Navigating speciality training through agency: the Fellowship of the Colleges of Medicines of South Africa

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DECLARATION

I, **Hlengani Lawrence Chauke** (**Student number 31257421**), declare that this thesis entitled '**Navigating speciality training through agency: the Fellowship of the Colleges of Medicines of South Africa'** I herewith submit at the University of Lancaster is my own original work. I have not previously submitted it for qualification at another institution of higher education.

Hlengani Lawrence Chauke **Date: 03 September 2024**

ABSTRACT

Keywords: agency, structure, postgraduate medical education, grounded theory, trainee medical specialists

This thesis examines the experiences of trainee medical specialists in South Africa's national medical specialist certification framework, implemented in 2011. The framework aimed to integrate specialist medical education and establish a unified, quality-assured national certification system. This research project responds to the need for teaching and learning (T&L) research in higher education that considers agency, context, and different research methodologies and philosophies in its conceptualisation of T&L in this field. It is also motivated by my curiosity about how structure and agency interact in specialist medical training, given the health system and educational challenges reported in this area. The thesis seeks to explain how trainee medical specialists use agency to navigate structural constraints during specialist training.

The study is grounded in the interpretive-constructivist research philosophy and employed a constructivist grounded theory methodology to investigate the interaction between trainees' agency and structural constraints in the postgraduate (PGME) training environments. Semi-structured interviews were conducted with 30 trainees and recently qualified medical specialists in four specialist disciplines: Medicine, Obstetrics and Gynaecology, Paediatrics, and Surgery in Gauteng Province, South Africa. Participants were selected using purposeful and theoretical sampling techniques. The sample size was determined based on data adequacy. This approached ensured that sufficient data was generated to address the research questions. Interviews were digitally recorded, professionally transcribed, and analysed according to the constructivist grounded theory research methodology.

The study provides insights into the structural challenges faced by trainee medical specialists during their training. These challenges seek to hinder them from achieving their personal dreams or aspirations. These challenges include, among others, the organization and structure of the specialist training programs, institutional culture and practices, supervision related

challenges, gender and racial discrimination. Some of these constraints (e.g. gender and racial discrimination) reflect the lack of transformation within the PGME training environments and the persistent legacy of apartheid.

The study's findings suggest that, instead of yielding to the constraints, the trainees utilised individual and collective agency to successfully navigate and overcome them in pursuit of their personal dreams/aspirations. Internal dialogues (autonomous and communicative) and social support emerged as important mediators of the trainees' agency. The above findings are in contrast with the structuralist and individualist perspectives on the relationship between structure and agency which assigns determining power to structure and agency respectively.

On the conceptual level, this thesis contributes to the conceptualization of T &L learning in PGME from the perspective of structure and agency, including using different research methodology to conceptualise the structure and agency interaction. It proposes that reflexivity, personal history, and social support are crucial factors that influence personal agency, and as such, should be taken into consideration in all endeavours aimed at comprehending the interplay between structure and agency. From a practical standpoint, this research offers valuable information on the challenges facing medical specialist training in study sites that can be utilised to improve training and to inform PGME policy direction.

TABLE OF CONTENTS

Appendices

DEDICATION

I dedicate this thesis to the following people:

- My late parents, Yingwani John and Tsatsawane Luceth Chauke.
- My sisters: Emelinah (late), Sannie, Sophy, Sarah, Salphina and Brenda.
- My wife, Confidence, and children, Watshembeka and Utshembekile.
- All my nieces, nephews, aunts, uncles and their spouses and children.
- The medical education profession in South Africa and worldwide, especially the trainees whose lived experiences have informed this thesis.
- The patients whom we serve and for whom our profession exists.

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ABBREVIATIONS

ADP	Academic Development Program
ALT	Adult Learning Theory
ART	Antiretroviral Treatment
CA	Constructive Alignment
CBME	Competency Medical Education
CGGTM	Classical Glaserian Grounded Theory Methodology
CLE	Clinical Learning environment
CMSA	Colleges of Medicines of South Africa
COGSA	Council for the College of Obstetricians and Gynaecologists
CoP	Community of Practice
CTGM	Constructivist Grounded Theory Methodology
ECP	Extended Curriculum Program
ELT	Experiential Learning Theory
EPA	Entrustable Professional Activities
GNU	Government of National Unity
GTM	Grounded Theory Methodology
HBU	Historically Black University
HE	Higher education
HOD	Head of Department
HWALU	Historically While Afrikaans Language University

HWELU	Historically While English Language University
HEQF	Higher Education Qualification Framework
HPCSA	Health Professions Council of South Africa
HPE	Health Professions Education
LMIC	Low- and middle-income countries
LPP	Legitimate Peripheral Participant
MMed	Master of Medicine
MKO	More Knowledgeable Others
MOU	Memorandum of Understanding
MRT	Middle Range Theory
M & M	Morbidity and Mortality
NFSAS	National Student Financial Aid Scheme
NGO	Non-Governmental Organisation
NMFC	Nelson Mandela Fidel Castro
NP	National Party
NPO	Non-Profit Organisation
OECD	Organisation for Economic Cooperation and Development
OSD	Occupation Specific Dispensation
PDoH	Provincial Department of Health
PGME	Postgraduate Medical Education
PHC	Primary Health Care
RCT	Rational Choice Theory
RDP	Reconstruction and Development Program
RWOPS	Renumerated Work Outside Public Service
SACOMB	South African Committee of Medical Deans
SAL	Student Approaches to Learning

SAMA	South African Medical Association
SCT	Socio-cognitive Theory
SCLT	Socio-cultural Learning Theory
SDG	Sustainable Development Goal
SGTM	Straussian Grounded Theory Methodology
SLA	Service Level Agreement
SLT	Situated Learning Theory
SRL	Self-regulated Learning
SSA	Sub-Saharan Africa
TAH	Total Abdominal Hysterectomy
TLA	Teaching Learning and Assessment
T&L	Teaching and learning
Wits	University of the Witwatersrand
UCT	University of Cape Town
UP	University of Pretoria
ZAA	Zone of Available Assistance
ZPD	Zone of Professional Development

LIST OF FIGURES AND TABLES

Tables

Figures

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1. Introduction

The purpose of this introductory chapter is to orient the reader and provide context for the study. Henceforth, the first section focuses on the background and following that, the problem statement, rationale, research questions, aims and objectives. The chapter concludes with an outline of the rest of the thesis.

1.2. Background

While education has traditionally been viewed through an economic lens, with primary focus on national development (Kromydas, 2017; McArthur, 2011), its role and benefits within society extend far beyond this narrow parameter. The benefits of education include, but are not limited to, the promotion of human development and creativity, equipping individuals with the knowledge and skills required for self-actualization, and enabling meaningful contributions to society (McArthur, 2011; Teague, 2015). Due to these important roles, education has always attracted the attention of various stakeholders, among them politicians, policymakers, researchers, society, and educators (Badsar et al., 2012; Case & Marshall, 2004; Ezomike et al., 2020; Ginns et al., 2007; Kim & Gilbert, 2015; McCallum, 2008; Ramsden, 2003; Senanayake & Wijesundere, 2014; Stes et al., 2009).

My interest in this subject dates back to my high school days. During this time, I developed an interest in supporting fellow students in realizing their aspirations. I believe that the path to a fulfilling life lies in discovering of one's passion and achieving one's dreams. As an educator, clinician, educational manager, and evaluator, I am still captivated by the subject, particularly students' learning experiences, always looking for ways to improve their educational experiences and to help them achieve their dreams.

This interest has further been heightened by the escalating complexities reported in the field of higher education in the recent years. These complexities are believed to be due to a myriad of factors, amongst them, the increase in student numbers due to socio-political reforms and

globalization, improved access of previously marginalised groups to higher education and the challenges that this group of students face(e.g. lack of inclusiveness and high dropout rate), rising cost of higher education, outdated curricula, pedagogies that are out of tune with modern educational practices , difficulties in retaining academic staff, low students throughput rates and high rate of psychological distress within the student body. (Altbach et al., 2009; Boughey and McKenna, 2021; Bunting, 2006; Bunting et al., 2014; Crawford et al., 2017; Edward & Macmillan, 2015; McArthur, 2021; Scott, 2013; Scott et al., 2007). These structural challenges contribute to the students' poor educational performance and increasing dissatisfaction with higher education. These are important barriers with a potential to derail students from achieving their dreams.

The higher education sector has seen a rise in student protests, calling for decolonization and reforming of the curricula as well as better education financing mechanism to improve access to higher education and educational outcomes (Fomunyam & Teferra, 2017; Mutekwe, 2017). The above factors call for immediate evaluation of student learning experiences, T&L, to gain deeper understanding on the impact of these factors on T&L in higher education (HE), students learning experiences and educational performance and, use the information to formulate strategies to improve their learning experiences and educational outcomes (Al-zoubi, 2014; Madhani, 2021; Scott, 2013; Scott et al., 2007).

Consequently, the challenges and the need to improve T&L in HE attracted the interest of higher education researchers, specifically those working in the domain of T &L and students' learning experiences (Biggs, 1996; Entwistle, 2007; Entwistle & Ramsden,1983; Entwistle & Tait, 1995; Marton & Saljo, 1976; Marton et al.,1997; Ramsden,1988; Richardson, 2005; Trigwell & Prosser, 1991; Trigwell et al., 1999; Webb, 1997). While this research is commendable, upon closer analysis of this work, it becomes apparent that the majority of the studies focused on students' approaches to learning (SAL), and little attention has been paid to the context and the complex interactions between learners and their learning environments/contexts. Despite the above limitation, the SAL research has provided valuable insights into the diverse approaches students adopt toward learning (surface, deep, and strategic) and impact on educational

performance. Furthermore, the research has shed light on how these approaches are shaped by contextual factors, such as relationship between teachers and students, teachers' instructional methodologies and assessments methods(Biggs, 1996; Entwistle, 2007; Entwistle & Ramsden,1983; Entwistle & Tait, 1995; Marton & Saljo, 1976; Marton et al.,1997; Ramsden,1988; Richardson, 2005; Trigwell & Prosser, 1991; Trigwell et al., 1999; Webb, 1997).

While this research has significantly improved our understanding of student learning and their educational experiences, the research falls short in terms of providing a thorough and nuanced understanding regarding the contribution of the interaction between contextual and leaner factors in shaping students' learning experiences and influencing educational outcomes (Ashwin, 2008, 2009). Consequently, calls have been made for teaching and learning research that focuses on the dynamic interaction between structures and student agency in T&L in HE (Ashwin, 2008; Case, 2015; Ertl & Wright, 2008; Haggins, 2003; Hodkinson et al., 2007; Mandal, 2018; Stenalt & Lassesen, 2021; Varpio et al., 2017). It is believed that this type of research has the potential to greatly improve the current conceptualization of T&L and assessment (TLA) in HE (Ashwin, 2008). Furthermore, this type of research could provide valuable information that can be used to inform teaching practices, ultimately leading to improvement in students' learning experiences and educational outcomes.

The factors facing HE discussed above, are inherently structural in nature. Although there is no universally agreed-upon definition for structures, the term is used to refer to factors such as regulations, resources, institutional frameworks, institutional culture and practices, as well as the broader socio-political context that either facilitate or impede the actions or agency of individuals (Archer, 2003; Ashwin, 2008; Bourdieu, 1977; Giddens, 1984,1986). Similarly, the definition of agency is also diverse, encompassing concepts such as personal identity, personal disposition, autonomy as well as capacity to direct one's own life and make decisions that prioritise one's dreams or projects. (Archer, 2003; Emirbayer and Mische, 1998; Evans, 2002,2007, 2012). These concepts are important and relevant to understanding TLA, especially in South Africa given the country's socio-political history and ongoing education and healthcare challenges.

The SAL research, from which most of our current knowledge on teaching and learning (T&L) and teaching and learning approaches (TLA) is derived(Ashwin 2008; Case, 2015; Case & Marshall, 2004, 2009; Campbell et al., 2001; Haggis, 2003; Marton & Saljo, 1976; Ramsden, 1988, 2003; Trigwell & Prosser, 1991), attempted to conceptualise the role played by learner agency and contextual factors in shaping TLA to some extent. However, this research falls short in terms of providing deeper insight into the interaction of structure and human agency in shaping T &L in HE. This is because the research only focused on the various ways in which students approach learning (surface, deep, and strategic) and teachers' approaches to teaching, and the role played by contextual factors on these approaches, at a superficial level (Case, 2013; Case & Marshall, 2004, 2009; Campbell et al., 2001; Marton & Saljo, 1976; Trigwell & Prosser, 1991).

Paul Ashwin (2008, 2009) contends that the research lacks in terms of providing a comprehensive and nuanced understanding of the interplay between contextual factors (structure) and learner factors (agency), including how these factors impact student learning, educational experiences, and learning outcomes. He concludes by calling for T &L research that focuses on the interaction between student agency and context. Other researchers agree with him (Case, 2015; Ertl & Wright, 2008; Hodkinson et al., 2007; Mandal, 2018; Stenalt & Lassesen, 2021). I share the similar sentiments.

The research discussed in the previous sections regarding what is known about T&L in HE and the existing gaps, played a major role in conceptualising this thesis. There is a lack of research that has explored the interaction between structure and student agency in Postgraduate PGME. The unique nature, organisation, and practices in PGME make it an ideal field to explore this relationship. PGME is intricately integrated into healthcare systems making it vulnerable to health systems, socio-political and economic challenges (Nordquist et al., 2019a, b), and thus susceptible to the structural challenges commonly encountered in these settings. Such challenges encompass limited resources and personnel, a high disease burden, and overcrowding (Boughey and McKenna, 2021; Coovadia et al., 2009; Maphumulo and Bengu, 2019; Ncayiyana, 1999; Oleribe et al., 2019; Talib et al., 2019). These challenges are particularly

more pronounced in resource-limited settings such as Sub-Saharan Africa (SSA). South Africa is also no exception.

PGME programs in Africa also encounter various challenges. The most commonly described are, lack of well-defined curricula, inadequate clinical and research supervision, limited expertise in medical education, excessive workload resulting in the prioritization of service over education, academic bullying, gender and racial discrimination and, high burnout rates among medical specialist trainees (Averbuch et al., 2021; Ayyala et al., 2019; Badsar et al., 2012; Baldo et al., 2020; Coovadia et al., 2009; Idowu, 2018; Maphumulo and Bengu, 2019; Mocumbi et al., 2014; Nwachuku, 2019; Ogboghodo and Edema, 2020; Ogundipe et al., 2014; Oleribe et al., 2019; Osseo-Asare, 2018; Talib et al., 2019; Zeijlemaker & Moosa, 2019). These and other factors, have the potential to negatively impact on the provision and quality of PGME, as well as the educational experiences of trainees. Therefore, it is imperative to examine the interaction between these contextual (structural) factors and the agency of trainees in PGME.

While progress has been made in advancing the concept of structure and agency in research related to TAL in mainstream higher education, a quick glance on the literature indicates a lack of similar research in PGME. The paucity of this research in PGME is surprising, considering the numerous challenges documented in this field, especially in Africa (Baldo et al., 2020; Bekele et al., 2013; Enright, 2007; Mbuka et al., 2016; Mocumbi et al., 2014; Ogboghodo & Edema, 2020; Ogundipe et al., 2014; Oleribe et al., 2019; Ossero-Asare, 2018; Talib et al., 2019).

In South Africa, local researchers such as Ellery and Baxen (2015) and Mogashana et al. (2022) have underscored the importance of this research in a quest to gain a deeper understanding of the intricate relationship between structures and agency and the impact on student learning experiences and educational outcomes. They employed Social Realist Theory to analyse the interaction between student agency and structures within an Academic Development Programs (ADP) in engineering education. This study emphasized the crucial role that student agency plays in assisting students navigate complex educational and institutional challenges in HE. Such research would be valuable for understanding TAL in PGME due to its unique position within

health systems (Kilty et al., 2017; Weiss et al., 2018) and the challenges location presents (Boughey and McKenna, 2021; Coovadia et al., 2009; Maphumulo and Bengu, 2019; Ncayiyana, 1999; Oleribe et al., 2019; Talib et al., 2019). This research holds great significance for South Africa, given the ongoing socio-political, health, and educational reforms (Badat, 2010; Bunting, 2006; Coovadia et al., 2009; Mayosi, 2015; Mayosi et al., 2012; Mzangwa, 2019). This type of research is very important during periods of educational reforms (Meyer et al., 2020).

The socio-political and historical context of South Africa, along with the post 1994 socio-political reforms, created numerous challenges in the country's education and public healthcare sectors which are known to have a significant impact on T & L ,student learning experiences and educational outcomes (Badat, 2010; Bunting, 2006; Mzangwa, 2019; Aikman, 2019; Bateman, 2013; Breier & Wildschut, 2006; Coovadia et al., 2009; Dhai ,2023; de Villiers, 2021; Maphumulo & Bhengu, 2019; Mayosi et al., 2012; Ncayiyana, 1998; Pillay 2004). Furthermore, the introduction of the Medical Specialist Certification Framework in 2011 has presented several structural challenges. These challenges include governance-related issues due to the involvement of multiple stakeholders and difficulties faced by trainees in meeting the research requirement for various reasons (Aldous et al., 2014). Consequently, I became interested in exploring how the concept of structure and agency could offer a more nuanced understanding and insight into student learning and the experiences of students within the PGME environment in South Africa.

I embarked on this journey with the hope of igniting a dialogue on the structural issues facing PGME and the role of agency in such circumstances after recognizing the absence of such discourse within the local and global PGME communities. I therefore also hope to contribute to the ongoing global conversation on structure and agency interaction in sociology research and HE by bringing in PGME perspective. Furthermore, I also noticed that most of the existing research on the structure-agency interaction has been conducted from a Social Realist and Critical Theory perspectives and in other disciplines, with very little contribution from other theoretical perspectives, research methodologies, and PGME.

Therefore, in line with my worldview, I believed that investigating this matter through a constructivist/interpretivist lens could improve our understanding of the interplay between structure and agency in student learning. This would allow us to broaden our comprehension of this relationship beyond the prevailing philosophical paradigms, while also addressing the need for research on this topic that incorporates diverse research methodologies and philosophical viewpoints (Case, 2015; Varpio et al., 2017). Consequently, this thesis, influenced by a constructivist/interpretivist standpoint, aims to address the identified gaps.

1.3. The case for postgraduate medical education

Readers may be wonder why I chose to specifically focus on PGME instead of HE in general? While I briefly mentioned some reasons in the preceding sections, I would like to elaborate further on the reasons. Apart from my personal interest as a clinician, clinical and educational manager, and educator, PGME plays a centre stage in the provision of healthcare services worldwide. It plays a vital role in the wellbeing of the society including the economic development of societies (Piabou & Tieguhong, 2017). The above require a competent healthcare workforce to be realised, and PGME plays a significant role in the production of this workforce.

Postgraduate medical students, also known as trainee medical specialists, residents, or registrars, are critical members of healthcare systems worldwide. They are the first point of contact for patients entering the health system across the world (Royal College of Physicians, 2013). Their responsibilities include patient care, teaching and supervision and mentoring of junior doctors as well students from other health professions education (HPE) fields (Brasher et al., 2005). These medical trainees learn while providing healthcare services in real clinical settings, referred to as clinical learning environment (CLE) and as part of communities of practice (Kilty et al., 2017; Lave 1993, Lave & Wenger, 1990, 1991,2016; Weiss et al., 2018). CLEs provides learners with valuable opportunities to develop professional identities and cultivate the necessary professional attitudes and acquire competencies required for clinical practice (Berkhout et al., 2017; Chan et al., 2019; Weiss et al.,2018).

As socio-cultural contexts, CLEs are influenced by a range of factors, with the most significant being the availability of resources, supervision, mentorship, and support (Kilty et al, 2017, Wiese et al.,2018). Other important factors include the quality of social interactions and relationships, in-training assessment and feedback, institutional culture and practices, learner engagement, and motivation (Billet, 2001, 2008, 2009; Billet and Choy, 2013; Billet & Smith 2007; Burdick, 2007;Chan et al.,2019;Kilty et al., 2017; Gruppen, 2019; Nordquist et al.,2019a,b;Talib et al., 2019; Wiese et al., 2018). For learning to be effective in working environments, learners must be provided with sufficient opportunities to learn, appropriate, graduated guidance and support, and must also use the learning opportunities provided to them effectively (Billett, 1994,1995,1996, 1998, 2001, 2002,2004,2006,2008,2009,1010,2015; Kilty et al., 2017; Wiese et al.,2018).

Therefore, contextual factors such as inadequate resources, overcrowding, long working hours, high workload, lack of structure of the training program, curriculum, and insufficient supervision and support, could affect students' ability to learn and quality of their learning experiences (Billet, 2001; Kilty et al., 2017; Wiese at al., 2018). These are among the factors that have been shown to affect the quality of T&L, quality of student learning experiences , their satisfaction with their educational experiences, their physical, emotional and psychological well-being, as well as academic performance(Ajah et al.,2018;Baldo et al., 2020;Bekele et al., 2013;Enright, 2007; Esan et al., 2014; Ezeanoloue, 2012; Ezomike et al., 2020;Fengu, 2021; Gruppen et al., 2018; Jooma et al., 2018;Maphumulo & Bengu, 2019;Mbuka et al., 2016; Mocumbi et al., 2014;Oleribe et al., 2019, Talib et al., 2019). The above emphasises the significance of establishing a conducive learning environment by addressing the factors discussed above.

The factors mentioned above are known to affect CLES, making PGME an ideal platform for conducting research seeking to explore the interaction between student agency and contextual factors. This is type of research that other scholars have called for (Ashwin,2008; Case, 2015; Varpio et al., 2017), deepening our understanding and conceptualisation of T&L in this field (Ashwin, 2008,2009). The research has the potential to provide valuable information on the

impact of structural factors, such as the structure and quality of training programmes, curriculum designs, assessment practices, institutional dynamics, institutional culture, etc., on the learning experiences of students and their educational outcomes (Ajah et al., 2018; Asch et al., 2010; Atsawarungruangkit, 2015; Bansal et al.,2016; Talib et al, 2019). Furthermore, the research could help unravel how these factors impact on students' expression of personal agency, and ultimately their educational performances.

1.4. The case for South Africa

Having justified why I chose to focus on PGME, it is essential to further elaborate on why South Africa is an ideal setting for structure and agency research. South Africa offers a unique opportunity to investigate student learning experiences in relation to student agency and context due to its socio-political history and ongoing socio-economic, education, and healthcare challenges that have their roots during the apartheid era as well as during the process of socio-political reforms. Notably, the healthcare sector in South Africa faces significant challenges, prominent among them being the high burden of diseases, poor quality of the public health services, declining state of academic hospitals poor health outcomes and high medicolegal burden (Don-Waucuope et al., 2010; Maphumulo and Bengu, 2019, Mayosi, 2016; Mayosi et al.,2012; Prinsen, 2023).

The above challenges emanate from multiple factors. These factors include, the enduring effects and legacy of apartheid and colonialism, pervasive corruption, poor quality of leadership, inadequate fiscal policy decisions post the democratic transition, weak economy, and limited resources (Aikman, 2019; Bateman, 2013; Breier & Wildschut, 2006; Bunting, 2006;Coovadia et al., 2009; Dhai ,2023; de Villiers, 2021; Maphumulo & Bhengu, 2019;Mayosi 2015; Mayosi et al., 2012; Ncayiyana, 1998; Pillay 2004). These factors are the consequence of the deliberate neglect of healthcare for the majority Black South Africans during apartheid, as well as the ongoing failure of the post-apartheid government to address these challenges. Students require a sense of agency to thrive in these types of settings (Bandura, 1997,2001,2006; Barnes, 2001, Emirbayer and Mische, 1998; Evans, 2002,2007, 2012).

HE research has revealed a rather concerning picture on the effects of these structural factors on education. Within the higher education sector, these challenges manifests through students' dissatisfaction with their educational experiences, poor quality of teaching and learning, high student attrition rates, psychological and emotional distress, allegations of racism, and low throughput rates (Alzahrani et al., 2014; Amir et al., 2018; Badat, 2010; Beath et al., 2021; Bunting, 2006; Mzangwa, 2019). Similarly, studies examining the challenges in PGME in SSA (Talib et al., 2019) and South Africa for example Patel et al., (2016, 2018) and Peer & Fagan, 2012), have also reported similar challenges. Unlike general HE, PGME studies are limited and predominantly relied on student surveys. While these studies have offered valuable information, they lack the depth required to gain deep insight into the issues at play, particularly, the interaction between the structural factors that have been reported in these settings and the agency of the leaners.

A study examining how trainee medical specialists navigate the challenges within the South African healthcare system and PGME was long overdue and necessary. This type of research is not only essential for generating local knowledge on the subject, but its findings could have implications in PGME in South Africa and beyond. This is because South Africa is recognized as one of the leading destinations for regional and international students who seek to specialize or gain additional clinical experience in various field of medical specialty (Mantica et al., 2019; Peer et al., 2017; Rocke, 2016).

1.5. Apartheid and post-apartheid reforms

In the preceding sections, I made reference to the influence of apartheid and post-apartheid socio-political reforms on the current state of the higher education and healthcare sectors in South Africa. It would be erroneous to presume that every reader of this thesis is thoroughly familiar with the socio-political context in South Africa and the ramifications of the nation's socio-political history on the current challenges faced by the healthcare and education sectors. Therefore, in this section a focused discussion on the major socio-political influences that have shaped the existing healthcare and higher education sectors is provided. The discussion

primarily centres on the contributions of the apartheid era and the subsequent measures implemented after the transition to political democracy in 1994, which have contributed to the current challenges in the education, Healthcare, the economy and other sectors(Altbach et al., 2009; Boughey and McKenna, 2021; Brier & Wildschut, 2006;Bunting, 2006; Bunting et al., 2014;Coovadia et al, 2009; Crawford et al., 2017; Edward & Macmillan, 2015;McArthur, 2021; Scott, 2013; Scott et al., 2007).

Apartheid was a formalized system of socio-political engineering characterized by racial segregation, discrimination, and suppression of the majority of Black South Africans, while simultaneously promoting the interests of White minority groups (Breier & Wildschut, 2006; Coovadia et al., 2009; Tobias, 1980,1983). Upon taking power in 1948, the Nationalist Party (NP) government introduced a series of apartheid legislations and policies and used them to divide the South African population along racial lines (Coovadia et al., 2009; Breier & Wildschut, 2006; Badat, 2010; Bunting, 2006; Robus & MacLeod, 2006). Notable among these legislations were the Population Registration Act of 1950, the Bantu Authorities Act of 1951, the Bantu Education Act of 1953, the Promotion of Bantu Self-Governance Act of 1959, the Extension of University Act of 1959, and the Bantu Homeland Citizen Act of 1970 (https://www.britannica.com/topic/apartheid). All these legislations which were repealed after the democratic transition in 1994, were used to disfranchise the Black majority groups.

The legislations resulted in the establishment of separate residential areas, health and educational systems, and facilities for the different racial groups, to the detriment of Black South Africans (Breier & Wildschut, 2006; Coovadia et al., 2009; Robus & MacLeod, 2006). Healthcare and educational institutions reserved for the exclusive use of White minorities were off-limits to the Black majority groups (Breier & Wildschut, 2006; Bunting, 2006; Coovadia et al., 2009). However, healthcare, and educational institutions and facilities that were built for the Black majority were underfunded, under resourced, and were of poor quality (Breier & Wildschut, 2006; Bunting, 2006; Coovadia et al., 2009; Digby, 2013; Tobias, 1980).

