to conduct the study from the Graduate Studies Committee and the Human Research Ethics Committee (Medical) of the University of the Witwatersrand.

Your participation in the study would be entirely voluntary, and your decision not to participate will not have any adverse consequences. You will be free to withdraw from the study at any time, should you so wish. There are no benefits in participating, other than contributing to the gaining of knowledge. Your confidentiality will be maintained throughout the process. Your interview will be allocated a code, and any identifying information will be removed.

If you agree to participate in the study, we will meet at a private venue that is most convenient for you. There are no correct or incorrect answers, as we would like to learn about your experiences. The interviews will be audio-recorded and will be later transcribed. I will also make filed notes during and after the interview. The audio-recordings will be kept securely for a minimum period of six years after which it will be destroyed.

If you agree to participate in the study, I will request that you sign two consent forms, the first of which will be for your agreement to participate and the second will be for permission to audio-record the interview.

If you have any further questions, you can contact me on 073 802 0923. You may also contact:

- Professor CB Penny, Chairperson of the Human Research Ethics Committee (Medical) at the University of the Witwatersrand on 011 717 2301, email: clement.penny@wits.ac.za
- Ms Z Ndlovu or Mr RMkansi, Committee Secretariat on 011 717 1234/2700 or email: Zanele.ndlovu@wits.ac.za or Rhulani.mkansi@wits.ac.za.

Thank you in advance for your assistance.

Kind regards
Nisaa Bismilla

Appendix 3: Informed consent form

Consent for participation in the study

I, _____hereby consent to participate in the study on exploring the experiences of working mothers in the Department of Anaesthesiology.

Nisaa Bismilla has fully explained the aim of the study and the interview process, and I understand that:

- my participation is to aid in the understanding of the challenges and successes experiences by registrar mothers in an academic training setting.
- My participation is entirely voluntary and there will be no financial remuneration, or other work-related benefits
- I am free to withdraw from the study at any time.

Signature of participant _____

Consent for audio-recording during the interview

I,_____ consent to the audio recording of my interview for the study titled “Experiences of mothers who are registrars in an anaesthesiology department and the negotiations of their work-life balance”.

I understand that the interview will be transcribed at a later stage, to allow for analysis of the data obtained from the interview. I understand that my confidentiality will be maintained, and that only the researcher will be able to identify me with the aid of a code. I am aware that the audio recording will be stored securely for a minimum period of 6 years, after which it will be destroyed.

Signature of participant: _____

Appendix 4: Position statement

I am a married 30-year-old female registrar with a 19-month-old baby boy in my third year of training in the department. I had my son in the first year of my registrar training, after writing the primary examination.

My perception of being a working mom is a complex one. I gain a sense of accomplishment, purpose, enjoyment, fulfilment and reward from my specialisation training and my role as a doctor working in the public setting. However, I feel a constant struggle with work-life balance and feel great amounts of pressure in meeting the demands of both work and family. Some of the factors contributing to this are long work hours, after work responsibilities such as attendance of tutorials, and requirements to work at outreach hospitals such as Klerksdorp for prolonged durations. At times, this results in conflict and job dissatisfaction.

I believe that gender equality is identifying and equally respecting the different and unique needs, priorities, strengths of men and women (123), and would love to have a work environment that understands that my needs are different, and celebrates the strengths I bring to the workplace, such as empathy, patience and nurturing.

This study is important to me as I would like to allow others to gain insight into the experiences, challenges, strengths and skillset that working mothers have. I believe that if people are aware of the diversity of needs and assets that women bring to the workplace, we could adapt the environment to one which is best suited for the growth and development of each individual. In addition, I would like to remove the stigma associated with being a registrar mother.

Appendix 5: Interview guide

Ice breakers

The interview will start with ice breakers and “settling-in period” to allow participant the opportunity to become comfortable with the audio-recording.

Demographics

Questions will be asked regarding the age of participant, duration of registrar training, marital status, number of children and their ages, at which point in their training they had their children, whether they live with their nuclear or extended family and their examinations passed.

Outline of interview

The interview will then continue with an open-ended question such as:

> Tell me about your children? How many do you have?
> What has it been like having kids and being a registrar?
> How do you approach the challenges of these experiences?
> How do you approach the successes of these experiences?
> What in your opinion, is the attributes of a professional working mother?

The interview will draw to a close with the aim of ending on a positive note with an open-ended question such as:

> Is there anything else that you would like to share with me?
> Do you know anyone else that would like to participate in this study who has strong views on the matter?

Appendix 6: Ethics approval

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

R14/49 Dr Nisaa Bismilla

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M190441

NAME: (Principal Investigator)	Dr Nisaa Bismilla
DEPARTMENT:	Anaesthesiology
PROJECT TITLE:	Experiences of mothers who are registrars in a department of anaesthesiology and the negotiations of their work-life balance
DATE CONSIDERED:	26/04/2019
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Juan Scribante, Helen Perri & Lionel Green-Thompson
APPROVED BY:	Dr CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	29/04/2019

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on the Third Floor, Faculty of Health Sciences, Phillip Tobias Building, 29 Princess of Wales Terrace, Parktown, 2193, University of the Witwatersrand. I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report**. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in **April** and will therefore be due in the month of **April** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

1

Appendix 7: Graduate studies approval

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Private Bag 3 Wits, 2050
Fax: 027117172119
Tel: 02711 7172076

Reference: Mrs Sandra Benn
E-mail: sandra.benn@wits.ac.za

24 June 2019
Person No: 0701366D
PAG

Dr N Bismilla
Unit 53, Parkview Manor
7 Lower Park Drive
Parkview
2193
South Africa

Dear Dr Nisaa Bismilla

Master of Medicine in Anaesthesia: Approval of Title

We have pleasure in advising that your proposal entitled *Experiences of mothers who are registrars in an anaesthesiology department and the negotiations of their work-life balance* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

Appendix 8: Turnitin report

0701366d:MMed_for_turnitin.docx

ORIGINALITY REPORT

8%	5%	2%	7%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

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