One of the key objectives of the apartheid system was to ensure that the educational opportunities provided to Black individuals were limited to equipping them with only basic skills they needed to serve the apartheid agenda rather than empowering them to attain independence and self-sufficiency (Boughey and McKenna, 2021; Bunting, 2006). The aim was to keep them subservient to the White minority groups. By preventing Black people from accessing educational and health establishments designated for the Whites, while simultaneously confining them to under-resourced and substandard institutions, the Apartheid regime effectively condemned Black people to a life of hardship, impoverishment and death (Bunting, 2006; Coovadia et al., 2009; Davis, 1996; Digby, 2013; Tobias, 1980).

Similar policies were used to regulate access to medical education by the Black population. Consequently, Black students could only pursue careers as medical doctors and specialists by enrolling in institutions specifically designated for their racial or language group, which unfortunately, were very few and of substandard quality (Andronikou, 2012; Digby, 2013; Tobias, 1980). Only few Black students were allowed to enrol in institutions reserved for White students after obtaining permission from the National Minister of Health https://omalley.nelsonmandela.org/index.php/site/q/03lv01538/04lv01828/05lv01829/06lv01898.htm). This was however and exception rather than a rule. Table 1 is a summary of the racial and language arrangements for specialist medical training during the apartheid era.

Table 1: Options for specialist training in South Africa prior to the 1994 democratic transition

Institution	Qualification offered	Language of instruction	Classification	Designated racial group
University of Cape Town	Fellowship of the Colleges of CMSA	English	HWELU*	White students. Limited admission of Black students on ministerial permission.
University of the Witwatersrand	Fellowship of CMSA	English	HWELU*	White students. Limited admission of Black students on ministerial permission
University of Natal (Black section)	Fellowship of CMSA	English	HWELU*	While the University of Natal was reserved only for White students, the medical school was built for Black students. ***

Institution	Qualification offered	Language of instruction	Classification	Designated racial group
University of Pretoria	MMed in respective discipline	Afrikaans	HWALU**	White students. Used language to exclude Black students.
University of the Free State	MMed in respective discipline	Afrikaans	HWALU**	White students. Used language to excluded Black students.
University of Stellenbosch	Mmed in respective discipline	Afrikaans	HWALU**	White Students. Used language to exclude Black students.
Medical University of South Africa (MEDUNSA)	MMed in respective discipline	English	HBU***	Black students

*HWELU: Historically White English Language University

**HWALU: Historically White Afrikaans Language University

*HBU: Historically Black University

The transition to constitutional democracy in 1994 brought about new hope and at the same time, new challenges (Boughey and McKenna, 2021; Bunting, 2006; Coovadia et al., 2009; Ncayiyana, 1999). The idea of freedom and equal treatment ignited significant hope among the marginalized and disenfranchised members of South African society. Indeed, Black people had the reasons to be hopeful. The political reforms promised autonomy, the right to dignity, accesses to economic opportunities and, quality healthcare and education for everyone.

However, these aspirations and hopes were soon dashed by various sociopolitical, healthcare, and educational challenges and failures, most of which were discussed in previous sections.

These challenges have led to the gradual decline in the quality of education, generated high level of stress among students, low retention rates, high dropout rates, high failure rates, and an increasing number of student protests due to various issues such as academic failures, educational exclusions and finance related challenges(Bunting, 2006; de Villiers, 2021; Dhai,2023 Mekoa, 2018; Masenya, 2021; Mzangwa, 2019). All the above took place within a background of high burden of diseases, inadequate and poor quality of care (Coovadia et al., 2009; de Villiers, 2021; Dhai ,2023; Maphumulo and Bhengu, 2019; Mekoa, 2018; Masenya, 2021; Mzangwa, 2019; Ncayiyana, 1999). These structural challenges not only affected the country's reform process but also posed a threat to the quality of education, healthcare, and the future of South African's youth. These and other challenges, continue to plague the South African education and health sectors to date.

Upon ascending to power in 1994, the Government of National Unity (GNU) under the leadership of the world renowned stateman and politician, Nelson Rolihlala Mandela, embarked on program of socio-political, healthcare and education reforms. The aim was to establish an inclusive and unitary quality healthcare and education systems and a just society (Breier and Wildschut, 2006; Bunting, 2006; Coovadia et al., 2009, Department of Education, 1997; Mzangwa, 2019). Three notable policies, the Reconstruction and Development Program (RDP), White Paper 3, A Programme for Transformation of Higher Education and the White Paper for the Transformation of the Health System, were introduced to bring about these reforms (Department of Education, 1997; Department of Health, 1997).

Although some progress has been achieved in this matter, challenges such as inadequate financial management and corruption persist, impeding the reform project (Aikman, 2019; Dhai, 2023; Maphumulo and Bhengu, 2019). Others attribute the ongoing challenges in the education and healthcare sectors to the political compromises that were made during the political transition (Boughey and McKenna, 2021). Whilst the assessment is likely to be correct,

it would be unwise to overlook the impact of apartheid policies, their lasting effects, and the continued shortcomings of the ANC-led government, its policies and leadership over the past three decades.

In the field of HE, the reform led to the establishment of a national Higher Education Qualification Framework (HEQF), as well as mergers between universities, including between Universities and Technikons. Additionally, a National Student Fund (NFSAS) was established to improve access to HE for the previously marginalized students (De Villiers et al., 2012). Medical schools opened their doors to all racial groups and adapted curricula to align with the primary healthcare (PHC) approach, which the government adopted as a guiding principle for the delivery of the country's healthcare services (Reid & Burch, 2011; Colborn, 1995; Kent and De Villiers, 2007; Ncayiyana, 1999). The reform also resulted in improved access to specialist medical education for historically disadvantaged groups (Khine and Hartman, 2021), and the introduction of a single national specialist certification framework in 2011 (HPCSA, 2010). This new arrangement was aimed at eliminating the fragmented and multiple specialist training and certification pathways, establish a unified, quality-assured national medical specialist certification system, and align specialist training with HEQF (HPCSA, 2010).

However, the introduction of the new specialist framework has led to the development of a complex management system and, several challenges in terms of accountability. The management of this framework involves multiple stakeholders that include, Provincial Departments of Health (PDoHs), the Health Professions Council of South Africa (HPCSA), the Colleges of Medicine South Africa (CMSA), and universities. The PDoHs, whose primary responsibility is patient care, serve as the main employers of trainee medical specialists and full-time consultants/clinical trainers. Both trainees and consultants are appointed as joint employees, with trainees dividing their time equally (50:50) between work and training, while consultants have a split of 70:30 in favour of clinical work over academic responsibilities. This arrangement often create tension between service and education.

The HPCSA is the primary regulatory body for HPE and healthcare practice in South Africa. Its responsibilities include establishing standards for training and practice, accrediting HPE training programs, and issuing practice licenses to healthcare practitioners. The CMSA, a non-profit professional organization established in 1954, has been granted the exclusive authority to administer national specialist examinations through a renewable five-year contract after signing a memorandum of understanding (MOU) and Service Level Agreement (SLA) with the HPCSA (CMSA, 2014, 2019). Additionally, the CMSA has entered into a bilateral agreement with the South African Committee of Medical Deans (SACOMD) to conduct specialist certification on behalf of all medical schools in South Africa (CMSA. 2015).

The CMSA consists of 35 constituent colleges that encompass various medical specialties (CMSA, 2019). However, its qualifications are not recognized by SAQA and possibly this was behind the decision was made to pair it with the university Master of Medicine (Mmed) degree. This complex arrangement presented and continues to governance related challenges due to the multiple accountability pathways and the differing interests of stakeholders involved, particularly medical schools (training) and PDoHs (patient care). Research has highlighted that the relationship between teaching hospitals and universities is not always collaborative due to these competing interests as well as power dynamics (Chervenak & McCullough, 2005; Risse, 1986). It is not unexpected for the individuals involved to find themselves being pulled in contrasting directions.

Furthermore, healthcare reforms in South Africa and the implementation of the PHC approach have led to unintended consequences. These include, straining of academic and teaching hospitals due to the reallocation of resources from tertiary hospitals to support PHC services, rising burden of diseases such as HIV and AIDS, abuse of RWOPs and inadequate healthcare personnel (Coovadia et al., 2009, Don-Wauchope et al., 2010). The above have been further compounded by migration of specialists from public and teaching hospitals to the private sector and overseas in search of greener pastures (Bateman, 2012, 2013; Don-Wauchope et al., 2010). To address the mass exodus of specialists from the public to the private sector, the government introduced occupation-specific dispensation (OSD) and remuneration for work done outside the

public service, also known as RWOPS (Bateman, 2012, 2013; Mayosi & Benatar, 2014; Mayosi et al., 2012; Shipalana, 2019). The primary purpose of this arrangement was to improve the financial income of specialists working in the public sector in order to retain them within the public sector. However, reports suggests that such intervention is not working. Students and registrars are being left without supervision as specialists prioritize RWOPS over clinical services and teaching (Bateman, 2012, 2013). Alongside poor leadership, corruption, a weak economy, the quality of public healthcare, medical education, and research output in the country continue to be on a downward spiral (Assaf, 2015; Cherry, 2012; Don-Wauchope et al., 2010; Maphumulo & Bengu, 2019; Mayosi et al., 2012; Treatment Action Group; Van Staden, 2021).

The inclusion of a research component in the national specialist certification framework introduced additional challenges. These challenges include trainee medical specialists' inability to complete the mandatory research project within the designated timelines due to heavy service loads, their lack of research experience, shortage suitably qualified research supervisors, limited protected research time, and inconsistent research requirements across medical schools (Biccard et al., 2017; Moxley, 2022; Rout et al., 2018). As a result, the introduction of the research component has sparked a debate, with individuals taking opposing positions.

Opponents argue that conducting research is not essential for acquiring professional qualifications, while proponents argue that specialists must be proficient in research to practice evidence-based medicine (Grossman, 2019; Moxley, 2022; Patel et al., 2016; Szabo and Ramlall, 2016). Evidence-based medicine is a fundamental and indispensable component of modern medical practice. Despite the advantages of ensuring research competence among trainee medical specialists, this issue remains a significant challenge as trainees continue to struggle to fulfil this requirement (Grossman, 2019; Moxley, 2022; Patel et al., 2016; Szabo and Ramlall, 2016).

1.6 . Problem statement

Having outlined the challenges in HE, PGME, and the public healthcare sector in South Africa, I will now shift my focus to the research gap that this thesis aims to address. According to Miles (2017), there are seven types of research gaps. These are, evidence, knowledge, practical, methodological, empirical, theoretical, and population gap. This thesis specifically focuses on the knowledge and theoretical gaps within the PGME environment in South Africa with special focus on specialist medical education. It has been reported that there are limited studies that utilize the concepts of structure and agency to explore teaching and learning in HE globally (Ashwin, 2008, 2009; Case, 2015; Ertl and Wright, 2008; Hodkinson et al., 2007; Mandal, 2018; Stenalt and Lassesen, 2021). This includes studies that employ different research methodologies and theoretical perspectives (Case, 2015; Khan et al., 2012; Varpio et al., 2017). A quick literature search confirmed lack of similar studies in PGME.

As part of ongoing socio-political and education reforms, a new Medical Specialist Certification Framework was implemented in South Africa in 2011 (HPCSA, 2010). The objective of this framework was to establish a unified, nationally recognized, quality assured structure for medical specialist qualifications, and to align specialist training with the National Qualifications Framework (HEQF) (Council for Higher Education). Despite the good intentions, the framework has resulted in unintended consequences encompassing significant governance and accountability issues arising from conflicting interests among key stakeholders, trainees facing difficulties in fulfilling the research requirement included in the new framework, high failure rate in specialist exit exams and trainees' dissatisfaction with the arrangement (Child 2019; Don-Wauchope et al., 2010; Grossman 2019, 2020).

All the above occurs in the background of ailing public health system which is the primary platform for medical specialist training. Therefore, trainees need agency to navigate the complex public sector (primary educational environment for specialist training) to effectively learn and realise their dreams of becoming medical specialists. The above fall within the scope of the structure and agency research that researchers have called for, with the aim of

deepening our understanding of T &L, as well as students' learning experiences in HE (Ashwin, 2008, 2009; Case, 2015; Ertl & Wright, 2008; Hodkinson et al., 2007; Mandal, 2018; Stenalt & Lassesen, 2021). Despite the challenges, there is a dearth of research that explored students' experiences within PGME in South Africa and beyond. Therefore, this thesis aims to fill this gap by examining the role played by student agency in effectively navigating educational challenges within the South African medical specialist training environment.

1.7. Significance of the study

This study addresses the need for research that combines student agency and context, as well as research that utilizes various methodologies and theoretical perspectives to enhance our understanding of T&L in, HE (Ashwin, 2008, 2009; Case, 2013, 2015; Ertl & Wright, 2008; Haggins, 2003; Hodkinson et al., 2007; Mandal, 2018; Stenalt & Lassesen, 2021; Varpio et al., 2017). The study therefore contributes to the existing global literature on this subject. Moreover, it offers an African perspective on the worldwide discourse concerning medical education reform and the associated challenges (Gukas, 2007). The thesis also establishes a basis for local discussions on the interplay between structures and agency in student learning within the PGME/medical specialist training environment. From a practical standpoint, this study provides valuable insights into the difficulties faced by trainee medical specialists in study settings, including underscoring the importance of agency in navigating challenges within PGME learning environments. These findings can be utilised to design targeted interventions aimed at improving specialist medical education training programmes in affected and similar contexts, including informing educational policy decisions. Lastly, through this thesis, I aim to contribute to the global conversation on students' learning experiences in HE and the significance of agency and structure research in this field.

1.8. Aim of the study

This study aimed to explore the lived experiences of trainee medical specialists within the South African specialist certification framework that first came into operation in 2011, the challenges they faced, trainees' navigational strategies and factors that informed their choice of strategies

and use the information to construct a theoretical model that explains the trainees 'experiences. The results are also used to make recommendations to improve medical specialist training in study site and hopes to influence policy directions.

1.9. Research questions.

- Research Question 1: How do trainee medical specialists in Medicine, Obstetrics and Gynaecology, Paediatrics and Surgery undergoing specialist training in medical schools in Gauteng Province, South Africa, describe their lived experiences of specialist training?
- Research Question 2: What challenges do the trainees encounter during their training?
- Research Question 3: How do they respond to these challenges?
- Research question 4: What informs their responses and choice of strategies?
- Research Question 5: What strategies do the trainees use to overcome the challenges they face?
- Research Question 6: How can the trainee medical specialists' lived experiences be understood and conceptualised using a theoretical model?
- Research Question 7: How can the information from this research be used to inform education policy and practice?

1.10. Research objectives.

The research focused on the following objectives:

- Objective 1: Conduct semi-structured interviews to gather in-depth and comprehensive data on the lived experiences of trainee medical specialists.
- Objective 2: Employ semi-structured interviews to explore the challenges encountered by trainee medical specialists, the nature of these challenges, and their impact on educational experiences.
- Objective 3: Utilize semi-structured interviews and the constant comparison analysis to collect information on how trainee medical specialists adapted and responded to the challenges they faced.

- Objective 4: Utilize semi-structured interviews, constant comparison analysis, and memo writing to investigate individual factors (e.g. past experiences) and other influences (e.g. social support) that shaped the responses of trainee medical specialists to these challenges.
- Objective 5: Investigate the strategies employed by trainee medical specialists to overcome the challenges encountered using semi-structured interviews.
- Objective 6: Analyse patterns and develop a model to explain the experiences of trainee medical specialists through semi-structured interviews, constant comparative analysis, and memo writing.
- Objective 7: Share the study results with the HPCSA, the Department of Health, CMSA, SACOMB, and Universities to contribute to the ongoing medical specialist training programs reforms and for review of institutional practices.

1.11. Outline of the rest of the thesis

Chapter 1: This introductory chapter presented the background of the study, laying a foundation for the rest of the following chapters. Furthermore, the chapter offers a detailed explanation of the impact of the socio-political environment on society, higher education, and healthcare during and after apartheid.

Chapter 2 presents a literature review on the structure agency debate, highlighting key constructs, and how the debates contribute to this study.

Chapter 3 focuses on the research methodology, describing in detail the steps and procedures undertaken in collection and analysis of data, including the underlying assumptions.

Chapter 4 presents the results of the study.

Chapter 5: The theoretical model is presented and interpreted.

Chapter 6 discusses the results in the context of existing literature on the subjects.

Chapter 7: Contributions, future research directions and limitations are presented.

Chapter 8 presents recommendations.

CHAPTER 2: STRUCTURE AND AGENCY DEBATE

2.1. Introduction

In Chapter 1, I presented the background, problem statement, significance, aim, research questions, and objectives of the study. The focus of this chapter is on the main theoretical debates surrounding the relative importance of structure and agency in influencing social life. As a result of the vast amount of literature available on this subject, this discussion will be limited to the literature that has generated my interest in the topic, thus contributing to the focus of this thesis.

The purpose of the literature review is to provide readers with a synthesis of the core literature, or key concepts related to the topic of interest. This is done to position the study within the existing body of literature and to establish the research gap, value, and contribution of the research to the existing understanding and literature about interest (Denney & Tewksbury, 2013; Cisco, 2014). This chapter aims to achieve the same objectives.

The purpose of this study was to explore the lived experiences of trainee medical specialists within the South African specialist certification framework that was first implemented in 2011. The study aimed to identify the challenges they faced, examine the strategies they utilized, explore the factors that influenced their choice of strategies and construct a theoretical model that explains these experiences. Furthermore, the aim is to use the results of the study to make recommendations to improve specialist training in South Affrica and influence educational policy direction. The recommendations appear at the conclusion of the thesis. This literature review follows Lingard's (2018) recommendations for writing a literature review. It begins with a summary of the key concepts of each debate, its contributions and existing weaknesses or gaps.

2.2. The Structure-Agency Debate

2.2.1. The debate

The structure and agency debate is a longstanding topic of discussion in the field of social sciences, which remains unresolved (Crossley, 2021). This debate carries significant importance because it forms the basis for understanding social life and human actions. It aims to address the following questions: which holds primary influence over social life, structure, or agency? Do individuals possess the capability to overcome structural limitations, and if so, to what extent? Do individuals have the autonomy to make independent choices, or are their choices determined and controlled by external social forces? These are practical questions that permeate all areas of the social life.

For many years researchers have tried to resolve these questions with varying success. They tried to provide insight regarding the relative influence between structure and agency in shaping human actions. Structure refers to the organization and practices within society (such as rules, norms, resources, institutional practices, power dynamics, etc.) that enable or restrict the actions of individuals (Archer, 2000, 2003, 2004,2007, 2014; Barker, 2012; Hewson, 2010; Giddens, 1984, 1986). Structure on the other hand, is the medium through which human agency is expressed which also influences the choices and actions of individual actors (Archer 2003, 2004; Giddens, 1984). Agency refers to the capacity of individuals to act, ability to make independent choices and direct their own lives (Archer, 2000, 2003, 2004, 2014; Barker, 2012, Emirbayer & Mische, 1998). This debate is therefore important in that it can provide deep and nuanced understanding about many aspects of social life including the interaction between structure and agency in PGME. There three main schools of thought on the structure and agency debate. These are discussed below.

2.2.2. *Determinism or structure-centric perspective*

Determinism or Structuralism prioritizes structure over human agency. It asserts that all events and human behaviour are predetermined by the objective external factors that are beyond the control of individuals. It rejects the idea that individuals have the power to make their own choices, circumvent the structural constraints and determine the course of their own lives. Examples of proponents of this view are Émile Durkheim (1933, 1938, 1956), Karl Marx (2000), Lévi-Strauss (2009); Talcott Parsons (2015) and John B Watson (1913). Émile Durkheim, widely regarded as a founding figure in sociology, introduced the Theory of Social Determinism, which suggests that human behaviour is influenced by irreducible social forces that cannot controlled by individual actors (de Almeida, 2015; Durkheim, 1956; Durkheim & Lukes, 1982). This view places human beings at the mercy of structural forces.

Similarly, Karl Marx, through his Theory of Economic Determinism, argued that society is shaped by economic structures (Llobera, 1979). He went further to argue that economic structures, power dynamics and social class have deterministic and constraining power on the agency of individuals. Accordingly, like Durkheim, Karl Marx viewed individuals as helpless with no sense of agency. Like the other two, Watson, an environmental behaviourist, believed that human behaviour is solely shaped by environmental factors, dismissing the role of human choice (Watson, 2013).

All the perspectives mentioned above have one thing in common: they deny the role of human agency, assigning primacy of power on structures over agency. Albert Bandura (2001, 2006), a Social Cognitive theorist, refutes determinism' prepositions, argued that human beings possess a sense of self and agency, capacity to make rational decisions and to act intentionally in pursuit of personal goals (Bandura, 1977,2001, 2006). I concur with Bandura's position but don't agree with his take that human being always make choices out or rationality. Doing so would be to ignore the role played by emotions in making decisions. Human beings make decisions based on either some form of rational or emotions (Bandura, 2006; Code, 2020; Marginson, 2013).

The role of agency in influencing human behaviour is also supported by Billet (2001). He emphasized in his writings that learner agency and affordances are both essential for workplace learning. Learners must utilize the learning opportunities provided to them. Through his research, Billet viewed agency as the capacity to act and make choices in pursuit of personal goals. Ignoring the roleplayed by human agency could have devastating effect in society. Structuralist /deterministic conception of society could be used as political tools to justify disempowering individuals by making them believe that their situation has been predetermined by forces of nature and as a result, they have no power to change the situation. This could be detrimental in the South African context where a similar ideology was advanced by the apartheid regime (Coovadia et al., 2009; Davis 1996; Digby, 2013; Nkomo, 2021; Soudien, 2009; Tobias, 1980,1983).

2.2.3. *Individualism or agency-centric*

The second perspective is positioned at the opposite end of Structuralism (Determinism), assigning deterministic power to human agency instead of social structures. It rejects the deterministic view, arguing that this view dehumanizes human beings (Emirbayer and Mische, 1998, Bandura 2001, 2006 Code 2020). This perspective posit that human beings are motivated, have forethought, are self-reflective, intentional in their actions, and have the capacity for self-regulation (Bandura, 2001; Chuang 2021; Cook and Artino, 2016; Coral et al.,2020; Duckworth, 2016; Dewey .1922; Hale et al.,2018). The individualistic perspective does not view society as having immutable powers over human beings, instead individuals are seen as having capacity and power to direct their own life including capacity to overcome structural constraints (Code, 2020, Duckworth, 2016).

Several philosophers are associated with this perspective, amongst them, Albert Bandura (2001, 2006), Brooks (2012), Carl Rogers (1959, 1961), Emirbayer and Mische (1998), Foucault (1997), Hegel (Brooks, 2012), and Max Weber (1978). For example, Weber (1978) argued that individuals have the power to attain whatever they desire, even when faced with constraints or resistance. A similar view has been advanced by Duckworth (2016). In other words, the

proponents of this perspective hold the view that human beings are autonomous agents with the ability to determine their own destiny, regardless of social structures or circumstances. The above message can be seen in Duckworth's (2016) concept of grit and Rational Choice Theory (RCT) (Code, 2021; Emirbayer and Mische, 1998).

Grit refers to an individual's ability to overcome adversity in pursuit of personal passions and long-term goals (Duckworth, 2016). While it is true that grit contributes to students' success and the development of resilience, Duckworth's (2016) portrayal of grit seems to imply that success and failure are solely determined by an individual's abilities and efforts, completely disregarding the role of social structures and context (Kundu, 2017; Kundu and Noguera, 2020; Tough, 2013). Failure is therefore seen as a weakness of individual. Rational Choice Theory (RCT) suggest when confronted with structural constraints, individuals demonstrate rational decision making and weight different options before deciding on the course of action (Barnes, 2001; Code, 2021; Emirbayer and Mische, 1998).

Rationality suggests a clear coherent plan aimed at maximising chances of success and minimising failure (Baert and Da Silva, 2010). RCT has been criticised for suggesting that any failure is a result of the learner's incompetence, and for ignoring the impact of structures on individual's performance (Valencia, 2006). We can conclude from the above that the Individualist perspective portrays human beings as always rational in their decision making, powerful and immune to structural forces. This assertion is unfortunately far from being true. Social structures are known to either enable or constrain the agency of individuals (Archer, 2003; Billet, 1994. 1995, 2001, 2002, 2004, 2006, 2008, 2009, 2010, 2015). It is also not true that human decisions are always based on rational thinking. Emotions plays a major role in decision making.

2.2.4. *Integration of structure and agency*

The third perspective aims to reconcile the relationship between structure and agency, positioning itself midway between Structuralism and Individualism. Several theories fall under this category. For purpose for this thesis, only Giddens' (1984) Structuration Theory, Pierre Bourdieu's (1977, 1986, 1990) Habitus and Field, and Margaret Archer's (2003) Social Realist and Morphogenesis theories are discussed. While all of them agree that agency and structure are interdependent and cannot be viewed in isolation, they differ in their conceptualisation of the relationship and mediating factors between them.

Giddens' (1984) Structuration Theory posits that agency and structure are mutually constitutive and interdependent, thus cannot be analysed separately. He refers to this as the duality of structure and agency. Accordingly, he uses the term 'dialectical' to suggest that structures both enable and constrain human agency, while also being transformed by human actions. Additionally, he views structures as products of human agency, implying that human beings are responsible for creating and maintaining structures. Structuration Theory provides a nuanced understanding of the interaction between structure and agency, acknowledges the reciprocal influence between the two. Additionally, this theory recognizes the complexity of human action and its influences, including cultural, historical, and institutional factors. However, what is perhaps a weakness of this theory, is its abstract nature, making it difficult to put this theory into practice. The concept of the duality between structure and agency implies the coexistence of both elements, raising the question of where one begins and the other ends. Blurring these distinctions hampers the application of the theory in real life environment. Additionally, by suggesting that the influence between structure and agency is constitutive and bidirectional, the theory appears to disregard the inherent unequal power dynamics that exist within society. This power dynamics influence the individual’s ability to exercise personal agency (Archer, 2003).

Pierre Bourdieu (1977, 1986) also made significant contributions to the structure-agency debate. He attempted to offers a more flexible conceptualisation of the interaction between

them. His concepts of habitus, field, and capital have been particularly useful in trying to resolve the tension between structure and agency He used habitus to refer to internalized dispositions, habits, and mental frameworks that individuals develop during socialisation. These factors influence their perceptions of social life and how they act and interact with others and the environment. Field, on the other hand, refers to the structured spaces or domains of social life where individuals compete for positions, prestige, and resources. These spaces or domains are inherently prone to power dynamics.

Habitus is shaped by the field and the interactions that occur within it. Consequently, different people have different habitus which affect their internal and external outlook as well as opportunities that are available and accessible to them. For example, apartheid created different habitus for the different racial groups which in turn determined their access to resources and other opportunities. Bourdieu identifies four different forms of capital that individuals and groups use to navigate social fields. These are, economic (financial resources), social (family, other social relationships, and networks), cultural (knowledge, skills, and cultural assets), and symbolic (status and recognition) capitals. By presenting habitus and capitals and mediating factors between structure and agency, Bourdieu provided a useful framework to study the interaction between structure and agency. While useful, his emphasis on the mediating effects of capital and habitus could potentially be misconstrued as justifying social class distinctions. This view is therefore problematic.

Archer's (1995, 2003) Social Realist and Morphogenesis Theory also seeks to reconcile the concepts of structure and agency. Like Giddens (1984), Archer (1995, 2003) acknowledges their interdependence but criticises Giddens for suggesting that the two are inseparable. Instead, she argues that structure and agency possess distinct emergent properties and therefore should be analytically differentiated. Furthermore, she asserts that failing to differentiate between the two would impede our understanding of their relationship and interaction (Archer, 1995, 2003). Additionally, she expands upon the notion of structures outlined by Giddens (1984) by introducing culture as one of the structural factors that impact on the individual's capacity to exercise agency.

Unlike Giddens (1984) who seems to conflate structure and agency, Archer's (2003, 2007) employs the concept of reflexivity to reconcile and establish a connection between them. This approach facilitates the practical application of her theory. She regards "reflexivity" as a vital attribute of human agents that acts as a mediator between structure and agency. Individuals utilise reflexivity to evaluate their personal endeavours or projects in relation to social structures or constraints presented to them by their environments. Human agents use reflection to choose the most appropriate course of action when confronted with structural limitations (Archer, 2007). Archer outlines four modes of reflexivity (2003, 2007): autonomous, communicative, meta, and fractured. Individuals who employ autonomous reflexivity engage in internal deliberation before acting. They do not need external validation for them to act. Communicative reflexives seek validation from others before making decisions and acting. Meta-reflexive individuals critically evaluate their own internal conversations and the likelihood of success in each task to the extent that they may become indecisive or paralyzed. Fractured reflexives become disoriented and distressed when faced with challenging tasks or structural constraints due to their inability to engage in meaningful and purposeful internal dialogue.

The following examples serve to illustrate the role played by reflexivity in influencing human action. The first study (Allery and Baxen, 2015) explored the utilization of agency by a student from a disadvantaged socio-economic background. The student's objective was to overcome structural challenges in order to successfully pursue higher education. He achieved this by considering his personal ambitions against the social structural reality, enabling him to find navigate the challenges he was facing and achieved his dream. Similarly, Mogashana et al. (2022) conducted a study among Engineering academic development programme (ADP) students, also demonstrating the utility of reflexivity in studying the interaction of structure and agency. In addition to the positive effect of autonomous reflexivity demonstrated in the Allery and Baxen (2015), the study by Magoshana et al (2022) also highlighted the negative effects of fractured reflexivity and the role played by peer support in enabling the agency of this group of students. The two studies therefore suggest that reflectivity has an enabling as well as paralysing effects on individuals' expression of agency. The last study positioned social support as an important mediator between structure and agency in addition to reflexivity.

2.3. Implications for the study

Having examined the key schools of thought surrounding the ongoing discourse on the interaction between structure and agency, I would now like to readdress the thesis and delve into the implications that the structure-agency debate holds for this study. The challenges facing PGME, and public health systems globally, regionally, and locally were discussed in previous sections. These challenges encompass health system factors and PGME-specific challenges, both of which have the potential to impose structural obstacles on the educational experiences of PGME students and their ability to achieve their aspirations.

In South Africa, the predominant health system-related challenges include shortage of resources (human, infrastructure, equipment), a high burden of diseases, overburdened and overcrowded health facilities, poor health system leadership and governance, corruption, misuse of public funds and RWOPS and, other factors. (Bateman, 2012. 2013; Cherry, 2012; Don-Wauchope et al., 2010; 1999; 2007; Maphumulo& Bengu, 2019; Mayosi et al., 2012; Ncayiyana, 1999; Treatment Action Group; Van Staden, 2021). These factors reflect the ongoing legacy of apartheid and failures of sociopolitical and education reforms and have potential to restrict the training of medical specialists and other HPE students.

Challenges facing PGME were also presented in previous sections. These include lack of structure of training programs, inadequate medical education expertise, insufficient supervision (research and clinical) and feedback, bullying and, gender and racial discrimination (Di Somma et al., 2014; Esan et al., 2014; General Medical Council, 2016; Fiseha et al., 2021; Grossman, 2019;Jan and Jan, 2015;London et al., 2009; Menon, 2018; Moxley , 2022;London et al., 2009; Ngumeni et al., 2022; Nimer et al., 2021; Nwachuku,2019; Osseo-Asare et al., 2018; Patel, 2016;Patel et al., 2018; Ross et al., 2017; Szabo and Ramlall, 2016; Thackwell et al, 2016; 2017;Talib et al., 2019; Yusufu et al., 2010; Van Staden, 2021). The above all fall under the definition of structural and cultural constraints (Archer, 2003, Giddens, 1984) described previously.

The importance of agency in enabling students to navigate the intricate and complex educational landscape, including overcoming education barriers in higher education has been highlighted by other researchers (Biesta, 2006; Biesta and Tedder, 2006; Klemenčič, 2015, 2017,2020,2022; Vaughn, 2020). Consequently, the student agency is one of the focal points of the Organisation for Economic Cooperation and Development (OECD) Learning Framework 2030 (OECD, 2018). It is important to note that the while the OECD (2018) acknowledges that student needs agency to navigate complex educational settings, it also the positions supportive environments as an important enabler of this agency.

While there are numerous definitions of agency, the most common definition appears to be the ability of individuals to overcome adversity in pursuit of personal aspirations and take control of their lives (Bandura, 2001; Emirbayer and Mische, 1998; Klemencic, 2015; Kundu, 2017; Vaughn, 2020). Evidence suggests that agency enables students to function independently, navigate complex educational environments, overcome challenges, and become engaged citizens who make meaningful contributions to society (Bandura, 2001; Biesta& Tedder, 2006; Kundu, 2017). Considering the reported challenges, it was of utmost importance to investigate how trainee medical specialists navigated specialist training in South Africa. This research provides insight on the structural challenges faced by trainees, including how they navigate them.

2.4. Conclusion

In this chapter, the three most dominant schools of thought regarding the relationship between structure and agency were presented, followed by a discussion on the implications of the debate for the current study. Structuralism (Determinism) and Individualism represent two opposing ends of the spectrum when it comes to understanding the interplay between structure and agency. However, neither of them accurately captures the complexities of social life. Notwithstanding its gaps, Archer's Social Realist Theory offers valuable insight on the interaction of structure and agency, especially with her concept of reflexivity as an important mediator of this relationship. However, Archer's theoretical perspective does not explicitly

acknowledge the significance of social support and, to some extent, personal history as important mediators in this dynamic and complex relationship. This one of the gaps in the current conception of the relationship between structure and agency that is addressed in this thesis.

CHAPTER 3: METHODOLOGY

3.1. Introduction

The purpose of this chapter is to provide a comprehensive account of the steps and procedures taken in the collection and analysis of data using the Constructivist Grounded Theory research methodology (CGTM). A detailed discussion on the rationale behind selecting CGTM is also included. Furthermore, the chapter addresses the research questions, study context, methodology, study participants, data collection and analysis, ethical considerations, and the trustworthiness of the study. The researcher's reflectivity is then presented, followed by a summary and conclusion.

3.2. Research questions.

This study aimed to explore the lived experiences of trainee medical specialists within the South African specialist certification framework that first came into operation in 2011, the challenges they faced, trainees' navigational strategies and factors that informed their choice of strategies and use the information to construct a theoretical model that explains the trainees 'experiences. The results are also used to make recommendations to improve medical specialist training in study site and hopes to influence policy directions. The study sought to answer the following research questions:

- Research Question 1: How do trainee medical specialists in Medicine, Obstetrics and Gynaecology, Paediatrics and Surgery undergoing specialist training in medical schools in Gauteng Province, South Africa, describe their lived experiences of specialist training?
- Research Question 2: What challenges do the trainees encounter during their training?
- Research Question 3: How do they respond to these challenges?
- Research Question 4: What informs their responses and choice of strategies?
- Research Question 5: What strategies do the trainees use to overcome the challenges they face?

- Research Question 6: How can the trainee medical specialists' lived experiences be understood and conceptualised using a theoretical model?
- Research Question 7: How can the information from this research be used to inform education policy and practice?

The focused of the research were on the following objectives:

- Objective 1: Conduct semi-structured interviews to gather in-depth and comprehensive data on the lived experiences of the participants trainee medical specialists.
- Objective 2: Employ semi-structured interviews to explore the challenges they encounter, the nature of these challenges, and their impact on their educational experiences.
- Objective 3: Utilise semi-structured interviews and the constant comparison analysis to collect information on how the trainee medical specialists adapted and responded to the challenges they faced.
- Objective 4: Utilise semi-structured interviews, constant comparison analysis, and memo writing to investigate individual factors (e.g. past experiences) and other influences (e.g. social support) that shaped their responses to these challenges.
- Objective 5: Investigate the strategies employed by trainee medical specialists to overcome the challenges encountered using semi-structured interviews.
- Objective 6: Analyse patterns and develop a model to explain the experiences of trainee medical specialists using semi-structured interviews, constant comparative analysis, and memo writing.
- Objective 7: Share the results of the study with the key stakeholders (HPCSA, the Department of Health, CMSA, SACOMB, and Universities0 to contribute to the ongoing medical specialist training programs reform and for the review of institutional practices.

3.3. Study context.

This study was conducted in Gauteng province. The focus of the study is on specialist medical training. The research investigated the experiences of medical specialists under the national

specialist certification framework that was introduced in South Africa in 2011 (HPCSA, 2010). Gauteng province is one of South Africa's nine provinces (Fig 1). Despite being the smallest among the nine provinces, it is home to 25.3 % of South Africa's 63 million population which speaks 11 languages and has a GDP of US$ 135 billion (https://www.statssa.gov.za/?p=17430#:~:text=South%20Africa's%20population%20has%20now,July%202023%20to%20July%202024). It is therefore the wealthiest among the nine provinces, and its economic status attracts internal and cross-border migrants.

There are ten medical schools spread over seven of the country's nine provinces. Gauteng has the highest number of medical schools with three, while Eastern Cape and Western Cape provinces have two. The remaining provinces, namely Free State, Kwazulu-Natal, and Limpopo, have one medical school each. Of the three medical schools in Gauteng Province, one is associated with Sefako Makgatho Health Sciences University or SMU (formerly known as the Medical University of South Africa or MEDUNSA), another with the University of Pretoria (UP), and the third with the University of the Witwatersrand (Wits).

These universities and their medical schools were originally established under apartheid to cater exclusively to different racial groups. The University of Pretoria was founded for White Afrikaans-speaking students, MEDUNSA (now SMU) for Black students, and the University of the Witwatersrand (Wits) for predominantly English-speaking White students. The University of the Witwatersrand, with its extensive training platform, boasts the largest population of postgraduate medical trainees in South Africa. Overall, Gauteng has the highest number of trainee medical specialists in the country. Moreover, the province is also home to the HPCSA and the CMSA. The main office of the CMSA is in Parktown, Johannesburg, with two additional offices in the Western Cape and Kwazulu-Natal provinces. These factors made the province an ideal location for this study.

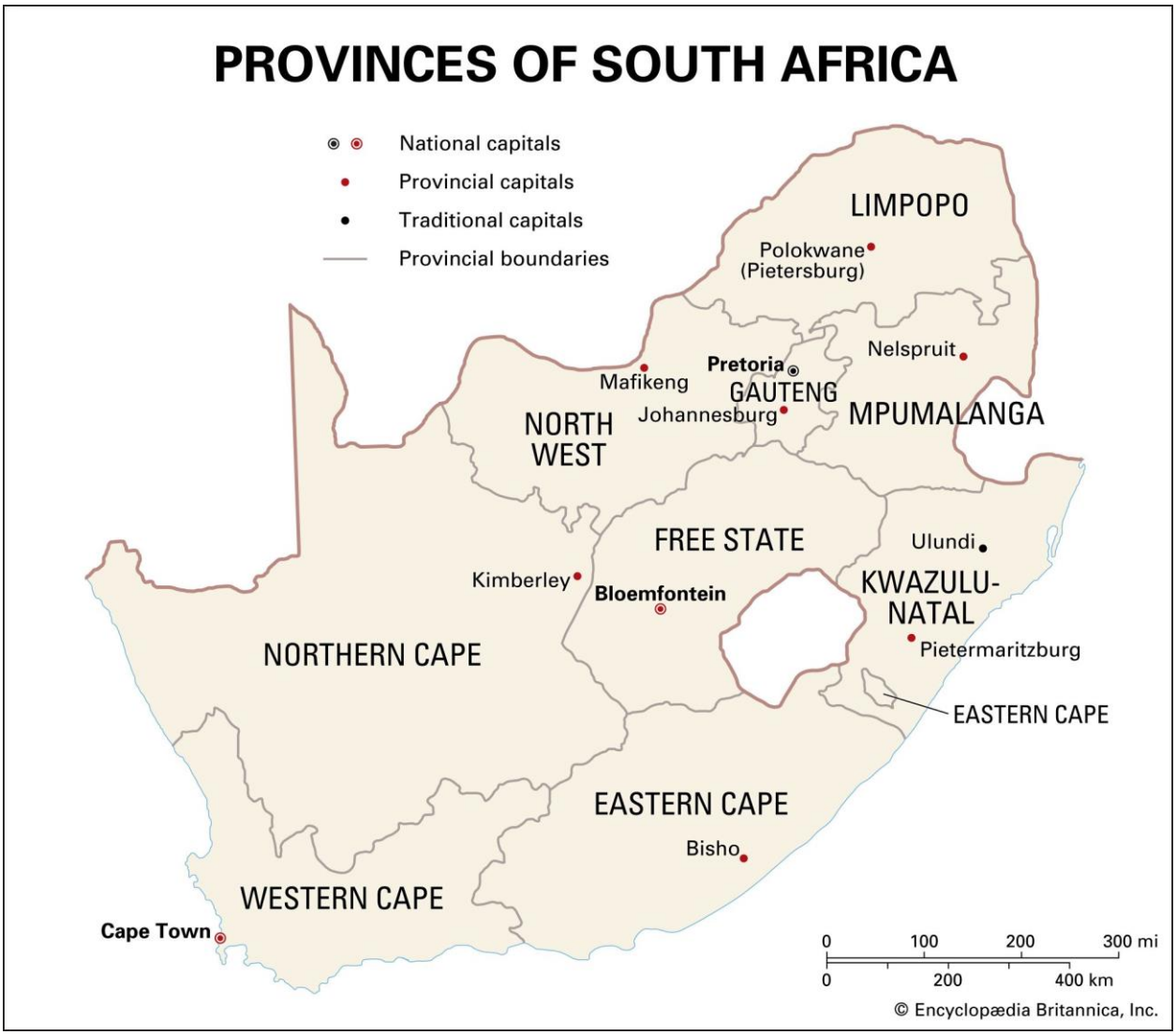

Fig 1: Provinces in South Africa (source: https://www.britannica.com/place/South-Africa/Local-government).

Under the new medical specialist certification framework, trainee specialists must (1) complete four to five years of clinical training at an HPCSA-accredited public academic/teaching hospital affiliated to one of the country's 10 medical schools, (2) complete a prescribed logbook and national curriculum/syllabus, (3) pass the written and oral national specialist exit examination administered by the CMSA and be admitted as Fellow in one of the 35 constituent colleges of the CMSA, (4) complete a research dissertation leading to the award of an Mmed degree in the relevant speciality by the host

University and thereafter, (5) register as a medical specialist with the HPCSA (Van der Bijl, 2022).

3.4. Research paradigm.

This is a qualitative study based on an interpretive/constructivist research paradigm and constructivist grounded theory methodology. The choice of research methodology is influenced by various factors, amongst them, the research question, research paradigm, and the desired knowledge to be generated (Creswell & Creswell, 2018; Creswell & Poth, 2018; Crotty, 2021; Denzin & Lincoln, 2005, 2013). A research paradigm refers to the beliefs that researchers have about the nature of reality (ontology) and how knowledge is acquired (epistemology) (Creswell & Creswell, 2018; Creswell & Poth, 2018; Crotty, 2021; Guba, 1990; Guba & Lincoln, 1994).

Three main research paradigms; positivism, constructivism/interpretivism, and pragmatism, are commonly utilised in research (Creswell and Creswell, 2018; Creswell & Poth, 2018; Crotty, 2021). These paradigms differ in their ontological and epistemological perspectives. The positivist paradigm holds the belief that reality is objective and exists independently of the observer (Creswell & Creswell, 2018; Guba, 1990; Lincoln and Guba, 1985). Consequently, reality can only be uncovered through objective scientific methods aimed at establishing generalizable laws (Creswell and Creswell, 2018; Creswell & Poth, 2018).

However, constructivism/interpretivism is premised on the belief that reality is multifaceted and shaped by individuals' experiences and interpretations thereof (Charmaz, 2014; Creswell & Creswell, 2018; Dagar & Yadav, 2016; Denzin & Lincoln, 2013). Interpretivism seeks to understand human experiences, the meanings attached to them, and the resulting human actions rather than an objective truth (Lincoln & Guba, 1985). Instead of engaging in philosophical debates concerning the existence of reality and the process of knowledge acquisition, s, pragmatism focuses on identifying the most effective method for solving real-life problems (Crotty, 2021; Creswell & Creswell, 2018; Creswell & Poth, 2018; Denzin & Lincoln,

2013). Pragmatism is often associated with mixed-method research (Creswell & Creswell, 2018; Creswell & Poth, 2018).

This study aimed to explore the lived experiences of trainee medical specialists within the South African specialist certification framework, which was first implemented in 2011. Specifically, the study aimed to examine the challenges faced by trainees, their navigational strategies, the factors influencing their choice of strategies, and use the information to construct a theoretical model that explains these experiences. Additionally, the study seeks to provide recommendations for improving specialist training at the study sites and to inform education policy direction.

The positivist research paradigm was deemed unsuitable for this study due to its objectivist philosophical stance which disregard the subjective nature of human experiences, and its failure to acknowledge that the researcher is an integral part of the research process in that he/she generates and interpret the research data (Charmaz, 2014). Furthermore, the positivist paradigm fails to recognize that the research output is the researcher's subjective interpretation of participants' subjective accounts rather than an objective portrayal of their reality (Charmaz, 2006, 2014).

Similarly, I also considered the pragmatic research paradigm to be inappropriate. This is because I was not looking for practical ways method to solve real-life problems. Instead, my aim was to investigate the subjective experiences of a select group of trainee medical specialists within a specific context.

Therefore, this study is informed by the constructivist/interpretivist research paradigm. Constructivism/interpretivism is aligned with my worldview. It posits that reality is subjective, socially constructed, and interpreted by individuals, rather than existing independently and waiting to be discovered (Creswell and Creswell, 2018; Creswell and Poth, 2018; Guba, 1990; Guba & Lincoln, 1994; Lincoln & Guba, 1985). The interpretivist research paradigm enables researchers to explore social phenomena from the perspectives of individuals who possess relevant experiences related to the phenomenon being investigated, instead of relying solely on

the researcher's interpretation of their experiences (Charmaz, 2006, 2014; Creswell and Creswell, 2018; Lincoln & Guba, 1985). Interpretive research aims to comprehend the human experience, the significance individuals attribute to it, as well as how these experiences are impacted and moulded by contextual factors and the complex social interactions ingrained in human existences (Charmaz, 2014, Creswell & Creswell, 2018; Crotty, 2021). The above provide depth, quality, and richness to the research findings.

3.5. Study design.

3.5.1. Types of study designs

A study design refers to a framework or procedures used to collect, analyse, and interpret data, including underlying assumptions (Ranganathan & Aggarwal, 2018). This study is based on a qualitative research study design. The aim of qualitative study is to collect qualitative data that is rooted in people 'subjective experiences, perceptions, and interpretations (Creswell & Creswell, 2018; Creswell & Poth, 2018, Crotty, 2021). The qualitative study design resonated well with my constructivist-interpretivist worldview that there is no objective external reality; instead, reality is subjective, multiple, and socially constructed by social players (Creswell & Creswell, 2018; Creswell & Poth, 2018; Guba & Lincoln, 1994; Lincoln & Guba, 1985). My interest is on the subjective experiences and perceptions of trainee medical specialists within the medical specialist certification framework that introduced in South Africa in 2011 (HPCSA, 2010).

There were five main options for qualitative study designs to choose from: case study, ethnography, narrative, phenomenology, and grounded theory (Creswell, 2013; Creswell and Creswell, 2018; Creswell and Poth, 2018) (Table 2). Case studies help researchers to delve deeper into a phenomenon of interest, enabling detailed description of the phenomenon along with contextual factors contributing to the phenomenon's development (Crowe et al., 2014; Hovlid & Bukve, 2014). However, case studies do not involve the construction of an explanatory model or theory to explain the observed phenomenon. Consequently, I considered case study inappropriate for the objectives of my thesis.

Ethnographic studies focus on the cultural and social practices of a specific group of people within a given context (Creswell & Poth, 2018). One of the key advantages of ethnography is its ability to compensate for the limitations of interview-generated data because of researchers' immersion in the study contexts (Reeves et al., 2013). However, this study design requires extended observation of the study group in their natural environment by the researcher (Creswell & Poth, 2018). The aim of this study was not to comprehend cultural practices, but rather to acquire a deeper understanding of the experiences of a specific group of trainee medical specialists in a particular context. Moreover, the notion of observing the study participants in their natural settings, in this instance by shadowing them in their training environments, was going to be impractical given the number of study participants and the number of training sites that were involved. I therefore did not consider this design suitable for my study.

Narrative research aims to provide a detailed description of the lived experiences of individuals and the meaning they attach to those experiences (Butina, 2015). Similarly, this research aimed to gain an in-depth understanding of the experiences of individual trainee medical specialists, as well as the shared experiences of this group and their specific contexts. The focus was on exploring the challenges they encountered and how they navigated those challenges. The objective was not simply to recount the stories, but to employ an analytical approach in order to comprehend and conceptualise the trainees' lived experiences. The narrative approach alone did not have adequate analytical power required to meet the study's objectives.

Phenomenography seeks to describe the different qualitative ways in which individuals experience or perceive a particular phenomenon, including the meanings attached to it (Creswell & Poth, 2018). While phenomenography also explores human experiences, it does not take into consideration the influence of the context within which these experiences occur. Moreover, this study design does not involve the development of a theoretical model to explain participants' experiences. Consequently, I did not find the study design appealing.

Grounded theory is both a study design and research methodology (Charmaz, 2014; Creswell & Creswell, 2018; Murtovski, 2016). (Birks & Mills, 2015; Bytheway,2018; Charmaz, 2014; Muratovski, 2016). The research design/methodology is highly suitable for research areas where there is limited understanding of the phenomenon of interest. It involves systematic and simultaneous collection and analysis of data, utilising the data to generate a theory or explanatory model to explain the phenomenon under investigation. Moreover, GTM facilitates the exploration of contextual factors and the interplay between them and other factors in generating the observed phenomenon (Corbin and Strauss,1990,2008, 2015). Consequently, GTM resonated well with the purpose of this research.

Table 2: Types of study designs

	Case study	**Narrative research**	**Ethnography**	**Phenomenology**	**Grounded theory**
Purpose	An in-depth description of the case(s).	In-depth exploration of an individual's life.	Describe and interpret the experiences of a cultural group.	In-depth understanding of an experience.	Explores social phenomena and develop a theory to describe them.
Unit of analysis	Events, programmes, activities, individuals.	One or more individuals.	Group of people sharing a culture.	Group of people sharing an experience.	Process, actions, experience and interactions.
Data collection strategies	Interviews, observations, documents, etc (multiple sources).	Interviews, documents analysis.	Observations and interviews.	Primarily interviews.	Primarily interviews.
Data analytical strategies	Case description and thematic analysis.	Thematic analysis and use of chronology to tell a story.	Thematic analysis.	Textural, meaning, and structural description.	Coding.

3.5.1.1. *Study design informing this research.*

This thesis is grounded in the constructivist/interpretivist research design and GTM. GTM is the most appropriate approach for incorporating agency and context into the conceptualisation of T&L in HE, as called for by several researchers (Ashwin, 2008, 2009; Case, 2013,2015; Ertl and Wright, 2008; Haggins, 2003; Hodkinson et al., 2007; Mandal, 2018; Stenalt and Lassesen, 2021; Varpio et al., 2017. The study design has been utilised to conceptualise general and medical education in different contexts (Du Plessis & Van Westhuizen, 2018; Tavakol et al., 2006; Watling et al., 2021; Watling & Lingard, 2012). After thorough evaluation and consideration of alternative study designs, I came to the conclusion that t GTM offered the best promise to meet my study's objectives.

GTM is well suited for research that focuses on work-based learning (WBL) where contextual factors are likely to interact with personal agency (Billet, 2001; Billet & Smith, 2007. Because PGME is embedded in a clinical working environment, it is affected by various factors present within these environments (Malling et al., 2010; Scheele et al., 2004). These factors (discussed previously), have the potential to influence student learning, educational experiences, and academic performance. Grounded Theory, as a research methodology, is a highly valuable approach in that it provides an opportunity to explore the subjective experiences of individuals, including opportunity to analyse the interaction between contextual factors (e.g. socio-political influences, personal factors, etc) and the agency of the human actors. It empowers researchers to thoroughly investigate and theorize intricate social phenomena in various contexts and settings (Charmaz, 2014; Chun Tie et al., 2019, Glaser, 198, 2005; Glaser and Strauss, 1967, 2017).

3.5.2. Versions

There are several versions of GTM; however, the Classical Glaserian (CGGTM), Straussian (SGTM), and Constructivist (CGTM) versions are the ones that commonly appear in the

literature (Chun Tie et al., 2019). These versions exhibit both similarities and differences. They all have their roots in symbolic interactionism and focus on developing theoretical frameworks that explains a psychosocial phenomenon of interest (Charmaz, 2014; Singh & Estefan, 2018). Data collection and analysis in all three, is cyclical (iterative), involves the use constant comparison method (CCM), memo writing and theoretical sampling (Charmaz, 2014; Corbin & Strauss, 2008; Glasser & Strauss, 1967; Singh & Estefan, 2018). Symbolic interactionism is a scientific approach that focuses on the study of human behaviour, specifically, the values and meanings that individuals assign to their experiences and how these impact on their behaviours (Rakhmawati, 2019).

The variations among the three versions arise from the differences in their underlying philosophical assumptions. While Glaser & Strauss (1967) did not explicitly state any philosophical assumptions in their original version, CGGTM has traditionally been regarded as being positivist and objectivist in its ontology and epistemology respectively (Bruscaglioni, 2015; Charmaz, 2006; dos Santos et al., 2018). This is possibly because Glaser and Strauss wanted to position CGGTM as a dependable and rigorous alternative to positivism in the 1960s (Charmaz, 2006). Furthermore, the positivist orientation of CGGTM is also implied by Glaser's advice to researchers to always maintain an objective stance towards the data. He argued, doing so, would minimize any potential bias and facilitate the emergence of theory from the data (Glaser & Strauss, 1967). This is highly suggestive of positivism.

According to this version, research data is separate from the researcher and the context in which it is generated (Howell, 2013). In other words, the data generated is free from being contaminated by the researchers' perceptions, biases, or experiences as well as the context in which it is generated. This further supports the view that CGGTM is objectivist in its research philosophy. Accordingly, Glaser, and Strauss (1967) employed researchers to refrain from consulting the literature until after completing the data analysis. Coding in CGGTM is carried out through substantive and theoretical coding (Glaser and Strauss, 1967). Substantive coding involves two steps: open and selective coding. Open coding sets the tone of the categories by identifying the key issues coming from the research. The coding process then proceed to

selective coding which leads to the development of categories, the definition and properties of each category, and the identification of central or core category (Glaser and Strauss, 1967).

The core category acts as a central theme, connecting all other categories together to construct a storyline or theory (Glaser and Strauss, 1967). The CGGTM version appeals to researchers who believe in the existence of an objective external reality (Singh and Estefan, 2018). The strength of this version lies in its inductive approach which allows theory to emerge from the data. However, CGGTM disregards the role of the researcher and the context within which the data is generated. It is impossible to generate context- and researcher-free data in real practice as these methods seems to imply. Furthermore, its positivist stance might limit the insights that researchers could gain from the data if they were to acknowledge their contributions and that of the context in the data generated (Charmaz, 2006, 2014). Because of these reasons, I did not consider CGGTM as a possible research methodology. Furthermore, the method does not align with my interpretivist/constructivist worldview.

Like Glaser (1992), Strauss & Corbin (1998) did not explicitly state any philosophical assumptions behind their SGTM. However, it is widely accepted that SGTM is grounded in a post-positivist philosophy (Singh & Estefan, 2018). This is because like Glaser and Strauss (1967), Strauss and Corbin (1998) believed in the existence of an objective external reality. However, they differ from Glaser by acknowledging that it is impossible in practice to fully comprehend reality because of the subjective and limited nature of human experience (Corbin & Strauss, 2015; Strauss & Corbin, 1998). From the above, a conclusion can be made that Strauss and Corbin recognized that reality is subject to interpretation rather than existing on its own waiting to be discovered. The above suggests that reality is multiple because everyone is likely to interpret reality based on their personal experiences. Similarity, the outcome of SGTM is a representation rather than a depiction of actual reality because of the subjectivity of human interpretation.

SGTM utilises coding matrix to ensure objectivity of the findings and theory and, to maintain closeness to reality (Corbin and Strauss, 2008, 2015; Strauss and Corbin, 1998). Apart from the above, the coding process in SGTM is similar to CGGTM, save for some minor differences. Data coding involves open, axial (grouping codes with similar properties), and selective coding. The use of analytical coding matrix adds complexity and rigidity to the process (Charmaz, 2014). Consequently, Charmaz (2006, 2014) and Mills & Bronner (2006a, b, c) caution researchers to remain cognizant of the risk of diminishing data sensitivity by strictly adhering to inflexible analytical tools and frameworks like a coding matrix.

The SGTM approach is likely to appeal to researchers who believe in the existence of an independent and objective external reality, while at the same time, recognizing that the reality needs to be experienced and interpreted by human beings for it to exist (Rieger, 2018). This version will also be attractive to researchers who recognize the inevitability of researcher bias in the research process but aim to maintain objectivity by using the systematic data analytical framework and coding matrix that is provided (Rieger, 2018; Singh and Estefan, 2018). While this version promised to bring rigor to the research process, I did not like the rigidity of the coding matrix. I also considered the cautionary remarks made by Charmaz (2014) and Mills & Bronner (2006a, b, c) and decided to abstain from using the version.

The constructivist version is based on interpretivist/constructivist ontology and subjectivist epistemology (Birks & Mills, 2015; Charmaz, 2006, 2014; Mills et al., 2006a, b, c). According to CGTM, reality is multiple and subjective due to the diverse and subjective nature of human experiences (Charmaz, 2014). This is because individuals have different experiences of same phenomenon and as a result, construct different meanings from their experiences. Furthermore, it is the meaning they attached to their experiences that shape their actions (Charmaz, 2014). The meaning people derive from their experiences is context-dependent, dynamic, and not fixed, but subject to change over time (Birks & Mills, 2015; Charmaz, 2014; Mills et al., 2006a, b). In similar vein, the experiences of trainee medical specialists who participated in this study were subjective and not uniform. What is presented here, is a

synthesis of these varied experiences. Furthermore, the trainees' experiences are product of contextual influences.

Unlike the other two versions, CTGM version acknowledges that researchers are not neutral observers. They bring into the study their preexisting experiences, knowledge and personal biases. These factors influence how researchers generate and interpret research data (Charmaz, 2014; Mills et al., 2006a, b; Singh & Estefon, 2018). The researcher's personal experiences and professional background knowledge also play an important role in identifying potential study participants and interpreting their primary concerns (Charmaz, 2014; Mills et al., 2006a, b). This thesis is therefore not value free. The CTGM version aligned perfectly with my interpretivist worldview. It met all the criteria for how I perceive the world and how I believe a study should be carried out. Additionally, I did not undertake this study without prior knowledge. I approached it with disciplinary expertise gained from my roles as an educator, educational manager, clinician, and my extensive reading of the literature on the subject.

Instead of focusing only on cause and effect, CGTM places greater emphasis on providing an in-depth description and theoretical understanding of a phenomenon of interest (Charmaz, 2014). The findings of CGTM should be viewed as the researcher's interpretations of the study's participants' accounts of their experiences rather a presentation of an objective reality (Charmaz, 2006, 2014). Data analysis involves both open/initial and focused coding (Charmaz, 2006, 2014). The CGTM version is particularly suitable for researchers who acknowledge that reality is subjective and multiple and who are aware that their personal and professional knowledge have an influence on the way they conduct research and interpret the research findings (Singh & Estefon, 2018).

3.5.3. Justification of the constructivist grounded theory version

After carefully examining the three versions, CGTM appealed to me. The CGTM version is based on an interpretivist/constructivist research paradigm. Consequently, the outcome of the research is viewed as dynamic, context-bound and the researcher's interpretation of the

participants' experiences rather than a true representation of their reality (Charmaz, 2014; Mills et al., 2006a, 2006b). This is in alignment with my worldview.

CGTM seeks to describe a phenomenon that affects a specific group of people in a particular context (Charmaz, 2014). This makes it an appropriate methodology for research on teaching and learning in higher education that includes agency, context, and various research methodologies (Ashwin, 2008; Case, 2015; Ertl and Wright, 2008; Haggins, 2003; Hodkinson et al., 2007; Khan et al., 2012; Varpio et al., 2017). I also find this method appealing because it offers more flexibility compared to CGGTM and SGTM. According to Charmaz (2014), CTGM should be viewed as a guide rather than a prescriptive codebook. The methodology is flexible enough to allow for innovation during data analysis. Its flexibility also enhances the conceptualisation of data by improving the researchers' sensitivity to the phenomenon being studied, as researchers do not have to adhere to rigid coding schemes and frameworks (Charmaz, 2014).

Similarly, I sought a method that was adaptable and allowed for innovation, ensuring that I did not overlook any valuable insights from the study participants due to the limitations imposed by rigid coding frameworks. CTGM also acknowledges that researchers cannot undertake a study without prior knowledge of the research area (Charmaz, 2014). This knowledge is acquired through field experience or professional practice (Charmaz, 2014; Urquhart, 2013). As the Head of a Clinical Department, a clinical trainer, a member of the senior management team in the School of Clinical Medicine (SOCM) at my institution, a former council member of the College of Obstetricians and Gynaecologists of South Africa (COGSA), and the South African Medical Association (SAMA), an examiner for COGSA and higher degrees in my field, and someone who has participated in the HPCSA's training evaluation panels and stakeholder engagements, I cannot claim to have initiated this study without any prior knowledge. I embarked on this endeavour equipped with professional and subject knowledge derived from my professional practice and engagement with academic literature. These roles played a crucial part in my interactions with the study participants, as well as in the generation and interpretation of data.

The above roles positioned me as an insider researcher. Being an insider researcher provided me with a distinct perspective on the study participants' accounts of their lived experiences. Having an intimate familiarity with participants' educational environments and my speciality training in a similar setting fostered an authentic connection with them and their experiences. Furthermore, my familiarity with the research environment and professional expertise helped me distinguish between my personal encounters and those of the study participants. Additionally, I utilised my professional connections and relationships to gain access to the institutions where the study was conducted, granting me access to the study participants.

3.6. Study participants, sampling procedures and sample size.

3.6.1. Study participants.

The research participants were trainee medical and newly qualified medical specialists (first year of practice) from four disciplines (Medicine, Obstetrics and Gynaecology, Paediatrics, and Surgery) who were studying or had studied in one of the medical schools located in Gauteng province. The four specialities were chosen because they are among the first medical specialist training programs to be established in South Africa (Huskisson, 2005). The Gauteng province was chosen due to its extensive number of medical schools and diverse range of trainee medical specialists in comparison to other provinces. These trainees comprise individuals from Gauteng, other provinces, and international students.

3.6.2 Sampling procedures

Research participants in GTM are chosen either because of their knowledge about the phenomenon or because they have experienced the phenomenon under investigation (Razavi and Iverson, 2006). As trainee and former trainee medical specialists, participants in this study, had personal knowledge and experience about the phenomenon of interest.

Recruitment of the study participants commenced with purposive sampling and proceeded to theoretical sampling after analysis of the initial set of interview transcripts as recommended by Charmaz (2006, 2014). The aim of sampling in GTM is not to achieve a representative sample

but to select key informants who have knowledge or experience about the phenomenon under investigation (Charmaz, 20014; Sbarini et al., 2011).

Charmaz (2006, 2014) recommends commencing the sampling procedure with inclusion criteria to select the first group of participants. In deciding on the inclusion criteria, she advises researchers to consider the research question, study context and other factors that might affect the research outcomes (Charmaz, 2006, 2014). In line with the above, the following inclusion criteria was used to select the first group of study participants: (1) trainee or medical specialist in their first year of practice in one of the four specialities under investigation(Medicine, Obstetrics and Gynaecology, Paediatrics and Surgery) , (2)studying or have studied in one of the three medical schools located in Gauteng Province and (3) willing to participate by way of signing an informed written consent. The above inclusion criteria were chosen because they spoke directly to the research questions and purpose of the study. To avoid bias and power dynamics, all trainee medical specialists who were under my direct supervision were excluded.

After analysing the first set of five transcripts, I used theoretical sampling to recruit the rest of the study participants. The aim of theoretical sampling is not to achieve a representative sample but to refine emerging categories and concepts through the recruitment of key informants (Charmaz, 2014; Glaser and Strauss, 1967). Theoretical sampling does not require an inclusion criterion. The decision as to who and where to sample next, including which questions to ask, is informed by emerging concepts, categories, and themes from the preceding interviews (Charmaz, 2014). Similar approach was followed to recruit the rest of the study participants and to design the next sets of questions after analysing the initial five set of interviews transcripts.

3.6.3. Sample size.

Sample size in GTM is determined by either data saturation instead of statistical or arbitrary means (Charmaz, 2014). Saturation is achieved when additional data does not add any additional information to what has already been gathered and does not further the development of the categories or explanatory power to the explanatory model (Glaser and

Strauss, 1967; Strauss & Corbin, 1998). Watling et al. (2020) use data adequacy instead of saturation to mean that the researcher has generated enough data to answer the research questions or to construct an explanatory model of the phenomenon under study.

From the above, the choice of data and conceptual saturation are pragmatic decisions that the researcher makes depending on his/her assessment of the adequacy of the data collected, categories generated and their adequacy in answering the research questions (Alemu et al., 2015). Similarly, data adequacy was used to determine when to stop conducting further interviews. I believe that the study had achieved adequacy in terms of data and conceptualization after conducting interviews with 25 participants. However, in order to account for any recording errors, I decided to recruit an additional five participants. These participants were also used to verify whether the theoretical model made sense to individuals who were impacted by the phenomenon (Charmaz, 2006; Charmaz and Thornberg, 2020).

3.7. Data generation

Data is generated instead of collected in qualitative research. This is because the researcher and the study participants co-construct the research data which speaks to the interpretivist and subjective nature of the research process.

3.7.1. Data generation tool

Data was generated using semi-structured interviews. Semi-structured interviewing is a well-established method of data collection in qualitative research. This method has been used to study social phenomena in different disciplines and settings (Charmaz, 2014; Denzin and Lincoln, 2005, 2013). Interviewing is well aligned with the interpretivist/constructivist research paradigm and provides opportunities for researchers and study participants to engage in mutual conversation and co-construction of data (Mills et al., 2006a, b, c).

The data generated through this method reflects the study participants' interpretation and accounts of their experiences which is then interpreted by the researcher (myself in this case) during data analysis (Bryant and Charmaz, 2010; Charmaz, 2014; Mills et al., 2006a, b, c). In

addition, the one-to-one interviews allow the researcher to observe both verbal and non-verbal communication which include, research participant's emotional responses (tone of their voices and emotions) as they relate their stories (Creswell and Creswell, 2018; Creswell and Poth, 2018).

Furthermore, interviews create opportunities for the study participants and researchers to reflect on their own experiences (Charmaz, 2006, 2014). Similarly, the interviews provided me with ample opportunities to explore the research participants' subjective accounts of their experiences while at the same time allowing me to observe their verbal and non-verbal cues as they related their stories. This helped uncover hidden meanings and the emotional impact of these experiences on them. This process also helped me to evaluate my own experiences against those of the study participants and, assisted in separating my own experiences from those of the study participants (Charmaz,2014; Finlay,2002).

3.7.2. Data generation procedures

All interviews took place between 1 September 2017 and 30 December 2018. The initial interviews took six months to complete; however, I went back and forth between participants requesting additional meetings (in person or by telephone) with some of the study participants to seek clarity on some of the issues that emerged during the analysis of the transcripts. This process continued until I was satisfied that the data had reached adequacy and that I had cleared any questions I had with the study participants.

After obtaining ethics approval from Lancaster, and institutional ethics clearance from the key institutions and relevant permissions, I contacted heads of departments (HODs) of participating disciplines and institutions to seek permission and contact details of trainee medical specialists (registrars or residents) and/or representatives/coordinators. I discussed the study with the coordinators and requested names, contact numbers and emails of registrars/trainee medical specialists in their departments. Other registrars/ residents were recruited through my professional networks and following recommendations by study participants after discussing

with them the specific profiles of participants I wanted to interview next as informed by the emerging concepts, themes, and categories (theoretical sampling).

An email was sent to each potential research participant wherein I introduced myself and the study and invited them to participate. I attached the participant information sheet and consent form on each email I sent to potential participant (Appendices L and M). After two weeks, I called those who did not respond to check if they had received the email and were willing to participate. Individual appointments for face-to-face interviews were arranged with those who agreed to participate. There was an overwhelming willingness to participate, and none of those approached declined; however, two could not be interviewed because of clinical commitment on the day of the interviews. I was not able to go back to them because of time constraints.

Each interview took place at a site and time decided upon by each study participant. All participants chose to be interviewed at their place of work. I called each participant a day before the interview to confirm the appointment. I arrived 10 to 20 minutes before the scheduled interview time and informed them of my arrival. I started the interview by introducing myself once again, explaining the purpose of the research, the reason they were selected, the anticipated length of the interview and obtaining informed written consent for the interview and digital recording (Appendix L). All the study participants were given opportunities to ask questions or to seek clarity. The interview was conducted using an interview schedule/protocol (Appendix O); however, the questions changed as the study progressed. Participants were assured of confidentiality throughout the process, and each study participant was assigned a study number to protect their identity. They were also informed that they were free to withdraw at any time without a need for explanation and that their transcripts would be excluded from the analysis if they withdrew. None of the study participants withdrew.

After the introduction and consent process, I posed the following question to each participant: Briefly *tell me about yourself and why you chose to specialise in ____ (name of the speciality*)? This question served as an icebreaker; however, in the end, it provided valuable information for

the study by revealing the reasons behind their decision to specialize. I then invited them to share their experiences by asking the following questions:

Please *tell me about your experience during your specialist training*.

Participants were asked to give specific examples of some of the experiences they described. Other questions included asking the participants what was going on in their minds during the process, what the experiences meant to them, how they responded and why they responded that way. This was done to elicit meanings they attached to the experiences, the impact of the experiences to them, gather information on their actions and responses as well as factors that informed their choice of actions. This way, I could capture the phenomenon, the research participants' subjective experiences, personal interpretation, responses, and factors influencing their responses. Questions like:

- What do you mean by that?
- Do you mind explaining what you mean by …?
- I am not completely certain that I understand what you are saying, do you mind clarifying what you mean by that statement?
- Why do you think you felt that way? And
- What do you think made you react or respond in that way?

were used to gain better insight into the participants' subjective experiences, explore their emotions and deep-seated meanings, their responses and factors that informed those responses. The emerging categories, concepts, and storyline guided further questions. I assured each participant that the interview was a conversation instead of a question-and-answer session.

Each interview lasted between 30 to 90 minutes and were digitally recorded using Phillips DVT4020 Digital Voice Recorder^{R}. At the end of each interview, I thanked the participants for their time and gave them another opportunity to ask questions or to make final comments. I further asked for permission to contact them to set up additional face-to-face or telephonic

interviews or clarify questions through an email should there be a need for clarity or follow-up on some of the issues they raised. In addition to the above, each research participant was also asked if they would be willing to review the transcript and, if not, allow a telephonic discussion with the researcher to verify the key issues from their specific interview. This process is called member-checking (Charmaz, 2014).

3.8. Data storage and processing

After each interview, the digital recording was downloaded and stored in a specially designated password protected file in a password-protected personal computer. I then listened to each interview on the same day and made initial notes regarding what I thought was going on in the interviews using Charmaz's (2006:52) questions to get a broad overview of the emerging issues and topics. After that, the digital recordings were sent to a professional transcriber who had signed a confidentiality clause (Appendix N).

Upon receiving the transcripts, I read through each transcript, listened to the digital recording, and made corrections where necessary. The research participants were then contacted and, depending on their choice, were either sent the entire transcript or a summary of key messages to review. Some of the research participants chose to have a telephonic discussion instead (this gave me another opportunity to explore or clarify some of the issues from the initial interviews). I made additional notes during the telephone conversations. These notes formed part of my memo writing and analysis. All the transcripts were also stored in a password-protected folder on a password protected personal computer for safekeeping. I deleted each digital voice recording after confirming that the transcript was a true reflection of the digital recording to protect the identity and confidentiality of the research participants.

3.9. Data analysis

Unlike other forms of qualitative and quantitative research, data collection and analysis in GTM is not linear but occurs concurrently and moves backwards and forward. This process is guided by emerging concepts and categories (Charmaz, 2014). Similarly, data generation in this study

occurred in repetitive backwards and forward motions. This process is summarised in Figure 2 below.

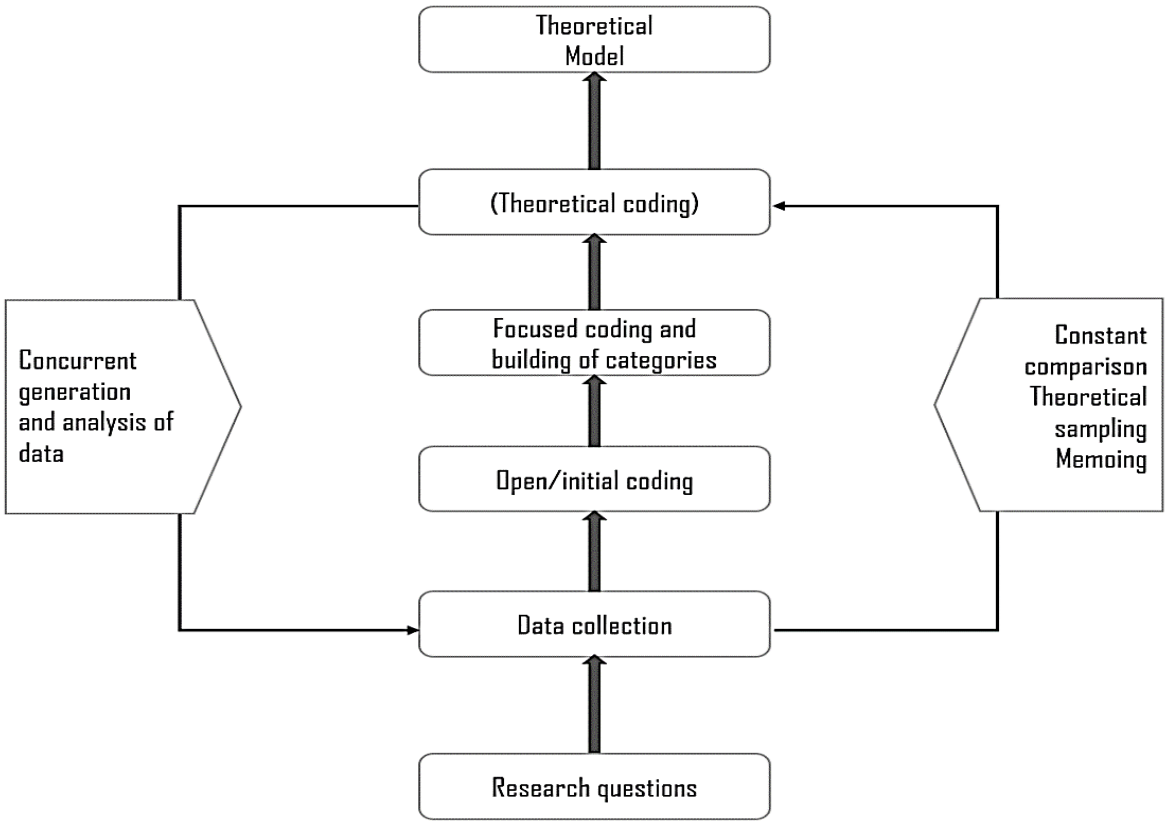

Figure 2. Data generation and analysis

Data analysis in GTM is called coding. Coding involves breaking down data into smaller segments and labelling the segments with a short descriptive name to capture what the segment is all about (Charmaz, 2006, 2014). Coding is a deliberate process whereby a researcher chooses only the data that is relevant to the research question(s) and uses the information to construct conceptual categories (Charmaz, 2014; Miles and Huberman, 1994). All other data that does not speak directly to the research question is ignored. The purpose of coding is to identify the psychosocial phenomenon under investigation, develop conceptual categories, and connect the different pieces of data and categories together

construct an explanatory theoretical model that describes the phenomenon under investigation (Charmaz, 2014; Miles and Huberman, 1994; Mills et al., 2006a, b, c).

Coding was performed with a combination of manual coding and with the assistance of Delve software®, a cloud-based qualitative data analytical tool (https://delvetool.com/). I initially started with manual coding but found the process to be laborious and time consuming due to the large amount of data that was generated during the interviews. I decided to try the NVIVO^{R} (https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home) but found myself struggling as I did not have adequate experience using this software. I couldn't find anyone who could teach me how to use the software, so I abandoned it.

I then came across the Delve Software by chance. Compared with NVivo, I found the Delve software to be much easier to use. I relied on the tutorials and examples included in the software. I soon realised that I had misconceptions regarding the role of software in data analysis. A coding software is a data management tool instead of an analytical tool. The researcher is responsible for creating the codes and conceptual categories and establishing the linkages between them to create a storyline (Basit, 2003; Pope et al., 2000). A software does not analyse data on its own. Coding using the software was restricted to open and focused coding. The rest of the process was done manually using an A3 paper, pen highlighters and coloured pens. The manual coding process was labour intensive; however, like Basit (2003), I felt much more at ease and in control of the process with manual coding compared to using software.

Coding was done in batches of four to five transcripts. This gave me time and an opportunity to reflect on the data and the emerging themes. As a novice GTM researcher, I immersed myself in GTM articles and books, searching for the best approach to code the data. I also listened to YouTube® to gain more understanding of the coding process. I soon discovered that there were many ways of coding (word by word, line-by-line, paragraph by paragraph,

and incident by incident) (Charmaz, (2014). After considering the different coding approaches, I resorted to using a combination of line-by-line as well as coding segments of data. Coding was done using initial/open, focused/selective, and theoretical coding in line with CTGM (Charmaz, 2006,2014).

This process was iterative (moved backwards and forward between data collection and analysis) and involved constant comparison analysis and theoretical sampling (Charmaz, 2014; Glaser and Strauss, 1967; Corbin and Strauss, 2008). Constant comparison analysis was used to compare data (action with action, category with category, code with code, concept with concept, experience with experience and idea with idea) (Charmaz, 2014; Glaser and Strauss, 1967; Strauss and Corbin, 1998; Watling et al., 2020).

During the process of open coding, data was broken down into pieces of segments and a descriptive label or short statement was attached to describe what the data was all about (Charmaz, 2014). The labels were compared with each other and the rest of the data using constant comparison analysis, looking for similarities and differences (Charmaz, 2014; Glaser and Strauss, 1967; Strauss and Corbin, 1998). During the entire coding phase, I followed the suggestions by Charmaz's (2006:29-50) on how to approach coding:

- I approached coding with an open mind, was receptive to any possibilities emerging from the data, stayed close to data, used action verbs or gerunds to preserve actions and processes, analysed actions and processes to understand their meanings and to uncover implicit assumption.
- I used short codes to describe the data and compared the codes/concepts/categories generated with each other and with the rest of the data.
- I then used the analysis and emerging codes to identify gaps in my data, which informed who to recruit next and the line of questioning I should follow. This process is called theoretical sampling (Charmaz, 2014).

I found the suggestions by Charmaz (2006:52) to use questions to uncover the social phenomenon very helpful. Borrowing from Charmaz (2006:52), I asked the following questions:

- What issues and processes are going on in the data?
- How/why do these issues and processes develop?
- What are the responses of those affected by the phenomenon, and why?
- What are the results of the actors' responses/actions and/ or the process itself?

During open coding, I generated a total of 117 open codes. The next level of coding (focused) focused on the most recurring codes from the open codes. The open codes were sorted and consolidated to form focused codes (Charmaz,2006, 2014). I wrote field notes and interpretive memos during the coding process (Box 2 and 3). Theoretical and interpretive memos (Box 3) helped establish connections between different codes, codes and categories, and categories. I then applied the focus codes to the rest of the data to assess their adequacy and used theoretical sampling to address any gap that was identified (Charmaz, 2006, 2014).

BOX 1: EXAMPLE OF FIELD NOTES

Date: 01 September 2017

Venue: XX Hospital

Today, I interviewed the first study participant at xx hospital, where he works. The interview took place in the doctors' rooms, which he booked for the purpose. It looks like a very busy department. I asked to be taken around to see the place before the interviews. The labour and admission wards were overcrowded. I was also informed that they have 30 women waiting for caesarean sections, some of which were emergencies. They only had two theatres for both elective and emergency caesarean sections.

I interacted with the doctors and nurses, who greeted me with a smile. Their attitude touched me deeply. To me, putting a smile in such a crowded labour and admission wards (some

patients were sitting on the floor) shows their commitment to helping needy women and their children. Both doctors and nurses indicated that overcrowding was the norm. Patients sometimes waited for a whole week for caesarean sections. They tried to get help from other hospitals; only one could assist by taking two women. The post-call team appeared extremely physically exhausted but still managed to smile.

We then went back to the office for the interview. The study participant described and reflected on his journey after his undergraduate training and how he ended up being a trainee medical specialist, the challenges of specialist training and the impact of these challenges on his personal dream. I could sense that the experience affected him. He would pause and sigh, then continue to relate his story. He indicated that the training program was not well structured, and learning was opportunistic because of the over-emphasis on services over education.

The department was understaffed in addition to overcrowding. This meant working long hours. Supervision was a serious problem. This is because consultants (clinical trainers) often left them alone to run their private practices (RWOPS). They depended on each other, with more senior registrars supporting juniors. He indicated that he initially felt lost and frustrated by the situation to the extent of considering quitting. However, after deep reflection, he decided he would not give up on his dream and decided to find ways to overcome the obstacles he was facing. He drew strength from the support he received from peers and family members but also took comfort from the fact that he managed to overcome many challenges during his undergraduate training. This interview reminded me of our discussion on structure and agency during one of my residential visits at the University of Lancaster. We discussed the papers on structure and agency by Archer (2003) and Giddens (1984). I found the concepts difficult to understand. I then decided to go back and read the two papers as it was clear that these were the issues that were at play in my study.

BOX 2: EXAMPLE OF ANALYTICAL MEMO

Date: 24 February 2019

I applied Chamarz's (2014) approach to data analysis and the questions she recommended (Charmaz 2006: 52):

- What issues and processes are going on in the data?
- How/why do these issues and processes develop?
- What are the responses of those affected by the phenomenon, and why?
- "What are the results of the actors' responses/actions and/ or the process itself?

Initially, the analysis generated 117 open codes; however, on a closer look at the codes (looking for similarities and differences), I was able to combine most of the codes and ended up with 33 open codes. Focused coding resulted in 11 codes:

I*ssues*: Trainees facing challenges in the learning environment

Why/how these issues develop: Organisation of educational programs and institutional practices/culture.

Responses and reasons: They devised strategies to overcome the challenges in pursuing personal dreams/goals.

Factors influencing their decisions: self-talk, taking with other people, previous experiences, and social support.

Outcomes: realisation of personal dreams, growth (maturity), resilience, determination to assist other trainees in similar situations.

Theoretical coding is the last and final stage of the grounded theory coding process. The purpose of theoretical coding is to establish connections between focus codes and, by so doing, begin to develop a storyline and build an explanatory model (Charmaz, 2014). Various strategies have been suggested. These include using analytical schemes or coding families (Glaser, 1978, 2005; Corbin and Strauss, 2008) or establishing relationships between focused codes using the researcher's theoretical sensitivity, in vivo codes (codes derived directly from

participants' own words), sensitizing concepts, theoretical sampling as well as interpretive memos (Charmaz, 2006; Glaser, 1978, 1998, 2005).

The importance of interpretive memos in weaving the storyline was highlighted by Glaser (2005), who believes that 90% of theoretical coding can be achieved through writing and sorting out memos. Therefore, I opted against using pre-existing theoretical codes to avoid forcing labels on the data, a view also shared by Charmaz (2014). Instead, the connections and relations between the different categories, focus codes and construction of the explanatory model were achieved using theoretical sampling, sorting out memos, using interpretive memos, and sensitizing concepts (Charmaz, 2006, 2014; Watling et al., 2020).

I used the concepts of action, identity, process, self, and situation from symbolic interactionism (Aldiabat and Le Navenec, 2014; Charmaz, 2006, 2014; Glaser and Strauss, 1997; Salvini, 2019; Corbin and Strauss, 2008) as well as literature on structure and agency (Archer, 2003; Giddens, 1984) as sensitizing concepts. I reviewed the relevant literature at different stages of the research process. The literature assisted with the construction of the theoretical model by sensitizing me to the topic but also helping me to reflect on my personal views and avoiding forcing those views on the data (Charmaz, 2014; Thornberg, 2012). I reflected on the data and wrote memos to establish a connection between the codes and categories (See Box 3 below).

BOX 3: EXAMPLE OF THEORETICAL AND INTERPRETIVE MEMO

Date: 10 August 2019

I searched the literature on how to connect the categories and to construct the theoretical model. I came across several strategies. This can be achieved using theoretical sampling, sorting out memos, use of interpretive memos, and sensitizing concepts (Charmaz, 2006, 2014; Watling et al., 2020). I used the concepts of action, identity, process, self, and situation from symbolic interactionism (Aldiabat and Le Navenec, 2014; Charmaz, 2006, 2014; Glaser and Strauss, 1997; Salvini, 2019; Corbin and Strauss, 2008). I also consulted the literature on structure and agency (Archer, 2003; Giddens, 1984) and used the concepts as sensitizing concepts. Finally, I used my own theoretical sensitivity as a researcher who is familiar with the subject as suggested by Charmaz (2006; 2014).

The central theme emerging from the research is that of trainee specialists navigating constraints in their learning environments to pursue personal dreams using personal agency. This agency is enhanced through conversation with self and others (Archer, 2003), drawing from previous experience as well as social support. The outcomes of the trainees' agency (individual and collective) include achieving one's dream, development of resilience and commitment to assist other trainees to overcome similar challenges.

3.10. Confidentiality and ethical considerations

The significance of ethics in research cannot be overstated. It is the duty of the researcher to ensure that the research is conducted in an ethical and transparent manner, without causing harm or distress to the participants, and in accordance with ethical standards and scientific practices. I employed the ethics framework developed by Emanuel et al (Tsoka-Gwegweni et al., 2014) to guarantee that the thesis adhered to rigorous ethical standards and practices. Before commencing with the study, the protocol was submitted to the Department of Educational Research and after scientific assessment and approval, to the Faculty of Arts and

Social Sciences and Lancaster Management School Research Ethics Committee (FASS-LUMS REC) for ethical approval (Appendix A).

Locally (South Africa), the study received ethical approval from the Human Research Ethics Committee (HREC) of the University of the Witwatersrand (Appendices B and C). Furthermore, permission to conduct the study was granted by the HPCSA, a statutory body tasked with regulating health professions education and clinical practice in South Africa (Appendix D), the CMSA, a non-profit professional body responsible for the national syllabus/ curriculum and conducting national specialist exist examinations (Appendix E), and where relevant, heads of participating academic departments (Appendices F to K).

Grounded theory differs from other research methodologies in that data collection commences with purposive sampling later, changing to theoretical sampling based on emerging themes, categories, and concepts (Charmaz, 2006, 2014). I therefore informed the Faculty of Arts and Social Sciences and Lancaster Management School Research Ethics Committee (FASS-LUMS REC) and the HREC (WITS) of the changes as the study proceeded. I was permitted to proceed. Henceforth, I started the research with a broad idea based on the research question and aim of the study; however, the interviews with study participants determined the final product.

During the recruitment process, I explained to every participant the objective of the study, reasons why they were selected, the voluntary nature of participation, and their prerogative to withdraw without justification. Moreover, I reassured each participant of my unwavering commitment to maintaining confidentiality throughout the research process and pledged to refrain from using any personal identifiers in the documentation or scientific presentations. Following the above explanation, each participant was afforded the opportunity to seek clarification or pose questions concerning the research, including the processes involved. Subsequently, participants indicated their willingness to participate in the research by providing informed written consent.

To ensure confidentiality and protect the research participants, I allocated study numbers and used those during the digital recordings. The digital recordings were always stored in a password-protected folder in a password protected personal computer and thereafter sent to a professional transcriber who signed a confidentiality agreement (Appendix N). I checked each transcript against the corresponding digital recording and deleted the recording after making the necessary corrections where indicated. The de-identified transcripts were stored in a password-protected personal computer in a separate file before being loaded into the Delve software® (https://delvetool.com/home), which was also password-protected.

3.11. Quality considerations

Both general and method-specific quality criteria can be used to assess the quality of qualitative studies. Guba and Lincoln (1994) proposed five quality criteria (credibility, dependability, conformability, transferability, and reflexivity). Credibility refers to the plausibility or truthfulness of the findings and whether the research findings can be confirmed by the data (Korstjens and Moser, 2018; Stenfors et al., 2020). Dependability is concerned with the stability of the findings over time and conformability, whether the findings are backed by the data (Guba and Lincoln, 1994; Korstjens and Moser, 2018). The fourth and fifth criteria, transferability, and reflexivity, refer to the extent to which the research findings can be applied to a different group and context. Transferability and reflexivity are key considerations in assessing the quality of a study. Transferability refers to the extent to which the findings can be applied to other contexts, while reflexivity pertains to the researcher's critical reflection and clear description of their role in the research process. Both aspects are essential for ensuring the integrity and validity of the study (Guba and Lincoln, 1994; Korstjens and Moser, 2018; Stenfors et al., 2020). Not all the five general criteria can be used to assess the quality of a grounded theory study.

This thesis is based on CGTM (Charmaz, 2006, 2014). Charmaz and Thornberg (2020) proposed four quality criteria: credibility, originality, resonance, and usefulness. Similar to the general quality criteria (Guba and Lincoln, 1994; Korstjens and Moser, 2018), credibility

in CGM is concerned with whether the data supports the study's findings (Charmaz and Thornberg, 2020). The originality criterion is met if the study provides new insight or conceptualisation of the phenomenon of interest (Charmaz, 2006; Charmaz and Thornberg, 2020). The study is deemed to have achieved resonance if it reflects participants' experiences and offers insight into their experiences (Charmaz, 2006, 2014; Charmaz and Thornberg, 2020). Usefulness refers to whether the study's findings contribute to existing knowledge on the subject, can assist actors in making sense of their everyday experiences, have the potential to inform policy and practices, and provide opportunities for new research (Charmaz and Thornberg, 2020). Reflexivity, akin to the general quality criteria, relates to whether the researcher has been transparent about their role in generating data, including the description of the study context (Charmaz, 2006; Charmaz and Thornberg, 2020; Korstjens and Moser, 2018). I utilized the four quality criteria for CGTM proposed by Charmaz (2006, 2014) and Charmaz and Thornberg (2020) to evaluate the quality of this study.

The credibility of this study was established by adhering to the steps and procedures described for CGTM and using theoretical sampling to select study participants (Charmaz, 2014; Charmaz and Thornberg, 2020). Theoretical sampling helped ensure selection of key informants who had knowledge or experience regarding the phenomenon under investigation (Charmaz, 2006, 2014; Charmaz and Thornberg, 2020; Guba and Lincoln, 1994). The study involved trainee medical specialists who had knowledge and had experienced the phenomenon that the research sought to explore.

The use of constant comparison analysis assisted in ensuring that the codes, categories, and results were grounded in data (Charmaz, 2014). The result of the study reflects the study participants' accounts of their experiences. Furthermore, the participants checked the interview transcripts to confirm that what was in the transcripts were true reflections of the interviews I conduced with them (member checking). Similarly, the results were shared with some of them to check if my interpretation of their experiences was correct.

Most of the findings reported in this study have reported by other studies in other disciplines (Averbuch et al., 2021; Ayyala et al., 2019; Badsar et al., 2012; Baldo et al., 2020; Idowu, 2018; London et al., 2009; Menon, 2021; Mitchel et al., 2005;Mocumbi et al., 2014; Nwachuku, 2019; Ogboghodo and Edema, 2020; Ogundipe et al., 2014; Oleribe et al., 2019; Osseo-Asare, 2018; Patel et al., 2016, 2018;Peer & Fagan, 2012; Kruger & Veller, 2014;Talib et al., 2019; Thackwell et al., 2016; Thomas, 2004;Xulu & Hadebe, 2022;Zeijlemaker & Moosa, 2019). To ensure methodological credibility, I shared my initial findings with the late Professor Cathy Charmaz (May her soul continue to rest in peace!), who was so kind to review my codes and categories and provide further guidance on how to proceed. Unfortunately, she passed away before I completed the thesis. However, her guidance helped me successfully navigate the CGTM methodology. Furthermore, the study's findings are supported by quotations from participants in relevant sections of the thesis as suggested by Leedy & Ormrod (2019).

The study fulfils the originality criteria on two grounds: first, according to my knowledge, this is the first local study to attempt to use GTM to research and conceptualise the experiences of trainee medical specialists in South Africa, and secondly, it offers a more and nuanced understanding of the experiences of trainee medical specialists in South Africa when compared with previous research, most of which were based on trainee surveys (London et al., 2009; Peer and Fagan, 2012; Patel et al., 2018) and critical discourse analysis , focusing mainly on racism (Thackwell et al., 2016). The study also provides valuable insight into the possible factors that might have contributed to the high failure rate in some of the national specialist exit examinations that caught the attention of public media and the general public (Child, 2019) and general trainee performance in these examinations (Khan et al., 2019; Swanepoel et al., 2018).

To ensure that the study fulfilled the resonance criteria, the theoretical model was presented to five study participants and five others (two practising and three trainee specialists) who did not participate in the study to check if the results and the theoretical model made sense. There was overwhelming confirmation of the thesis's findings and model's portrayal of their experiences.

The study also fulfils the usefulness criteria in that it contributes to both local and global knowledge on postgraduate medical education. Moreover, the study offers valuable information that can be utilised to improve medical specialist training and to inform PGME policy decisions. The findings of this study are not exclusive to the Gauteng Province or South Africa, but rather have implications for PGME on a global scale given that other studies have reported on similar challenges (Kilty et al., 2017; Ludmerer and Johns, 2005; Menin, 2021; Sandhu, 2018; Talib et al., 2019; Ten Cate et al., 2017, Weise et al., 2018).

3.12. Reflexivity

Reflectivity is a powerful research tool that helps researchers to evaluate and express their hidden assumptions and subtle decisions they make during the generation, analysis of data and interpretation of the research findings (Finlay, 2002). It is accepted that the researcher's choice of research topic, research questions, data collection and analysis tools, including the interpretation of the research findings, are influenced by his/her worldview (Croty, 2021; Creswell and Creswell, 2018; Creswell and Poth, 2018). Therefore, the research process and outcome are not value-free (Charmaz, 2014). It is for this reason that researchers are urged to acknowledge the influence of their subjectivity on the research process by, among others, presenting a brief background about the context, themselves and how their background might have influenced the choices they made during the research process such as choice of sources of data, data collection tools and analysis (Charmaz, 2006, 2014). The study context, my worldview, and rationale for the choice of research questions and methodology have been discussed elsewhere in the thesis and will not be reiterated as a result. I however would

like to expand on my different roles and responsibilities that were alluded to in previous sections.

I am a board-certified specialist obstetrician and gynaecologist and a Maternal and Foetal Medicine sub-specialist. I am also the clinical head of the Department of Obstetrics and Gynaecology at Charlotte Maxeke Johannesburg Academic Hospital located in Johannesburg, South Africa. The hospital is one of South Africa's ten national hospitals and a teaching hospital associated with the University of the Witwatersrand. I was appointed as Assistant Head of the School of Clinical Medicine in the Faculty of Health Sciences, University of the Witwatersrand, in 2018, the position I continue to serve to date.

I also served as a councillor in the College of Obstetricians and Gynaecologists (COGSA) from 2017 to 2019. COGSA is a constituent college of the CMSA. Additionally, I held a council member position in the Gauteng branch of the South African Medical Association (SAMA) from 2016 to 2019. Since 2008, I have been involved as an examiner, convenor, and moderator for various examinations within COGSA. I have also contributed to the evaluation panel of HPCSA training programs and engaged with HPCSA stakeholders.

Through my role as a councillor and member of the management team of the School of Clinical Medicine in my institution, as well as my participation in CMSA and HPCSA activities, I have gained invaluable insights into PGME related issues in South Africa. This has granted me an insider researcher status. Moreover, I serve as both an internal and external examiner for the undergraduate MBCHB and Master of Medicine in Obstetrics and Gynaecology training programs at my university and five other medical schools.

Having worked in three of South Africa's nine provinces, trained in two of its ten medical schools, and lectured in two, I bring with me a wealth of knowledge on teaching and supervision of undergraduate (medical, nursing, clinical associates) and postgraduate medical students (Obstetrics and Gynaecology), including assessment processes. I have

assumed various roles, including clinical teacher, manager, examiner, council member, training program evaluator, and quality assurer.

Consequently, in this thesis, I draw upon my personal experiences as a trainee and consultant-lecturer/clinical tutor, having received training and worked in some of the medical schools represented by the study participants. Furthermore, my disciplinary and professional knowledge on the subject is enhanced by my role as a lecturer, manager, program evaluator, examiner, and council member, as well as my involvement in discussions pertaining to specialist training in South Africa.

My background and insight into the research subject and context were crucial in generating, analysing, and interpreting the research findings. This expertise allowed me to understand the issues raised by the study participants, interpret the data accurately, which contributed to the final results. I was however always conscious of the risk of infusing my personal experiences into the study. Henceforth, I adhered to the CGTM methodology guidelines and consistently engaged in reflexivity. These were crucial in mitigating my personal bias and assisted me in separating my personal experiences from those of the study participants.

I compared my experiences during the time I was a trainee medical specialist with those of the research participants. My background assisted me in knowing what to look for in the data and enhanced my understanding of participants' accounts of their experiences (Gentles et al. 2014). Comparing my personal and professional experiences with those of the study participants helped me identify the similarities and differences between mine and theirs. This process is similar to the theoretical comparison described by Corbin and Strauss (2008). Consequently, the result of this thesis is grounded in data that reflect the study participants' lived experiences and not my personal experiences, biases, or assumptions.

3.13. Summary and conclusion

In this chapter, a detailed account of the steps and procedures taken in collection, analysis, and interpretation of the research data, including the underlying assumptions were presented. This included discussions on the choice of study questions, context, research methodology, data analysis and interpretation. The chapter concluded with my personal reflexivity as an insider researcher. The reflexivity focused on, among others, the contribution of my personal background, disciplinary knowledge, and professional experience in the research process and how those influence the choices I made, data collection and interpretation of the findings. The results of the study are discussed in Chapter 4.

CHAPTER 4: FINDINGS

4.1. Introduction

The purpose of this chapter is to present the main findings of the study. This study aimed to explore the lived experiences of trainee medical specialists within the South African specialist certification framework that first came into operation in 2011, the challenges they faced, trainees' navigational strategies and factors that informed their choice of strategies. Furthermore, the aim of the study was to use the information to construct a middle-range theoretical model that explains the trainees' experiences, including making recommendations directed at improving specialist training in study sites as well as to influence education policy direction. The results are presented as follows: in the first section, focuses on the profile of the study participants. This is followed by a presentation of the open codes supported by empirical data. Subsequent sections focus on the focus codes, theoretical interpretation of the research, the middle-range theoretical model, concluding with a summary.

4.2. Profile of study participants

A summary and profiles of the research participants are presented in Tables 3 and 4 respectively. A total of 30 participants trainee medical specialists were recruited for this study, and 16 (53.3%) males while 14 (46.7%) were females. They represented four specialities, Medicine, Obstetrics and Gynaecology, Paediatrics, and Surgery. The mean age of the study group was 33.7 (Range: 29-51). The majority of study participants were married (22, 73.3%), were specialising in Obstetrics and Gynaecology (10, 33.3%), had passed Part 1 or Basic Sciences examinations (25, 83.3%) and were in their final year of their studies (14, 46%). Most of them were parents (26, 86.7%) and the average number of children in the study group was 1.6 (Range: 0-5). Out of the 14 study participants who were in their final year of study, 12 (85.7%) had already completed their Master of Medicine (Mmed) dissertation at the time of the interviews. Furthermore, five (35,7%) had written

the Part II specialist (National Exit Fellowship) exam and four (80,0%) managed to pass the exam on first attempt).

Profile 3: Profile of study participants

Participant Number	Age	Gender	Marital Status	Discipline	Year of Study
1	36	Male	Married	Obstetrics & Gynaecology	Final year
2	36	Female	Married	Obstetrics & Gynaecology	Final year
3	32	Female	Married	Obstetrics & Gynaecology	Final year
4	36	Female	Married	Obstetrics & Gynaecology	Specialist
5	51	Male	Divorced	Obstetrics & Gynaecology	Final year
6	34	Male	Single	Obstetrics & Gynaecology	3rd year
7	47	Male	Married	Obstetrics & Gynaecology	Final year
8	31	Female	Married	Obstetrics & Gynaecology	2nd year
9	31	Male	Married	Paediatrics	Final year
10	34	Male	Married	Paediatrics	2nd year
11	29	Female	Married	Paediatrics	2nd year
12	33	Male	Married	Surgery	Final year
13	42	Male	Married	Surgery	1st year
14	46	Male	Married	Surgery	3rd year
15	29	Male	Single	Surgery	1st year
16	34	Female	Married	Medicine	Final year

Participant Number	Age	Gender	Marital Status	Discipline	Year of Study
17	34	Female	Single	Medicine	Final year
18	34	Female	Married	Surgery	Specialist, first-year practice
19	37	Female	Married	Obstetrics & Gynaecology	Specialist, first-year practice
20	36	Male	Married	Obstetrics & Gynaecology	Specialist, first-year practice
21	37	Male	Married	Surgery	3rd year
22	32	Female	Single	Medicine	Specialist, first-year practice
23	33	Female	Married	Medicine	2nd year
24	30	Male	Single	Medicine	1st year
25	30	Male	Married	Surgery	1st year
26	34	Male	Married	Surgery	Final year
27	34	Female	Single	Paediatrics	Final year
28	33	Female	Married	Paediatrics	Final year
29	31	Female	Married	Paediatrics	Final year
30	32	Female	Single	Paediatrics	Final year

Table 4: Summary of the study participants

	Category(n=30)	Total (%)
Gender	Female	14 (46.7)
	Male	16 (53.3)
Marital status	Divorced	1 (3.3)
	Married	22(73.3)
	Single	7 (23.3)
Age	Average	33.7 years (range 29-51)
Number of children	Average	1.6 (range 0-5)
Specialty	Surgery	8 (26.7)
	Medicine	5(16.7)
	Obstetrics and Gynaecology	10 (33.3)
	Paediatrics	7(23.3)
Year of Study	1st year	4 (`3.3)
	2nd year	
	3rd	3 (10)
	4th /final year	14(46.7)
	Specialist	5 (16.7)
Number of attempts on Basic Sciences/Part I CMSA Fellowship examination before passing.	Once	25 (83.3)
	Twice	4 (13.3)
	Three or more	1 (3.3)
Number of attempts on Part II/ Final Part (n=5)	Once	4 (80.0)
	Twice	1(20.0)
MMed Research Completed (n=14)	Yes	12 (85.7)
	No	2 (14.3)

4.3. Codes and categories

The study followed an intense coding process that involved constant comparison analysis (comparing codes with data, segments of data with data, codes with codes, codes with categories and categories with categories), theoretical sampling and memo writing. A total of 117 open codes were generated. These were consolidated into 32 codes after comparing them with each other (looking for differences and similarities) and the rest of the transcripts. Focused coding generated 11 codes and theoretical coding, seven codes which were synthesized into seven theoretical categories. The codes and categories appear in Table 5 (the numbers in brackets next to open codes represent the total number of interview scripts where the open code appeared).

The 32 Open and 11 Focused codes centred around participants' personal projects, the constraints they encountered and impact of these constraints on their overall well-being and personal aspirations (dreams), the role of personal agency in dealing with the constraints, the factors that influenced their agency, the strategies employed to overcome the constraints to prioritize their personal projects, and the outcomes personal agency. A summary of these codes is provided below:

- Personal dream/ projects (Open Codes 1and 2, Focus Code 1 and Theoretical Code 1)

This category encompasses the primary aspirations of the participants, which revolved around becoming medical specialists in pursuit of personal dreams (personal identity), making meaningful contributions to their communities, and gain recognition in their communities by becoming medical specialists (social identity).

- Constraints and impact (Open Codes 3-15, Focus Code 2 and 3)

This category encompasses factors related to the training environment and programs that were evaluated by trainees in the context of their personal dreams/projects. These factors were identified as constraints, as they created barriers between the trainees and their personal aspirations. The identified factors primarily pertained to the structure of the training programs, clinical considerations such as high patient load, and institutional practices (culture) that

encompassed various forms of hostilities (interpersonal, bullying) and discrimination (gender, racial). While these factors were temporary in their nature, they had a detrimental impact on the trainees' physical and psychological well-being, as well as their confidence in passing the specialist exams and their ability to practice independently. This was primarily due to a feeling of being inadequately prepared for both exams and practice.

- Agency (Open Code 17, Focus Code 4)

This category represents trainee specialists' activation of personal agency in response to the barriers they were facing to prioritise their personal dreams or projects. It signifies an independent and goal-directed decision making that is fuelled by a desire to achieve one's dream.

- Mediating factors (Open Codes 17-22, Focus Code 5)

This category represents the factors that influenced the activation of personal agency, and choices of strategies directed at circumventing the obstacles/barriers. These factors include reflexivity (the process of reflecting or internally deliberating about the challenges one is facing and evaluating these challenges while considering one's personal dreams), personal histories (previous experiences and ability to negotiate challenges successfully), and social support from family members, peers, and professionals. These factors were helped the trainees to rise above the challenges in pursuit of their personal dreams.

- Agentic strategies (Open Codes 18-30, Focus Codes 6-8)

These categories encapsulate the strategies employed by the participants in pursuit of their individual aspirations after activating personal agency. The strategies encompassed the utilization of online resources, participation in study groups, attending educational seminars, and seeking guidance outside their educational institutions. The selection of these strategies was informed by the belief that the strategies offered them the best chance of achieving their dreams/personal projects. Furthermore, the study participants engaged in ongoing evaluation

of these strategies, making necessary adjustments or modifications as circumstances necessitated.

- Outcome (Open Codes 31-33, Focus Code 9-11)

This category exemplifies the results of trainee medical specialists' personal agency in their professional development. By effectively navigating the structural limitations of their training, they have not only accomplished their personal aspirations of becoming medical specialists (personal identity), but also help them to contribute to society (social identity). Moreover, they have gained maturity and resilience, including acquiring valuable lifelong skills that would enable to overcome obstacles in future. They also made commitment to be catalysts for change, offering support to future trainees in order to mitigate the impact of structural constraints within specialist training environments.

Table 5: Codes and categories

Initial/Open code (Frequency, n=30)	**Focus code**	**Theoretical category**	**Dimension of the Theoretical category**
1**.** Driven by personal dream (30) **2**. Wanting to play meaningful role and contribute to the health of their communities (5)	1. Driven by personal dreams	1. Personal project (personal and societal identity)	Drivers for personal agency
3. Being thrown into the ditch (8) 4. Facing challenges because of the organisation/	2. Facing constraints	2. Program structure and departmental culture/ practices	Factors that constrain the agency of study participants

Initial/Open code (Frequency, n=30)	Focus code	Theoretical category	Dimension of the Theoretical category
structure of the training program 5. Struggling because training program lacked clear structure and curriculum (28) 6. Finding the arrangement between CMSA and universities to be unfair 7. Perceiving the HPCSA to be failing the trainees and the country 8. Being taught and supervised by inexperienced and uninterested consultants (19) 9. Not getting support or supervision (30) 10. Not being assessed and given feedback (30)			

Initial/Open code (Frequency, n=30)	Focus code	Theoretical category	Dimension of the Theoretical category
11. Facing high patient load, shortage of staff, lack of theatre time and long working hours (14) 12. Being subjected to gender and racial discrimination (11) 13. Being subjected to internal politics and humiliation (30)			
14. Feeling physically and emotionally exhausted (8) 15. Feeling inadequately prepared for exams and independent practice (23) 16. Feeling like giving up (4)	3. Losing control temporarily	3. Impact of constraints on participants' well-being and their personal projects	Effects of the Constraints on Study Participants well-being and their dreams/projects
17. Prioritising personal goals and dreams (30)	4. Prioritising personal dream	4. Personal agency	Agency of participants

Initial/Open code (Frequency, n=30)	**Focus code**	**Theoretical category**	**Dimension of the Theoretical category**
18. Relying on previous experiences and personal history to activate and support personal agency 19. Engaging in reflection 20. Getting support from family members and churches (12) 21. Getting support from fellow trainees (30) 22. Seeking professional psychological help (2)	5. Drawing strengths from personal history and previous experiences to activate and support personal agency. 6. Using reflection to activate and support personal agency 7. Capitalising on social and professional support	5 Mediators of agency	Factors that enable and support personal agency
23. Setting and monitoring own goals and progress 24. Using online and library resources (14) 25. Networking with other trainees (8)	8. Choosing strategies to circumvent the constraints in the learning environment	6. Agentic strategies	Strategies used by participants to circumvent the effects of the constraints.

Initial/Open code (Frequency, n=30)	Focus code	Theoretical category	Dimension of the Theoretical category
26. Forming study groups (10) 27. Seeking external assistance (4) 28. Relying on past question papers (14) 29. Attending seminars organised by societies of trainees (3)			
30. Becoming mature and developing resilience (24) 31. Achieving personal dreams/project 32. Committing to help others (8)	9. Becoming mature and developing resilience 10. Realising personal project 11. Becoming a change agent/social actor	7. Outcomes of personal agency	Personal and societal benefits of outcomes of personal agency

Table 6 below is an example of how codes and categories were developed (please refer to the methodology section for detailed discussion).

Table 6: Examples of how codes and categories were developed from data.

Data	Open code	Focused code	Theoretical category
For me, the whole thing has taught me one thing: A person must work for themselves if they want to reach their personal dreams. No one will do it for you. You carried it. You gave birth to it, so you must look after it yourself. **Participant 30, Paediatrics** If you want to achieve your dream, you must be prepared to sacrifice your comfort to achieve it. **Participant 29, Paediatrics**	Taking responsibility for personal goals and dreams	Prioritising personal dreams	Agency

Data	Open code	Focused code	Theoretical category
Most of the black Registrars were complaining about how they were treated by the two White consultants. They were rude, would shout at you in front of students and call you all sorts of names. **Participant 23, Medicine** You could see that some of the consultants thought that surgery is not for women**.** **Participant 26, Surgery**	Being subjected to gender and racial discrimination	Facing constraints in the learning environment	Impact of the structural and institutional practices/culture

4.4. Open codes

The open codes form the first stages of data analysis. This entailed assigning descriptive codes to pieces of information in the text, utilizing gerunds (active verbs) to effectively capture the essence of each code. As a result, a total of 32 codes were generated. These condes encompassed a broad spectrum of subjects. In keeping with the objectives of the study, the codes described the experiences of trainee medical specialists who participated in the study, the challenges they faced, their responses to the challenges, factors which informed how they responded, strategies they used to try and overcome the challenges they were facing and, outcomes of their responses/strategies (Table 5).

4.5. Focused and theoretical codes

The focus codes that emerged can be broadly grouped into seven theoretical codes/categories: (1) personal dreams, (2) constraints faced by study participants, (3) impact of the constraints on participants' well-being and their dreams/ projects, (4) personal agency, (5) mediators of participants' personal agency, (6) agentic strategies and (7) outcomes of the personal agency. Because of space limitation, the focus codes and their corresponding theoretical codes/categories are discussed below.

4.5.1. Personal dreams

The theoretical code/category, **Personal dreams**, is represented by Focus code 1: Driven by personal dreams**.** Each of the 30 participants expressed that their decision to specialize was a personal one, driven by both personal aspirations and altruistic motives. They aimed to serve disadvantaged communities and address healthcare challenges that the South African society faces. Consequently, the participants' aspirations were not only personal but also altruistic. They envisioned themselves as contributing members of society with a responsibility to address societal health issues and the healthcare needs in their communities. The following quotes illustrate this point:

I have always wanted to be a paediatrician. It has always been my dream to be a specialist and not to stay as a GP for the rest of my life. Patients, colleagues, and community respects you when you become a specialist. Also, during my work as a medical officer, I came to realise that the mortality rate among children in South Africa and developing countries is very high. I also discovered that some of the reasons behind this high mortality is the lack of knowledge and skill in managing childhood illnesses and diseases. So, I thought I should come back to do paediatrics and, try and hopefully contribute towards reducing the alarmingly high mortality rate among children in this country. I am passionate about children's health. (Participant 10: 34-year-old male, Paediatrics). For Participant 10, being a specialist was a personal passion, but it also provided him with an opportunity to contribute to reducing the high level of child mortality in South Africa.

Participant 9 (31-year-old male, Paediatrics) derived self-fulfilment when assisting a sick child in addition to being driven by altruism. I suppose for me, specialising is fulfilling in a sense. While I was working as an intern in different disciplines, I started to understand what it means to be a medical practitioner. You must do calls, and you must be woken up at ungodly hours of the night. So, waking up for a kid, for a child, it's not problematic for me. If I get woken up at 01:00 because of a child that's sick, then I know the child is sick. The child, therefore, needs my help and knowing I can provide that help is fulfilling'. From the above, we can conclude that the decision to specialise was personal and driven by the need to contribute to solving societal health problems (social actor).

4.5.2. Constraints faced by study participants.

The theoretical category, **Constraints faced by study participants**, describes the constraints experienced by trainee medical specialists during their training. The constraints functioned as barriers that stood between them and their dream. The theoretical category is represented by Focus code 2: Facing constraints derived from 12 open codes that can be grouped into four themes: (1) Organisation/structure of the training program, (2) arrangement between the CMSA and universities, (3) clinical workload, (4) institutional culture and practices and, (5) HPCSA failure. These are discussed in detail below, with supporting quotes where appropriate.

4.5.2.1. Structure and organisation of the training program

The study participants reported that the training programs lacked a clear structure, syllabus, and curriculum, including well-defined objectives and milestones. Additionally, ongoing in-training assessments were not part of specialist training. Such deficiencies were evident in reported lack of reference to these aspects in the departments' communication with the trainees. This is illustrated by the quotation below:

No, there is no structure. There's no discussion in terms of the knowledge and skills you need to achieve during the different stages of your training. There is nothing like, by this stage, you

should be able to do a TAH (total abdominal hysterectomy) on your own adequately with confidence. By this time, you should be able to do this. It is an assumption that is made by the department to say you have put or are putting effort so you will have adequate mixed of cases by the time you finish. There is no ongoing assessment. There is no there's no ongoing examination. And in terms of the surgery, I think it's just based on you. (Participant 7, 47-year-old male, Surgery).

According to the participants, the syllabus on the CMSA website was a list of broad topics with no clear focus. They did not find the list helpful. This is illustrated by Participant 12 (33-year-old male, Surgery: What syllabus? There is no syllabus. That is the other thing that makes it difficult. There is a list of topics on the college website, broad and not focused. The list is not helpful. To overcome the above, trainee medical specialists had to rely on colleagues for guidance. The following extract illustrate this: There was also no clear curriculum. My only source of information, the bits and pieces I know, are because I'm close to people who are writing Part Two now (Final specialist exam). They too got the information on what to focus on from the others who were writing. (Participant 11: 29-year-old female, Paediatrics). The study participant found learning difficult because of the lack of structure, curriculum, syllabus, clear training objectives, milestones and ongoing assessment.

The negative impact of the lack of structure of the training program was further exacerbated by the high patient load and lack of support. This situation made the trainees feel that they were failing their patients because of the lack of skills and knowledge and also being left alone to look after patients without the necessary professional knowledge and skills. This is illustrated in the by the extract: My experience was not that good. First, there is no proper structure of the training program and heavy patient workload. There is no support, and because of that, we are letting some patients down by not managing them appropriately. Some conditions need consultants. This is one of the problems in our training. We teach each other most of the time. This is not good for us but also the patients. We are failing them (Participant 4, 36- years- old female, Obstetrics and Gynaecology).

4.5.2.2. Arrangement between CMSA and universities

The arrangement between the CMSA and universities was seen as problematic. This was because the CMSA was not involved in their training, yet the institution was granted a mandate to run national exit specialist examinations. They raised concerns that because the CMSA was not involved in the training, the body had unfair expectations about what the candidates had been taught and what they were trained on. The quotation below seeks to illustrate this:

I think the arrangement where the college only examines but is not involved in training if very unfortunate because, in my opinion, if the examiner does not know what the trainer is doing, then the examiner will have an unfair expectation from the trainee. Training institutions have different approaches to training, with some not training at all, yet the examiner expect to have good outcome from the trainees. For me, this arrangement is unfortunate. (Participant 2, 36-year-old female, Obstetrics and Gynaecology).

They were also worried that the examiners did not know the candidates and, as a result, were making high-stakes summative assessments decisions that determined their futures on a single short-lived encounter with them. According to the trainees, this encounter did not consider their overall clinical performance during the four to five years of training. Below is a quotation supporting this statement:

The college makes decision on a few days of exams. The examiners do not know us. They don't know how I work. They don't know how I operate. They only decide about my future in fifteen minutes. So, I believe the Mmed should be brought back so that people can have an option of doing the college or Mmed. The Mmed is the fair way of assessing someone because the examiners have been with the person for many years. If you have been with the person for many years, you will know the person much better, their commitment, clinical skills, ethics, and everything combined. Unlike subjecting one to a college exam where individuals from, let's say, Durban, Cape Town, or Pretoria sit in a committee, assess you and then decide about your future on one encounter, yet you spent four or five years in training.

It is totally unfair. They decide on whether you pass or fail based only on your exam performance, irrespective of how you have been performing all along. (Participant 14, 46-year-old male, Surgery)

The Universities are the one training us, but your fate is decided over a few days by people who know nothing about how you have been doing during your training. I have seen this with my peers. They only have a couple of days to decide whether you can be a specialist or not. In those days, you are asked questions on some topics and not everything, yet they make judgement based on those few questions as to whether you are good or not or whether you are ready to practice as a specialist or not. The university should be the one making that decision and not an examiner whom I have never met and who knows nothing about me. How can you assess someone you never taught? If the college wants to examine us, it must also get involved in our training. That's how I feel (Participant 15, 29-year-old male, Surgery).

4.5.2.3. Clinical workload, shortage of staff and long working hours

The study participants also found the high patient load, shortage of staff and long working hours challenging. They indicated that they were too tired to study by the time they finished their work; however, they could not complain because of the fear of being victimised. This is seen in the following quotations: There is a huge problem. We have many patients but few doctors. Our clinics finish late; patients are always complaining. There is no time to rest. By the time you finish the clinic, you are so exhausted that you just go home and sleep. There is no time to study. When you are not working, you are too tired to even open a book. (Participant 22,32-year-old female, Medicine).

In terms of duty hours, you are forced to workdays on end without rest. There is no adherence to working hours, and if you complain, either it gets swept under the carpet, or you risk getting victimised. We just have to keep quiet and work just to get through the system. (Participant 18: 34- year- old female, Surgery).

Some of the study participants stayed in hospitals for up to three days post-call due to the departmental policies that did not allow them to hand over patients awaiting surgery to colleagues as portrayed by the following extract: We are not allowed to handover patients who need to go to theatre to other registrars. You must operate them yourselves. You can stay in the hospital for up to three days in a row if you are unlucky and have admitted a lot of sick patients during a call. That's what you are told. It is exhausting. There is no time to study, but you must make time somehow. (Participant 18, 34 -year-old female, Surgery).

4.5.2.4. Departmental culture and practices

Departmental culture and practices were also seen as obstacles/challenges in that negatively affected their learning. These practices were seen as an established cultures in that they were not isolated incidences but recurrent practices. The following quotation illustrates this point: It was tough, but I think it's a culture more than anything. What I learnt is it's a university culture. Our supervisors are simply doing what was done to them. They, too, were probably left alone and not supported when they were specialising. So, for them, that was how things are done. (Participant 3, 32-year-old female, Obstetrics and Gynaecology).

4.5.2.4.1. Lack of supervision

Another major challenge raised by the study participants was the lack of supervision (clinical and research). Even in times when a consultant was present during an elective theatre list (most often the trainees reported that they were operating alone or with colleagues without consultant supervision), the consultant would not teach; instead, he/she would take over the theatre slate and not allow them to operate. They attributed this to the fact that some of the consultants were very junior and needed to gain experience, the consultants' lack of interest in teaching and that they (consultants) wanted to finish the lists quickly so that they could go to their private practices (RWOPS). Because of the above, they felt that the academic inputs during their training were very poor. Well, there was no supervision at all if I may put it like

that. Supervision, I will say when a consultant ever comes to theatre, they will not teach you; they will just operate to finish theatre list so that they can go to their private practices. And some of the consultants were still on the learning phase, which was difficult for us to also learn. In terms of the academic side, that was the side that was the poorest in my training; hence, I keep on saying that I had to go outside and get help. (Participant 1, 36-year-old male, Obstetrics and Gynaecology)

I do not know. It seems like the consultants are not interested in teaching us. Some we know are always running to their private practice. (Participant 26: 34-year-old male, Surgery)

The same challenges applied to research supervision. The study participants had to write the MMed protocol without supervision as seen in the following quotation: There isn't much support also there. You are just told: Go and write your protocol. Give it to us, let's see. There's no frequent interaction to see how far, what articles you have, are they good enough to lay the foundation for you to write your protocol, and so on. So, you're basically on your own. (Participant 6, 34-year-old male, Obstetrics and Gynaecology).

In addition to the lack of clinical supervision, no formal assessments and feedback were provided. Instead, the study participants believed that their consultants relied on hearsay about their performance. In the absence of any formal assessment and feedback, they used the consultants' reactions to gauge how they were performing. You never get formal feedback on how you are performing; you just must judge the motion around. The consultants rely on what your colleagues tell them about you. If they are happy with you, then you know your colleagues are not saying bad things about you. If the consultants are not happy, then you know someone is saying something behind your back. You judge how well you are doing by how the consultants treat you. There is no formal report back. (Participant 16, 34-year-old female Medicine).

4.5.2.4.2. Lack of study and research time because of prioritisation of service

The study participants complained of the high workload. The high workload often left them so tired that they could not study after knocking off from work. There is no time to study.

You are always working, and when you are done, you are just too tired to even open a book. (Participant 29: 31-year-old female, Paediatrics). There is no protected time to do research. We don't. You must find your own time to do research.' (Participant 21: 37-year-old male, Surgery). It is difficult to study or do research. We have calls in-between, we are working twenty-four hours, and tomorrow you're exhausted, the other day you are back at work, you know, so time goes by before you work on it. Starting again is a problem. Maybe if we had time off, it would help. (Participant 11:29- year-old female, Paediatrics).

4.5.2.4.3. Racial, gender discrimination and humiliation

Gender and racial discrimination were some of the departmental cultures and/or practices that were perceived to have negative impact on their training. Accordingly, the study participants believed that access to educational support depended on one's race, with Black trainees suffering the most because of the limited number Black medical specialists whom they could reach out for support. Because Black specialists are few, we find ourselves on the disadvantaged side. You'll find out that when other races teach you, they do not give you all the information you need to succeed. This is common in White institutions. English, Afrikaners, Indians, you know they have people who support them, but we do not have people to support us because of the number of specialists that are coming from our own African background. (Participant 18: 34-year-old- female, Surgery).

Black trainees also perceived that White and Indian consultant preferred to teach White and Indian registrars and not them. Consequently, the Black trainees felt unwelcome. This experience caused them emotional pain as illustrated by the following quotation: You can see it. Some White and Indian consultants prefer to teach White registrars and Indians and not black registrars. You feel like you are an intruder by their attitude. It is painful.' (Participant 30: 32-year-old female, Paediatrics).

Others were prevented from performing certain procedures because of their gender: I remember one day we were during ward round, and one of us in our unit had to go to theatre to assist a junior registrar, and I volunteered, but the consultant said, no, let so and so go

instead. The patient is obese, you might find it difficult. The person who was chosen was junior to me, so I took it to mean that I was not allowed to go and assist because I was female, and he did not believe that female registrars were competent enough to manage the patient.

Some consultants also tend to enjoy passing sarcastic comments about women surgeons. They make it look like a joke, but deep down, you know they meant it. It is not easy to be a female registrar. (Participant 26: 34-year-old male, Surgery)

4.5.2.4.4. Humiliation

The study participants reported being humiliated in front of medical students, nurses, and peers was common. This practice was reported to be more common in surgical disciplines. The practice involved name-calling, targeting mostly female trainees: There are challenges with consultants' attitudes. During ward round, you find that they will try and humiliate you in front of your colleagues and medical students if you happen not to know something. Sometimes, it becomes more of a personal attack and name-calling. (Participant 10: 34-year-old male, Paediatrics). We see the same things happening to registrars during internships and community service. Registrars are often humiliated in front of students and nurses, but the surgical discipline seems to be worse when it comes to female registrars. (Participant 26: 34 years old male Surgery)

4.5.2.4.5. Internal fights and politics

They also experienced tensions and internal fights among consultants and were caught in these fights. These interpersonal conflicts had a negative impact on training. There were lots of internal fights at that time in the department, and I thought I don't want to be in that kind of environment. There was also a lot of pressure financially as was taking care of my siblings. I decided to quit and go and do private practice. After some time, I decided to give it another try. I never understood what was going on. There were lot of tensions among the consultants including the HOD. Some were not talking to each other, and registrars were getting caught in the mess. I think it is just personalities. (Participant 7: 47-year-old male, Obstetrics and Gynaecology). I must confess that because of the politics and fights going on between consultants in the department, I've had my topics changed four times. That delayed me, you

know, getting the protocol off the ground. Supervisors were changed, and topics were also changed. So, I made a point to choose a new topic, do literature research and get the proper articles that I could use to finalise my protocol (Participant 6: 34-year-old male, Obstetrics and Gynaecology).

4.5.2.4.6. Blame culture.

Instead of being corrected when they made mistakes, they were blamed and humiliated in front of their peers. It is frustrating, especially when something goes wrong. They will blame you during M & M (morbidity and mortality) meetings and call you names in front of other registrars. (Participant 21: 37-year-old male, Surgery).

4.5.2.4.7. HPCSA's failure

Most challenges cited above were viewed as HPCSA's failure to exercise oversight and regulate specialist training. They cited the Mayosi Report (Mayosi, 2015), a report that was compiled by a Task Team appointed by the Minister of Health. The report reported widespread dysfunction and governance-related problems at the HPCSA. This is captured in the following quotation: We need more oversight. The HPCSA is supposed to be the one doing so. They have a statutory obligation. It is not happening. The college is left to do as it pleases. There is no oversight at all. We thought after the Mayosi report, things would change, but it seems the same problems are continuing. The HPCSA is failing registrars and the country. (Participant 14, 46-year-old male, Surgery)

4.5.3. Impact of the Constraints on the Participants' sense of well-being and personal dreams

This theoretical code/category, **Impact of the constraints on the participants' sense of well-being and personal dreams**, is represented by the Focus code 3: Losing control temporarily**.** This code refers to the temporary destabilising effects of these challenges on participants' well-being and personal dreams. The weight of the challenges temporarily destabilised them, making them to struggle to keep up with their studies and research requirements:

I think so. But sometimes, I'm shifting priorities. I am struggling to find a balance. When I concentrate too much on the research, I fall behind with my reading then shift back to reading then the research suffers. It is difficult to find a balance.' (Participant 12: 33- years-old male, Surgery).

These effects are discussed below:

- Physical and emotional exhaustion

The clinical demands, high workload and long working hours took a physical and emotional toll on them. As a result, they felt emotionally and physically exhausted.

It is physically exhausting, emotionally draining, and you have no time for yourself (Participant 26: 34-year-old male, Surgery).

- Feeling inadequately prepared for exams and independent practice.

They also did not feel adequately prepared to pass the national specialist exit examinations and had doubts about their preparedness for independent private practice:

It is a struggle to maintain the balance, and this becomes a problem when you have yourself only for the final exam then it becomes a problem. You never feel prepared. You do not know whether you have been doing enough to make you pass. (Participant 18, 34-year-old female, Surgery). I do not feel adequately prepared for exams. And the reason why I say this, we do have some presentations and discussions but that other institutions have much more structured teaching programs, including exam preparation. They have exams, many exams, maybe every two months or maybe every month. These exams continuously build their knowledge and exam techniques. They learn how to approach questions and things like that. It's something that is lacking with us, with the institution here (Participant 5, 51-year-old, male Obstetrics and Gynaecology). But I can't say every registrar that takes the exam and pass is ready for independent practice. The program does not prepare you for independent practice. I don't think so. I have passed the exam but do not feel I can go out there and practice on my own with what I have learned. I think for myself personally I am not ready to work without support. The program did not prepare me to practice independently except maybe surgical emergencies. (Participant 21: 37-year-old male, Surgery).

- Feeling like giving up

The situation was overwhelming and frustrating to some of them, to an extent that some of the trainees contemplated quitting the program at some stage. Thinking like giving up? That is an understatement. You feel overwhelmed and frustrated' (Participant 30: 32-year-old female, Paediatrics).

The above was temporary in that they could navigate the challenges in the learning environment through agency.

4.5.4. Agency

The theoretical category **agency**, derived from Focus code 4: Prioritising personal dreams, denotes the study participants' response to the challenges/constraints encountered during training. This category suggests that the study participants responded to the challenges by activating personal agency instead of adopting a state of helplessness or giving up. They did so to prioritise their personal dreams and sought ways to circumvent the effects of the challenges/constraints on their dreams. On my part, I came with goals, and yes, I was clear what I wanted to get from the system. I wanted to be a physician, and I was not going to allow anything or anyone to stand between me and my dream'. (Participant 17: 34 years-old- female, Medicine). You know why you joined the training in the first place, so you tell yourself I am here to get my qualification and leave. I realised I had to stay strong and chase my dream. (Participants 21, 37 years old male, Surgery). We know what we want from the system. We come here to get what we want and leave after four years. (Participant 27, 34-year-old female, Paediatrics)

The quotations above suggest that the study participants had clear goals. They knew why they joined the training programs and as a result, made sure to prioritise their dreams and come out of the training having achieved what they set out to do regardless of the circumstances. They were determined not to allow anything to prevent them from realising their dreams.

They displayed personal agency by setting their own goals, working hard, engaging in self-assessment, and seeking assistance whenever they felt they needed help. You must think hard. Look for possible ways that can help you achieve your goals. Set you own goals, monitor yourself and make sure that you stick to your plan (Participant 24: 30-year-old male, Medicine).

The agency expressed by the study participants was both individual and collective. They formed study groups and supported each other to circumvent the effects of the challenges/constraints they were facing. We also formed a study group with other registrars who were also writing and networked with others from our sister universities. (Participant 25: 30-year-old male, Surgery).

4.5.5. Mediating and conditions supporting the expression of personal agency.

The theoretical code/category, **Mediating and conditions supporting the expression of personal agency**, denotes three factors that mediated and supported the study participants' expression of personal agency. The following three codes represent this:

Focus code 5: Drawing strengths from personal history and previous experiences to activate and support personal agency**.**

Going through difficult situations was not something new for some of the study participants. They have been through difficult circumstances before and successfully navigated them. Some of the difficulties they went through were socio-political in nature. They reflected on them (e.g. racial discrimination) and used these past experiences to evaluate the situations they were facing and simultaneously projected into the future. This process informed their responses to the challenges they were experiencing.

Thank you. It's part of life. As a Black person, I have struggled all my life. We sort of get used to this kind of life. It is a struggle all the way, and we keep going. (Participant 20, 36-year-old, male, Obstetrics and Gynaecology)

According to the above, under apartheid, the lives of Black people were characterised by struggles, and the quotation below suggests that what the study participants were going through was something Black people were accustomed to and, therefore, did not come as a

surprise. These past difficult experiences have taught them how to cope and how to navigate difficult circumstances. They learnt to focus on their goals and fight for their dreams amidst these difficult circumstances. Yes. I have been fighting all my life, so I have learnt to be strong and focus on the prize even if it is tough (Participant 24: 30-year-old, male, Medicine).

Furthermore, they also drew inspiration and strength from overcoming challenges during their undergraduate training and as a result, believed they could overcome challenges they were facing during specialist training. I have learnt that to succeed in life, you must know what you want, focus on the goal, and never allow anything to distract you. Life is not easy; it will never be easy. My undergraduate years were not easy either, but I have learnt to survive. Medicine is survival of the fittest. I survived my undergraduate training. I will survive my specialist training. Participant 23, 33-year-old female, Internal Medicine)

Therefore, participants' previous experiences (personal histories) and outlook into the future played a critical role in informing their responses to the challenges that confronted them**.**

Focus code 6: Using reflection to activate and support personal agency.

This focus code represents some of the mediators of participants' expression of personal agency. They used reflectivity (self-talk) to evaluate the challenges they encountered which also informed their responses to the situation. They engaged in internal conversation (autonomous reflexivity) and bounced ideas with peers (communicative reflexivity) to check whether their envisaged plans/strategies made sense. You tell yourself you know why you are in the program and focus on why you joined the program in the first place. You tell yourself: I must be strong. I can do this. This, too, shall pass. You speak to other registrars. You bounce your ideas with them. You get encouragement and lot of support from fellow registrars who have also gone through the same experience. Seniors support juniors, and juniors work together to support each other. This is what keep us going. (Participant 20: 36-year-old male, Obstetrics and Gynaecology).

They also used reflexivity to evaluate and monitor their strategies, changing them as needed. Yes. I sit down and think about the situation, looking for possible ways to overcome whatever problem was in front of me. Coming up with the right strategy is not always easy, but what I have learned is that you try one strategy, and if it does not work, you go back to the drawing board and think until you find the strategy that works. (Participant 26: 34-year-old male, Surgery).

Reflexivity played an important role in the study participants' expression of personal agency. They use reflexivity to assess and evaluate the situations they were facing, the options/strategies available to them and thereafter, monitor if the strategies they were using were b working.

Focus Code 7: Capitalising on social and professional support to activate and support personal agency.

Social, spiritual, and professional support (social, spiritual, and professional =social support) enabled the expression of personal agency. The study participants sought support and encouragement from significant others (families, partners, peers, spiritual leaders, and mental healthcare professionals). I talked to my family. I talked to my colleagues. I went to church and have spoken to my pastor about it, and when I felt I was not copping, I would seek professional support. They told me to be strong and focus on my career. I believe in prayer, and it does help a lot. (Participant 22: 32-year-old female, Medicine). We have supportive families, but there is also a lot of comradeship among the registrars. Participant 25: 30-year-old male, Surgery). My husband is a registrar also in another department, he understands these challenges. He is very supportive'. Participant 26: 34-year-old male, Surgery).

4.5.6. Agentic strategies

The theoretical code/category, **Agentic strategies**, represented by Focus code 8: Choosing strategies to circumvent the challenges or constraints in the learning environment outlines

the strategies that participants used to overcome /circumvent the challenges/constraints during their training:

4.5.6.1. Setting and monitoring own goals and progress

Instead of being discouraged when faced with difficulties in the training environments, the study participants engaged in self-assessment, evaluating how they were performing and used this exercise to set personal goals and to seek assistance. There was no feedback on how one was performing. You set your own goals and, assess yourself and seek assistance if you find that you are lacking in one way or another. (Participant 19: 37-year-old female, Obstetrics and Gynaecology)

4.5.6.2. Learning Strategies

They devised strategies in response to the situation, which enabled them to acquire the knowledge required for the profession. They believed that the strategies they chose would help them realise their dreams.

4.5.6.2.1. Utilised textbooks, past question papers and online resources

They sought advice from peers regarding the resources they needed to successfully navigate specialist training and pass national specialist exit examinations. I asked my colleagues for advice. They gave me a list of textbooks to read from. They also advised me to look at past question papers, online PowerPoint lectures, YouTube, etc. Because they cover a lot of topics on the internet. That is exactly what I did. (Participant 15: 29-year-old -old male, Surgery). Yes, and they also said that there's a book that you are supposed to use, which is called Bennett, which had almost everything: the summarised version of everything that you need, but you need to supplement it with your anatomy books and other syllabus (resources) such as manuals. (Participant 5, 51-year-old male, Obstetrics and Gynaecology).

The above suggests that the study participants used textbooks, past question papers, and online resources (PowerPoint lectures, YouTube, etc.) to study and to prepare for their exams. The information about which resources to use was shared freely among the trainees.

4.5.6.2.2. Networking with other trainees

Another learning strategy the study participants utilised to study was networking. They networked with trainees from other institutions. This approach helped them to access information and additional support. I networked with registrars from the University of ... (*name removed*) during my preparation for the intermediate exam. They have a program that start in August, leading to the next exams. They helped me a lot. I looked at the blueprint on the CMSA website; however, the blueprint was not helpful. It covered everything. I found networking with my colleagues more helpful than the blueprint. (Participant 15, 29-year-old male, Surgery)

4.5.6.2.3. Forming study groups

They also formed study groups with peers training in the same specialities (home and other institutions) and preparing for their exit national specialist examinations. We also formed a study group with other registrars who were also writing and networked with others from our sister universities. (Participant 25: Surgery).

4.5.6.2.4. Seeking external assistance

The study participants took extra steps to ensure they had all the necessary preparations to succeed. They attended courses offered by other universities as illustrated by the following extract: I also forgot to say that I attended Part 1 course organised by another university. Should I mention the name? (Participant 25, 30-year-old male, Surgery).

4.5.6.2.5. Relying on past question papers

Furthermore, the study participants used past question papers to practice answering exam questions. Without a clear syllabus and/or curriculum, the question papers became a valuable resource that gave them a sense of what they needed to focus on during their examination preparations. Yes. I also worked through past question papers with a friend. (Participant 25, 30-year-old male, Surgery).

4.5.6.2.6. Attending seminars organised by societies of trainees.

Some trainees established national trainee specialist societies to support each other, build networks and interact with one other, including interacting with international sister societies. These societies provided much-needed support for the study participants: One more thing that helped me was the Society of Trainees in Surgery. I came across the information that they were holding pre-exam meetings for registrars and decided to join them. The first meeting was in Durban, so I paid and went to Durban. There were two sessions, one for people who were writing intermediate and another session for people who were writing finals, for two or three days, I think. It also opened my eyes as to what I needed to focus my reading on; otherwise, I wouldn't have known what to read". (Participant 12: Surgery).

4.4.7. Outcome of Personal Agency

The last theoretical code/category, **Outcomes of personal agency,** outlines the outcomes that emanated from participants' expression of personal agency. Thes outcomes are captured by three focus codes**:** Focus code 9: Becoming mature and developing resilience, Focus code 10: Realising personal project and Focus Code 11: Becoming a change agent/ activist**.**

Focus code 8: Becoming mature and developing resilience suggests that rather than getting discouraged by the challenges they faced, the experience of navigating the challenges helped them become more mature and to develop resilience. Their maturity took the form of developing coping skills and learning to navigate challenging circumstances: You must be strong…Really strong. You tell yourself I came here to study and cannot allow anything to stand between me and my dream. I used to worry a lot about these things until I realised that, you know, I needed to find a way to make sure I achieve my dream irrespective of the situation. Indeed, here I am today, grown up and strong! I think I will be able to handle anything in life after this experience.' (Participant 30, 32-year-old female, Paediatrics).

Having navigated the challenges successfully, they became more confident of their abilities to self-manage, work independently, manage complex clinical conditions as well as other

challenges in future: The one thing that the program taught me is that you must believe in yourself, confident in your abilities to manage yourself. You learnt to work independently. You must be able to manage emergencies and difficult situations because we do see a lot of very complex patients, and you get exposed to a very wide range of problems. I had a motto the last two years: just keep going, you can do this. I have become stronger. (Participant 19: 37-year-old female, Obstetrics and Gynaecology).

The maturity and resilience that study participants developed while navigating the constraints in the training environment were instrumental in ensuring their realisation of personal dreams.

The above has been captured by Focus code 9: Realising personal project.

Yes. I came out of the training with my degree but also more matured and stronger. (Participant 23: 33-year-old female, internal medicine). Despite the challenges they encountered, 83.1% (n=30) and 80% (n=5) of the participants were successful in Part 1 (Basic Sciences) and Part 2 (final specialist qualifying) exit examinations on the first attempt, respectively. Furthermore, 12 (85.7%) out of the 14 who were in their final year of training had completed the Mmed research project requirement during the time of the interviews. This data supports the participants' account of their experiences and agentic resolve to succeed amidst the challenges. This data is captured in Table 1 and was discussed previously.

Finally, after going through this experience, participants trainee medical specialists decided to assist other trainees to minimise the impact of the challenges/constraints on their ability to succeed during specialist training. They provided social, psychological, and academic support to their junior colleagues. This is represented by Focus Code 10: Becoming and change agent/ activist**.** To make the training less painful for other trainees, the study participants invested in assisting the trainees to succeed, including sacrificing some of their weekends to give tutorials. This shows their determination and resolve to make a difference in other people's lives: I started private practice, and I am enjoying it. I also meet with registrars every second weekend to teach them. I decided that I will set time to support the

registrars who need assistance. We talk about topics they need help with. Guide them on how to study and prepare for exam and just use the sessions to debrief. (Participant 23: 33-year-old female, Medicine). My plan is to stay in academia so that I can support registrars and hopefully make the training less painful for them. (Participant 24:30-year-old male, Medicine). Yes. I do not want other registrars to feel the same way I felt, so I try to support them. I do post-intake rounds; I do teachings and organise tutorials for them at times that suit them. (Participant 3: 32-year-old female, Obstetrics and Gynaecology).

4.5. Conclusion

In this chapter, the main findings of the study, codes (open, focus, theoretical) derived from the data analysis, and their relationship, were presented. The study's findings indicate that specialist training in study sites faces challenges. Trainees use agency to overcome these challenges. The participants' agency is driven by personal ambitions. The results are synthesized in Chapter 5 to construct a middle-range theoretical model that explains the underlying mechanisms behind the findings.

CHAPTER 5: THEORETICAL MODEL

5.1. Introduction

This study aimed to investigate the lived experiences of trainee medical specialists within the South African specialist certification framework that was implemented in 2011. The study aimed to identify the challenges they faced, the strategies they employed to overcome these challenges, and the factors that influenced their choice of strategies and responses to their lived realities. Additionally, the study aimed to develop a middle range theoretical model that to capture and explains these experiences.

5.2. Research questions.

The study sought to answer the following research questions:

- Q1: How do trainee medical specialists in Medicine, Obstetrics and Gynaecology, and Paediatrics undergoing specialist training in medical schools in Gauteng Province, South Africa, describe their lived experiences of specialist training?
- Q2: What challenges do the trainees encounter during their training?
- Q3: How do the trainee medical specialists respond to these challenges?
- Q4: What informs their responses and choice of strategies?
- Q5: How can the trainees' lived experiences be understood and conceptualised using a model?
- Q6. How can information be used to inform educational policy and practice?

Consequently, the focus of the study was on the following objectives:

- Objective 1: Conduct semi-structured interviews to gather in-depth and comprehensive data on the lived experiences of trainee medical specialists.
- Objective 2: Employ semi-structured interviews to explore the challenges encountered by trainee medical specialists, the nature of these challenges, and their impact on educational experiences.

- Objective 3: Utilize semi-structured interviews and the constant comparison analysis to collect information on how trainee medical specialists adapted and responded to the challenges they faced.
- Objective 4: Utilize semi-structured interviews, constant comparison analysis, and memo writing to investigate individual factors (e.g. past experiences) and other influences (e.g. social support) that shaped the responses of trainee medical specialists to these challenges.
- Objective 5: Investigate the strategies employed by trainee medical specialists to overcome the challenges encountered using semi-structured interviews.
- Objective 6: Analyse patterns and develop a model to explain the experiences of trainee medical specialists through semi-structured interviews, constant comparative analysis, and memo writing.
- Objective 7: Share the study results with the HPCSA, the Department of Health, CMSA, SACOMB, and Universities to contribute to the ongoing medical specialist training programs reform and for review of institutional practices.

The first five objectives were covered in the preceding chapter (Chapter 4). The current chapter will specifically address the sixth objective, which is to construct a theoretical model that explains the participant's lived experiences. It is important to note that the term "theoretical model" can have varying interpretations. In this study, it is used to describe a conceptual structure that integrates the key components of the research findings, with the purpose of weaving a coherent story (Manning et al., 2014) rather than a theory.

5.3. Construction of the theoretical model

As described in Chapter 3, in order to construct the theoretical model, I used the set of questions recommended by Charmaz (2006:52)(Box 4), concepts of action, identity, process, self, and situation from symbolic interactionism (Aldiabat and Le Navenec, 2014; Charmaz, 2006, 2014; Glaser and Strauss, 1997; Salvini, 2019; Corbin and Strauss, 2008) and literature on structure and agency (Archer, 2003; Giddens, 1984) as sensitizing concepts, assisted by memo's and the researchers' sensitivity (my own) (Charmaz, 2014).

- What issues and/processes that are going on in the data?
- How and why do these issues and processes develop?
- What are the responses of those affected by the phenomenon and why?
- What are the results of the actors' responses/actions and/ or the process itself?

Box 4: Questions by Charmaz (2006,52)

This approach helped me to dissect the issues that were taking place in the data as well as to establish their relationship. I identified five issues.

- Study participants were navigating challenges/constraints in their specialist training using agency.
- Factors informing participant's agency.
- How the agency was enacted and supported.
- Manifestation of participants' agency in the form of learning strategies.
- Outcomes of the agency.

Therefore, the model focuses on the agency enacted by the study participants (directed at prioritising their dreams when confronted with challenges/constraints during their training), the role of reflexivity, support structures, the strategies they used, and the outcome of trainee medical specialists' agency (Fig. 3).

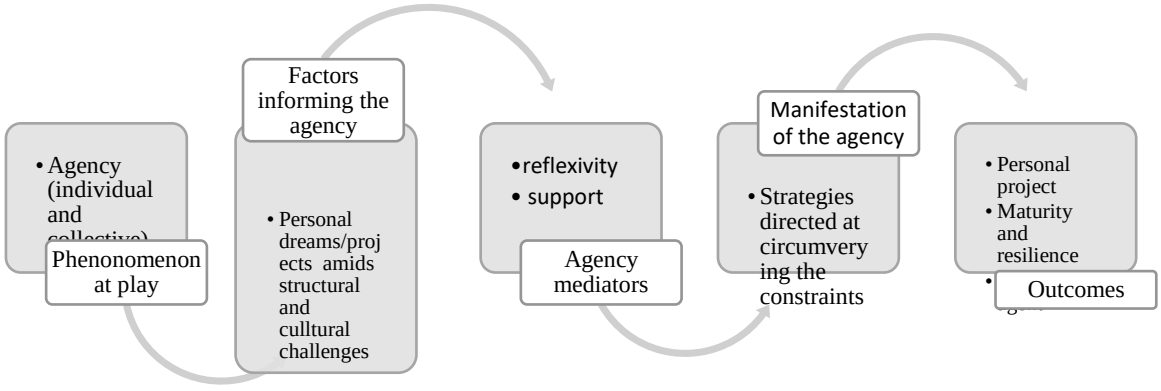

Figure 3: Initial model on participants lived experiences.

Given the complexity of T&L in higher education, as well as the interaction between individual agency and contextual factors, researchers have made efforts to develop theoretical models that aim to understand students' agency and their ability to navigate complex environments (Manning et al., 2014). These frameworks and models attempt to capture the various factors and processes that are involved and therefore, provide valuable insights into students' experiences.

5.4. Navigating medical specialist education through personal agency

5.4.1. The model

After revisiting the existing literature on agency and structures and gaining additional insight into the phenomenon, I decided to refine the initial model. The resulting final model (Fig 4) aims to explain how trainee medical specialists utilised agency to overcome challenges during their specialist training. It suggests that trainees in the study sites utilised their personal agency to navigate through a system of challenges that posed a threat to their personal goals and ambitions. This model, titled 'Navigating Specialty Training through Agency', employs the metaphor of navigation to depict the difficulties faced by participants throughout their journey, emphasizing the purposefulness, strategic, and goal-oriented nature of trainees' sense agency. Successful navigation requires accurately establishing one's position and the intended destination, meticulous planning, utilising appropriate tools, and adherence to the planned route. A similar picture was portrayed through the study participants' account of their lived experiences. The final model is presented in Figure 4 and is discussed in detail below.

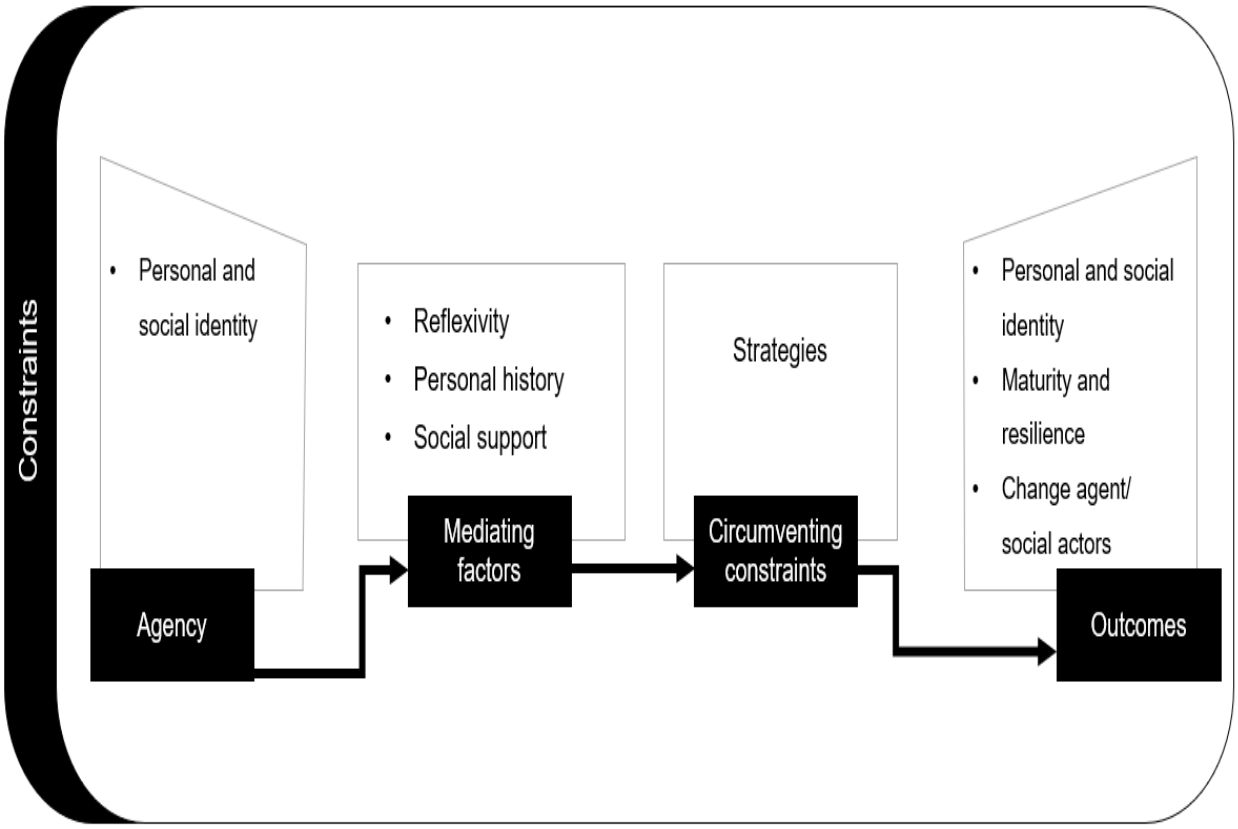

Figure 4: Navigating speciality training through personal agency.

This theoretical model describes the lived experiences of trainee medical specialists in four different medical specialty training areas (Obstetrics and Gynaecology, Paediatrics, or Surgery), the challenges they faced, strategies used to overcome them, factors that influenced their choice of strategies and outcome of their agentic outlook. According to the model, participating trainee medical specialists used agency to overcome challenges and limitations in their training environment. The model proposes five elements that explain trainees' educational experiences, representing the interaction between personal agency and the structural constraints within their learning environment. These elements are listed below and discussed in detail in the following sections:

- Structural constraints
- Agency
- Mediating factors

- Agentic strategies
- Outcomes

5.4.2. Structural constraints

Structural constraints refer to factors within the educational environments that impact of the personal projects of human agents and seek to constrain their personal dreams.

- Structure of the training program:

The training program lacked clear structure, syllabus/curriculum and training objectives/training outcomes as illustrated by the quotations below:

No, there is no structure, like there's no discussion in terms of the knowledge and skills you need to achieve during the different stages of your training. There is nothing like by this stage, you should be able to do a TAH (Total Abdominal Hysterectomy) on your own adequately with confidence. By this time, you should be able to do this. It is an assumption that is made by the department to say you have put are putting effort so you will have adequate mix of cases by the time you finish. There is no ongoing assessment. There's no ongoing examination. And in terms of the surgery, I think it's just based on you. (Participant 7: 47-year-old male, Obstetrics and Gynaecology)

What syllabus? There is no syllabus. That is the other thing that makes it difficult. There is a list of topics on the college website, broad and not focused. The list is not helpful. (Participant 12, 33-year-old, male, Surgery)

There was also no clear curriculum. My only source of information, the bits, and pieces I know, are because I'm close to people who are writing part two now. They too got the information on what to focus on from others who were writing. (Participant 11: 29-year-old female, Paediatrics)

The lack of clear training goals, curriculum and/ or syllabus suggests that the training was somehow disorganised, making it difficult for trainees to acquire professional knowledge and skills and develop professionally as medical specialists.

- Arrangement between the CMSA and universities

In addition to the above, trainee medical specialists had challenges with the arrangements between the CMSA and Universities. They felt that the CMSA should not be given the responsibility to conduct examinations on the basis that the institution was not involved in their training. They felt that the arrangement was unfair because summative assessment was made based on a limited encounters with trainees. This is demonstrated by the quotations below:

I think the arrangement where the college only examines but is not involved in training if very unfortunate because, in my opinion, if the examiner does not know what the trainer is doing, then the examiner will have an unfair expectation from the trainee. Training institutions have different approaches to training, with some not training at all, yet the examiner expect to have good outcome from the trainees. For me, this arrangement is unfortunate'. (Participant 2, 36-year-old female, Obstetrics and Gynaecology).

The college makes decision on a few days of exams. The examiners do not know us. They don't know how I work. They don't know how I operate. They only decide about me in fifteen minutes. So, I believe the Mmed (Master of Medicine) should be brought back so that people can have option of doing either the college or Mmed. The MMed is the fair way of assessing someone because the examiners have been with the person for many years. If you have been with the person for many years, you will know the person much better, their commitment, clinical skills, ethics, and everything combined. Unlike subjecting one to a college exam where individuals from, let's say, Durban, Cape Town, or Pretoria sit in a committee, assess you and then decide about your future on one encounter, yet you spent four or five years in training. It is totally unfair. They decide on whether you pass or fail based only on your exam performance irrespective of how you have been performing all along. (Participant 14, 46-year-old male, Surgery)

The Universities are the ones training, but your fate is decided over a few days by people who know nothing about how you have been doing during your training. I have seen this with my peers. They only have a couple of days to decide whether you can be a specialist or not.

In those days, you are asked questions on some topics and not everything, yet they make judgement based on those few questions as to whether you are good or not or whether you are ready to practice as a specialist or not. The university should be the one making that decision and not an examiner whom I have never met and who knows nothing about me. How can you assess someone you never taught? If the college wants to examine us, it must also get involved in our training. That's how I feel (Participant 15, 29-year-old male, Surgeon)

The perceived disconnect between the trainer (Universities) and the examiner (CMSA) suggested here could result in a misfit because of the left hand not being aware of what the right hand is doing (disconnect between training and exit examinations). The specialist certification is based purely on high stake exit examination at the end of the four-to-five-year clinical training period. Medical schools contribute by certifying satisfactory completion of training, fulfilment of logbook requirements and providing examiners for the national exit specialist exams. The logbook is used as an entry to the national specialist exit examinations.

- High clinical workload, staff shortages and long working hours

The constraining impact of the absence of organizational structure in training problems is exacerbated by heavy workload and staff shortages, resulting in trainees working long hours, insufficient study time, and physical and emotional exhaustion:

There is a huge problem. We have many patients but few doctors. Our clinics finish late, patients are always complaining. There is no time to rest. By the time you finish the clinic, you are so exhausted that you just go home and sleep. There is no time to study. When you are not working, you are too tired to even open a book. (Participant 22,32-year-old female, Medicine).

In terms of duty hours, you are forced to workdays on end without rest. There is no adherence to working hours, and if you complain, either it gets swept under the carpet, or you risk getting victimised. We just keep quiet and work just to get through the system. (Participant 18: 34 years old female, Surgery).

It is difficult to study or do research. We have calls in-between, we are working twenty-four hours, and tomorrow you're exhausted, the other day you are back at work, you know, so time goes by before you work on it. Starting again is a problem. Maybe if we had time off, it would help. (Participant 11:29- year-old female, Paediatrics).

- Departmental and institutional culture and practices

Furthermore, the trainee specialists must negotiate a departmental and institutional culture and practices (institutional in that these seem to occur in different departments within the same institution). These were in the form of lack of supervision, in training (formative) assessment and feedback, gender and racial discrimination, humiliation, and interpersonal conflicts among consultants (clinical teachers):

It was tough, but I think it's a culture more than anything. What I learnt is that it's a university culture. Our supervisors are simply doing what was done to them. They too were probably left alone and not supported when they were specialising. So, for them that's how things are done. (Participant 3, 32-year-old, female, Obstetrics and Gynaecology)

Well, there was no supervision at all if I may put it like that. Supervision, I will say when a consultant ever comes to theatre, they will not teach you; they will just operate to finish theatre list so that they can go to their private practices. And some of the consultants were still on the learning phase, which was difficult for us to also learn. In terms of the academic side, that was the side that was the poorest in my training. Hence, I keep on saying that I had to go outside and get help. (Participant 1,36-year-old male, Obstetrics and Gynaecology).

There isn't much support also there. You are just told, "Go and write your protocol. Give it to us, let's see. There's no frequent interaction to see how far, what articles you have, are they good enough to lay the foundation for you to write your protocol, and so on. So, you're basically on your own." (Participant 6, 34-year-old male, Obstetrics and Gynaecology)

You can see it. Some White and Indian consultants prefer to teach White registrars and Indians and not Black registrars. You feel like you are an intruder by their attitude. It is painful. (Participant 30: 32-year-old female, Paediatrics).

There are challenges with consultants' attitudes. During ward round, you find that they will try and humiliate you in front of your colleagues and medical students if you happen not to know something. Sometimes, it becomes more of a personal attack and name-calling. (Participant 10: 34-year-old male, Paediatrics).

There were lots of internal fights at that time in the department, and I thought I don't want to be in this environment. There was also much pressure financially from both, and I had my siblings to finish, so I decided to quit and had to go and do private practice. After some time, I decided to give it another try. I never understood what was going on. There was a lot of tension among the consultants including the HOD. Some were not talking to each other, and registrars were getting caught into the mess. I think it is just personalities. (Participant 7: 47-year-old male, Obstetrics, and gynaecology).

It is frustrating, especially when something goes wrong. They will blame you during the M&M meeting and call you names in front of other registrars. (Participant 21: 37-year-old male, Surgery).

While the structural constraints had negative effect on their educational endeavour, the effects were short lived as they managed to overcome them through agency (individual and collective). This agency is enacted to prioritise personal dreams. This point is illustrated by the quotes below.

It is physically exhausting, emotionally draining, and you have no time for 'yourself' (Participant 26: 34 years old male, Surgery).

It is a struggle to maintain the balance, and this becomes a problem when you have yourself only for the final exam then it becomes a problem. You never feel prepared. You do not know whether you have been doing enough to make you pass. (Participant 18: 34-year-old female, Surgery).

No, I do not feel adequately prepared for exams. And the reason why I say this, we do have some presentations and discussions but that other institutions have much more structured teaching programs, including exam preparation. They have exams, many exams, maybe every two months or maybe every month. These exams continuously build their knowledge and exam techniques. They learn how to approach questions and things like that. It's something

that is lacking with us, with the institution here (Participant 5: 51 years old, male Obstetrics and Gynaecology)

But I can't say every registrar that takes the exam and pass is ready for independent practice. The program does not prepare you for independent practice. I don't think so. I have passed the exam but do not feel I can go out there and practice on my own with what I have learned. I think for myself personally I am not ready to work without support. The program did not prepare me to practice independently except maybe surgical emergencies. (Participant 21: 37-year-old male, Surgery).

Thinking like giving up? That is an understatement. You feel overwhelmed and frustrated' (Participant 30: 32-year-old female, Paediatrics)

The above satisfy definition of structural and cultural constraints (Archer, 2003).

5.4.3. Agency

The agency represents the trainee medical specialists' capacity to make purposeful decisions in pursuit of personal goals or projects. Likewise, the trainee medical specialists in this study embarked on specialist training driven by personal and altruistic motives. They sought to fulfil their personal aspirations (self-actualization, personal identity), earn social recognition (social identity), address the scarcity of specialists, and contribute to resolving healthcare challenges in South Africa. This is exemplified by the following quotations:

I have always wanted to be a paediatrician. It has always been my dream to be a specialist and not stay as a GP for the rest of my life. Patients, colleagues, and community respects you when you become a specialist. Also, during my work as a medical officer, I came to realise that the mortality rate among children in South Africa and developing countries is very high. I also discovered that some of the reasons behind this high mortality are the lack of knowledge and skill in managing childhood illnesses and diseases. So, I thought I should come back to do paediatrics and, try and hopefully contribute towards reducing the alarmingly high mortality rate among children in this country. I am passionate about children's health'. (Participant 10: 34-year-old male, Paediatrics)

I suppose for me, specialising is fulfilling in a sense. While I was working as an intern in different disciplines, I started to understand what it means to be a medical practitioner. You must do calls, and you must be woken up at ungodly hours of the night. So, waking up for a kid, for a child, it's not problematic for me. If I get woken up at 01:00 because of a child that's sick, then I know the child is sick. The child, therefore, needs my help and knowing I can provide that help is fulfilling. (Participant 9, 31-year-old male, Paediatrics).

There is a shortage of paediatricians in the periphery. I joined the program because I want to be part of the solution (Participant 29: 31-year-old female, Paediatrics).

5.4.4. Mediating Factors

In this study, the term "mediating factors" pertains to variables that serve to elucidate the interaction between the structural constraints and the agency of trainee medical specialists. Three specific factors were identified, namely reflexivity, social support, and personal histories.

- Reflexivity

The agency was mediated by reflectivity, which included internal deliberation or self-talk (autonomous) and bouncing ideas with others (communicative). The trainees' agency also received social support from families, partners, peers, religion, and professional practitioners. They also drew strength from their personal histories (previous experience). The above suggests that the enaction of participants 'agency was socio-culturally located. The social environment presented participants with constraints and, at the same time, enabled them to exercise their agency by providing support structures. This is illustrated by the quotes below:

Yes. I sit down and think about the situation, looking for possible ways to overcome whatever problem is in front of me. Coming up with the right strategy is not always easy, but what I have learned is that you try one strategy, and if it does not work, you go back to the drawing board and think until you find the strategy that works. Sometimes, I also talk to other registrars about my plans to see if what I plan to do makes Participant 26: 34-year-old male, Surgery).

- Social support

Social support, including support from family, friends, spiritual leaders, and professionals, played a crucial role in mediating between the trainees' agency and the structural constraints they faced. This support was instrumental in helping them effectively navigate these constraints.

I talk to my family. I talk to colleagues. I go to church and have spoken to my pastor about it, and when I feel I am not copping, I seek professional support. They told me to be strong and focus on my career. I believe in prayer, and it does help a lot. (Participant 22: 32-year-old female, Medicine).

We have supportive families, but there is also a lot of comradeship among the registrars.' Participant 25: 30-year-old male, Surgery).

Knowing that there are people going through the same situation meant a lot. I was not alone. If they could hang on, so do I. The teamwork was special. Seniors were our biggest support, but we also formed study groups. It made life better. (Participant 21: 37-year-old male, Surgery).

- Personal history

The participants' prior experiences and personal histories played a crucial role in empowering their agency.

Yes. I have been fighting all my life, so I have learnt to be strong and focus on the prize even if it is tough' (Participant 24: 30-year-old, male, Medicine).

Thank you. It's part of life. As a black person, I have struggled all my life. We sort of get used to this kind of life. It is a struggle all the way, and we keep going.' (36-year-old male, Obstetrics and Gynaecology).

I have learnt that to succeed in life, you must know what you want, focus on the goal, and never allow anything to distract you.' Life is not easy; it will never be easy. My undergraduate years were not easy either, but I have learnt to survive. Medicine is survival of the fittest. I survive my undergraduate training. I survived my specialist training (Participant 23, 33-year-old female, Medicine).

5.4.5. *Strategies*

Trainee medical specialists use a combination of strategies to overcome the constraints in the educational environments. These included online resources (YouTube, journals, internet), library or print resources (e.g., books), networking with peers from other institutions, establishing study groups to support one another, seeking external help (attending teaching on courses in other universities), practices using past question papers and attended seminars organised by Societies of Trainee Medical specialist in their respective disciplines:

I asked my colleagues for advice. They gave me a list of textbooks to read from. They also advised me to look at past question papers, online PowerPoint lectures, YouTube, etc. Because they cover a lot of topics and internet, that is exactly what I did. (Participant 15: 29-year-old male, Surgery)

Of course. I also forgot to say that I attended part 1 course organised by another university… should I mention the name? (Participant 25, 30 -year-old male, Surgery)

Yes. I also worked through past question papers with a friend. Question past question papers. (Participant 25: 30-year-old male, Surgery)

One more thing that helped me was the Society of Trainees in Surgery. I came across information that they were holding pre-exam meetings for registrar and decided to join them. The first meeting was in Durban, so I paid and went to Durban. There were two sessions, one for people who were writing intermediate and another session for people who are writing finals, for two or three days, I think. It also opens my eyes as to what you must read; otherwise, I wouldn't have known what to read. (Participant 12: 33-year-old male, Surgery)

5.4.6. Outcomes of agency

The final part of the model depicts the outcomes of the trainee medical specialist agency. The outcomes can be grouped into three main categories:

- Personal and social identity

Qualifying as a specialist bestowed upon the trainees a sense of personal and social identity. The personal identity arose from the fulfilment of one's aspirations, while being a specialist

granted them social prestige and value by delivering highly sought-after specialized services in their respective communities.

I have always dreamt of being a specialist and be counted in my community. (51-year-old male, Obstetrics and Gynaecology

- Maturity and resilience

Trainee medical specialists emerged from the program with increased maturity and resilience after adeptly navigating the structural constraints within the training programs.

I came out of the training with my degree but also more matured and stronger. (Participant 23:33-year-old female, Internal Medicine)

The one thing that the program taught me is that you must believe in yourself, confident in your abilities to manage yourself. You learnt to work independently. You must be able to manage emergencies and difficult situations because we do see a lot of very complex patients, and you get exposed to a very wide range of problems. I had a motto the last two years: just keep going, you can do this. I have become stronger.' (Participant 19: Obstetrics and Gynaecology).

I used to worry a lot about these things until I told myself: You need to find a way to make it work. I needed to find a way to make sure I achieve my dream, irrespective of the situation. Indeed, here I am today, grown up and strong! I think I will be able to handle anything in life after this experience (Participant 30: 32-year-old female, paediatrics).

- Change agents/Social Actors

One of the significant results arising from the trainees' successful completion of their specialized training was the development of a strong desire and commitment to assist future trainees and address certain structural limitations they encountered. This is illustrated by the quotations below:

My plan is to stay in academia so that I can support registrars and hopefully make the training less painful for them.' (Participant 24: 30-year-old male, Medicine).

Yes. I do not want other registrars to feel the same way I felt, so I try to support them. I do post-intake rounds; I do teachings and organise tutorials for them at times that suit them". (Participant 3: 32-year-old female, Obstetrics and Gynaecology).

5.5. Conclusion

In this chapter, I have elaborated on the process involved in constructing the theoretical model and analysing its various components that elucidate the experiences of the trainees. The model offers a comprehensive understanding of the key factors that synergistically contribute to the formation of the trainees' experiences. These factors can be leveraged to facilitate targeted interventions.

CHAPTER 6: DISCUSSION

6.1. Introduction

The aim of this constructivist grounded theory research was to investigate the lived experiences of trainee medical specialists in the South African specialist certification framework, which was established in 2011. The research focused on identifying the challenges faced by trainees, their strategies for navigating these challenges, and the factors that influenced their responses to the challenges they were facing. The findings of this study were used to develop a theoretical model to explain these experiences. This chapter will present the key findings of the study in the context of existing body of literature on the subject and conclude with a summary. The study sought to answer the following research questions:

- Q1: How do trainee medical specialists in Medicine, Obstetrics and Gynaecology, and Paediatrics undergoing specialist training in medical schools in Gauteng Province, South Africa, describe their lived experiences of specialist training?
- Q2: What challenges do the trainees encounter during their training?
- Q3: How do the trainee medical specialists respond to these challenges?
- Q4: What informs their responses and choice of strategies?
- Q5: How can the trainees' lived experiences be understood and conceptualised using models?
- Q6. How can the information be used to inform educational policy and practice?

The study focused on the following objectives:

- Objective 1: Conduct semi-structured interviews to gather in-depth and comprehensive data on the lived experiences of trainee medical specialists.
- Objective 2: Employ semi-structured interviews to explore the challenges encountered by trainee medical specialists, the nature of these challenges, and their impact on educational experiences.

- Objective 3: Utilize semi-structured interviews and the constant comparison analysis to collect information on how trainee medical specialists adapted and responded to the challenges they faced.
- Objective 4: Utilize semi-structured interviews, constant comparison analysis, and memo writing to investigate individual factors (e.g. past experiences) and other influences (e.g. social support) that shaped the responses of trainee medical specialists to these challenges.
- Objective 5: Investigate the strategies employed by trainee medical specialists to overcome the challenges encountered using semi-structured interviews.
- Objective 6: Analyse patterns and develop a model to explain the experiences of trainee medical specialists through semi-structured interviews, constant comparative analysis, and memo writing.
- Objective 7: Share the study results with the HPCSA, the Department of Health, CMSA, SACOMB, and Universities to contribute to the ongoing medical specialist training programs reform and for review of institutional practices.

For the ease of discussion, the discussion will centre around the objectives.

6.2. Objectives 1 and 2: Trainee medical specialists' experiences and the challenges they encountered.

This study is in response to calls for research that utilises structure(context) and agency perspective and different research methodologies to conceptualise teaching and learning in higher education (Ashwin 2008; Case, 2015; Ertl and Wright, 2008; Haggins, 2003; Hodkinson et al., 2007; Mandal, 2018; Stenalt and Lassesen, 2021; Varpio et al., 2017). This type of research is expected to enhance the current understanding of teaching and learning in this field by expanding existing theoretical models and frameworks (Ashwin, 2008, 2009).

The study proposes that trainee medical specialists, who participated in this study were facing structural constraints during their training and that they employed agency to navigate the constraints. The challenges experienced by the study participants is in keeping with the

definition of structural constraints (Archer 2003). A structure refers to any element in the environment that possesses the capability to either enable or constrain the actions of an individual or group of individuals (Archer, 2003). The structural constraints include access to opportunities, resources, and support. Structures are further subdivided into structures and culture. Structure according to Archer's (1996, 2003) conceptualisation refers to material possessions such as physical spaces and resources, while culture pertains to the social attributes of individuals (such as gender, ethnicity, and social class) as well as their cultural practices and beliefs. Structures only become constraints when individuals perceive them as obstacles preventing them from achieving their personal goals or personal aspirations (Archer, 1996,2003).

In this research project, the participants assessed and identified specific issues related to educational environments and the structure and organization of training programs as obstacles that threatened the achievement of their personal dreams or projects. These obstacles/barriers included lack of structure of the training programs, absence of a clear syllabus/curriculum, undefined training objectives, a high workload, staff shortages, long working hours, and consequently, insufficient time for study and time to conduct research. The participants also expressed concerns about the arrangement between HPCSA, Universities, and CMSA. They perceived the HPCSA as failing to fulfil its mandate of regulating and overseeing specialist training programs. The main concerns regarding the arrangement between CMSA, HPCSA, and Universities cantered around the exclusive rights given to CMSA to conduct examinations without involvement in the training process. Additionally, decisions about a candidate's competency to become a medical specialist according to them, were solely based on CMSA summative national specialist exit examinations, without considering their performance during the four to five years of clinical training conducted by universities/medical schools.

The dysfunctionality of the HPCSA has been well documented in a Ministerial Task Team report that was led by Professor Mayosi (2015). The other challenges reported above have been reported by other local, regional, and international studies. Studies conducted among trainee medical specialists in Nigeria by Esan et al. (2014), Nwachuku (2019), and Yusufu et al. (2010)

reported that trainees medical specialists in Nigeria were confronted with challenges , among them, lack of orientation upon joining the training program, unclear educational goals, lack of standardized curriculum, insufficient protected academic time, limited research support, unstructured training programs, and issues with understaffing and high workload. These are the same issues that came out of this research.

Other studies from Sudan (Baldo et al., 2020), Ethiopia (Fiseha et al., 2021), South Africa (Peer and Fegan, 2012; Patel et al., 2016; Patel et al., 2018), and in a scoping review focusing on PGME in sub-Saharan Africa covering a period of 26 years (Talib et al., 2019) reported similar challenges. Similar challenges were also identified by studies conducted in developed countries (Di Somma et al., 2014; General Medical Council, 2016), suggesting a global phenomenon. The negative impact of these challenges on the quality of supervision and trainees' learning experiences have also been reported (General Medical Council, 2016; Kilty et al., 2017; Menin, 2021; Nwachuku, 2019). The challenges of managing a high patient load and dealing with understaffing, as highlighted in this study, are not exclusive to the research settings, but have also been reported in other studies (Baldo et al., 2020; Cameron, 2006; Di Somma et al., 2015; Fiseha et al., 2021; Talib et al., 2019). The adverse effects of insufficient staffing and overcrowding on the quality of care and supervision of trainees were also documented in the Annual National Trainee Survey Report of the United Kingdom in 2016 (General Medical Council, 2016). The above suggest that the challenges reported in this study are not unique, but global in nature. Therefore, the findings derived from this study may have significant implications for other contexts.

The importance of supervision and support, in-training assessment and, feedback in workplace-based learning (WBL) was emphasized in a realist synthesis of the literature on PGME by Wiese et al (2018). Furthermore, the research identified supervision and academic support to have impact on trainee medical specialists' acquisition of professional knowledge, attitude, and skills as well as their performance in board-certifying examinations (Atsawarungruangkit, 2015; Welch et al., 2017, Wiese et al., 2018). Therefore supervision, continuous in training

assessment, and feedback are crucial components of competency-based medical education (CBME) training models that are increasingly being adopted for PGME globally (Holmboe, 2021).

The reported perceptiopms of racism reported in this study is also not unique to the study settings. Racism in South Africa can be traced back to the apartheid era. Unfortunately, the country is still battling to put this social monster at bay. This study suggests that racism is not limited to interactions between Black and White individuals. Our study participants reported that they also experienced acts of racism from consultants of Asian (Indian) descent. This finding is disturbing, as it may indicate the emergence of a new form of racial tension (Black-Indian), which, though not extensively covered in academic literature, has already gained attention in the country's public media (Shongwe, 2021). If left unattended, the Black-Indian racial tension has the potential to exacerbate existing racial challenges in higher education in South Africa (Baloyi, 2018; Pirtle, 2022) and to further divide the country's historically Black populations (Indian, African Black and Coloured).

The gender, racial discrimination, humiliation, and abuse reported in this study, have also been documented in the global medical education literature (Menon, 2018; Ngumeni Tiako and South, 2022; Osseo-Asare et al., 2018; Quine,2002; Ross et al., 2017; Wood, 2006). Gender, race, and social status are well-known factors that influence individuals' access to learning opportunities and support in the workplace (Billet, 2001; 2006; Hull, 1997; Tam, 1997). Similarly, Black trainee medical specialists that took part in this study, reported receiving limited or no educational support from White and Indian consultants and attributed this to racism. The persistence of gender and racial discrimination in South Africa, as evidenced in Soudien's (2009) report and other academic research (Coovadia et al., 2009; Digby, 2013; Tobias, 1983), underscores the long-lasting impact of apartheid. This finding is indeed disheartening considering the country's continuous endeavours to foster social transformation, enhance social services, and reform higher education institutions. A survey conducted among trainee medical specialists at the University of Cape Town by London et al. (2009), found a high prevalence of perceptions of racism among Black trainees. Similar findings were reported by Thackwell et al. (2016, 2017. Although both studies were conducted among trainee medical

specialists in the Western Cape, the findings are in keeping with our findings. We hypothesise that this problem is not confined to the two provinces only.

The study participants reported that male consultants, regardless of their race, were the primary perpetrators of gender discrimination. This is in contrasts to a study conducted among female trainee surgical specialists at the University of KwaZulu-Natal (KZN), where male trainee surgical specialists and male patients were the main perpetrators (Umoetok, 2017). Given the study setting, the above could be due to patriarchal beliefs among male trainee surgical specialists and patients, a culture that is still dominant within the South African society, including the province of Kwazulu-Natal (Moodly, 2021). It is however not clear whether this is due to cultural beliefs since the province is predominantly rural and influenced by Zulu tradition (Isike and Uzodike, 2011). Regardless of the cause and the perpetrators, racial discrimination in unacceptable in the democratic South Africa and needs to be uprooted.

The experience of humiliation reported by the study participants, has been corroborated by other studies (Ayyala et al., 2019; Samsudin et al., 2021). The sole purpose of humiliation is to discredit and instil fear in the victim, making them to feel helpless. Academic bullying has negative impact on the victim's emotional wellness, self-esteem, academic performance and patient's clinical outcomes (Averbuch et al., 2021; Rodwell & Demir, 2012). A nationwide survey conducted among psychiatric trainee medical specialists in South Africa have revealed a significant prevalence of perceptions of bullying and harassment among the trainees (Beath et al., 2021).

The challenges and constraints described in this study resulted in physical and emotional exhaustion to an extent that some of the study participants contemplated leaving the training programs altogether. A study conducted in a South African healthcare setting found a high prevalence of burnout (84%) among participating trainee medical specialists (Zeijlemaker & Moosa, 2019). Factors contributing to the high levels of stress among trainee medical specialists include heavy workloads, institutional hierarchies, pressure from senior clinicians, specific specialties like Obstetrics and Gynaecology, and individual personality factors (Jan and Jan

2015; Nimer et al., 2021). While most of these factors cited above are also relevant in this study, this study did not identify any personality-related factors.

Our study participants reported feeling ill-prepared for the national medical specialist exit examination and independent practice because of the challenges / constraints they encountered. This differs from studies conducted in Canada and the USA (Chen et al., 2021; Sanaee and Sobel, 2017). The differences between this study and those conducted in the Global North may be due to the differences in medical specialist training models. South Africa primarily employs an apprenticeship model for medical specialist training, whereas most specialist training programmes in the Global North countries follow a competency-Based Medical Education (CBME) model (Holmboe,2010; 2021). Compared to CBME, the apprenticeship model is less structured. In settings where there is a high demand for clinical services and limited resources, the emphasis may lean more toward patient care, potentially compromising the educational component (Rassie, 2017).

Two South African studies, one in surgery and the other in orthopaedics, have shed some light on the impact of the structural and institutional factors on trainee medical specialists' educational experiences. Both the studies focused on the performance of trainee medical specialists in the country's national specialist exit exams. The first study, a ten-year audit conducted by the College of Surgeons, a constituent college of the Colleges of Medicine of South Africa (CMSA), reported an overall exam pass rate of 63%, with lower scores of 55% and 50% in the written and oral examinations, respectively (Kahn et al., 2019). One specialist exit exam in the Surgery in 2019 had particularly poor outcomes, leading to public outcry (Child, 2019). Similarly, the College of Orthopaedic Surgeons' study found an average overall pass rate of just over 60% over a 12-year period, with a significant decrease in the pass rate for candidates retaking the examination, especially in the written component alone (Swanepoel et al., 2018).

While some may consider a pass rate of 60% to be acceptable, it is concerning that average marks of 55% and 50% were achieved in the written and clinical examinations, respectively.

These results indicate potential deficiencies in candidates' clinical knowledge, skills, the quality of their training, or the difficulty level of the exam. The president of the CMSA was quoted in the media stating that the 2019 National Surgical Exit examination, which most candidates failed, was not difficult (Child, 2019). This statement indirectly suggests that the poor performance was attributable to the weaknesses of the candidates. This study implies that the CMSA President's assessment may be accurate, as it appears that the issues lie within the training programs rather than the examination process.

However, it is important to exercise caution when attributing the poor performance solely to the shortcomings of the candidates. Placing blame solely on the candidates for the high failure rate would reflect an individualistic perspective that places excessive emphasis on personal agency, thereby perpetuating a perspective that views trainees as deficient. This viewpoint exclusively attributes any failures to the learners' shortcomings, while absolving the educational program and context of any responsibility (Kundu, 2017). Furthermore, an examination of the national pass rates for specialist examinations in Nigeria also reveals low pass rates across all specialties (Ajah et al., 2018), underscoring the challenges faced by training programs in different educational settings.

In the South African setting, the challenges in HE and PGME originate from variety of factors, amongst them, the enduring legacy of apartheid, successive failures of the ANC-led government and failures of South Africa' socio-political reforms. These failures are due to the lack of policy implementation, poor fiscal policy choices, diversion of resources from academic hospitals to support primary healthcare services, inadequate implementation and management of the Occupational Specific Dispensation (OSD) and Remuneration of Work Outside Public Service (RWOPS), weak management and leadership, and widespread corruption in the public sector (Bateman, 2012, 2013; Dhai and Mahomed, 2018; Don-Wauchope et al., 2010; Ncayiyana, 1999, 2000; Pillay, 2004; Shipalana, 2019). Some of these factors are believed to have contributed to a decline in the country's research output, deterioration in the quality of public healthcare services and academic hospitals and, a decrease in the quality of supervision given to junior doctors and medical students since the transition to democracy (Assaf, 2015;

Bateman, 2012; Cherry, 2012; Don-Waucuope et al., 2010; Ncayiyana, 1999; Kent and de Villiers, 2007; Maphumulo and Bengu, 2019; Mayosi et al., 2012; Ncayiyana, 1999; Treatment Action Group, 2018; Van Staden, 2021).

6.3. Objective 3: Trainees' response

While the constraints initially posed challenges for the trainees, resulting in physical and mental exhaustion and a desire to quit, they did not yield to these difficulties. Rather, they displayed a strong sense of personal agency, both as individuals and as a group. Their agency focused on overcoming the constraints they encountered in pursuit of personal dreams. The behaviour exhibited by the participants in this study aligns with the concept of agency.

The concept of agency is subject to varying interpretations depending on individuals' underlying worldview or philosophical orientation. O'Meara et al. (2011) define agency as the ability of an individual to adopt an agentic perspective and take strategic actions to achieve personal goals. However, Archer (2003), views agency as a person's capacity to engage in purposeful actions to advance their own concerns or projects. Klemencic (2015, 2017, 2020, 2022) views the agency as an individual's ability to navigate educational environments and influence educational outcomes. Bandura (2001) defines agency as the capacity to influence one's thoughts, while according to Kundu (2017), it is an individual's ability to overcome obstacles and create positive change utilising available resources. In this study, participants demonstrated a convergence of the above perspectives in their approach. They adopted an agentic mindset when faced with the constraints within the specialist training environments, enabling them to effectively overcome these constraints and pursue their personal dreams. It is widely recognized that individuals evaluate their personal dreams and undertakings based on what they consider to be objective structural reality as they deliberate and choose strategies that they perceive will facilitate the attainment of their personal goals (Archer, 2003; Bandura, 2006; Biesta, 2008).

The actions of individuals and their agency stem from personal concerns related to nature, practice, and society (Archer, 2003). In this study, the participants' concerns revolved around becoming medical specialists to fulfil their dreams (personal identity), earn society's respect

(social identity), and contribute to solving society's healthcare challenges through the expertise acquired during specialist training. The study participants displayed a high level of motivation, aligning with Archer's (2003) conceptualization of human concerns and motivational theories, as well as the principles of the African philosophy of Ubuntu, which recognises self-fulfilment and self-actualization (Maslow, 1943, 1999, 2019), as well as the pursuit of the greater good (Masehela, 2016), as key drivers of human actions. These findings further support the socio-cultural view that agency is comprised of individual and societal components, including requiring social support for its expression (Biesta, 2008; Kundu, 2017; Kundu and Noguera, 2020; O'Meara et al., 2011). Similar messages are seen in this study.

Student agency is one of the focal points of the Organisation for Economic Cooperation and Development (OECD) Learning Framework 2030 (OECD, 2018). The OECD (2018) asserts that learners require agency and supportive environments to navigate complex educational settings and achieve success in their personal pursuits. Human agents are characterized by attributes that include, intentionality, forethought, self-regulation, and self-efficacy (Bandura, 2001; 2006). Intentionality refers to purposeful action, while forethought implies that agents assess their actions against perceived challenges and potential outcomes, choosing actions that are likely to yield favourable results (Code, 2020). Agents establish goals and monitor their strategies, adjusting them when required (Bandura, 2001; Code, 2020). Similarly, the medical trainees in this study demonstrated intentionality in their actions and maintained an unwavering confidence in their capacity to effectively overcome the challenges they encountered during their specialist training. They critically assessed their circumstances, formulated strategies they believed would contribute towards their success, and diligently reassessed and adjusted these strategies when required. This is in keeping with Bandura’s (2001) concept of self-regulation.

Bandura (2001) classifies agency into three categories: individual/personal agency, proxy agency, and collective/corporate agency. Individual agency refers to an individual's ability to undertake personal projects without external assistance. However, Bandura (1997) challenges the notion that agency is solely an individual attribute. He argues that human action is

inherently interdependent and social, rather than isolated. Similarly, the participants in this study demonstrated both personal and collective agency, prioritising their personal dreams. The collective efforts of the study participants played a crucial role in supporting the agency of individuals. This study suggests that individual and collective agency are interconnected (Badura, 1997; 2001, 2006) and that agency thrives when there is social support (Kundu, 2017). These findings align with the socio-cultural perspective of agency (Biesta, 2008; O'Meara et al., 2011; Wertsch et al., 1996), Kundu's (2017) concept of agency, and the African principles of ubuntu (Masehela, 2016). A study by Watling et al. (2021) also emphasised the importance of social environment in supporting personal agency.

6.4. Objective 4: Factors that influence trainees' medical specialists' responses to the challenges.

According to Archer (2003), the interaction between structure and agency is mediated by reflexivity. In this study, the agency of trainees was mediated by various factors, including reflexivity (both autonomous and communicative), personal histories, and social support. Reflexivity implies that individuals actively engage in reflecting upon and analysing the situations they encounter, considering their personal dreams, engaging in internal deliberation, culminating in the selection of the best course of action they believe will yield the desired outcomes (Archer, 2007, 2013). Therefore, reflexivity helps individuals to assess the situations they are confronted with in life, their personal circumstances and personal dreams, and the different options that are available to them, weighing them against the potential outcomes before making a decision (Archer 2003). A similar process was observed in this study, providing support for Archer's argument regarding the mediating role of reflexivity in guiding human action and thought (Archer, 2003).

Archer (2003, 2007, 2013) described four modes of reflexivity: autonomous, communicative, meta, and fractured reflexivity. Autonomous reflectivity, also known as self-talk, involves internal deliberation and decision-making about the situation without seeking external confirmation. Communicative reflectivity, on the other hand, requires external validation of

one's internal deliberations and thoughts before an action is taken (Archer, 2013). Meta-reflexive individuals critically evaluate their thoughts and intentions, which is important for self-monitoring but does not necessarily lead to purposeful action (Archer, 2003, 2007; Golob and Makarovič, 2019). Fragmented reflectivity is characterized by confusion and a lack of clarity on how to approach challenges, manifesting as distress and paralysis (Archer, 2007; Golob and Makarovič, 2019).

The participating trainee medical specialists in this study employed both autonomous and communicative reflexivity to evaluate their situations and to weigh potential actions. These two modes of reflexivity complemented each other. Additionally, communicative reflexivity served as a source of motivation and encouragement to the individual actors, and trainees received support and encouragement from peers, family members, religious leaders, and mental healthcare professionals through communicating with them about the challenges they were facing. The study did not identify any other forms of reflexivity among the participants.

Additionally, personal history, specifically past experiences, played a significant role in mediating the l agency of the study participants. Some of the participants perceived gender and racial discrimination as a continuation of the historical racial oppression and patriarchy that were dominant during the apartheid era, both of which successfully navigated by the study participants. Others drew strength from their undergraduate experiences, which helped them develop resilience. Emirbayer and Mische (1998) suggest that individuals utilise their past experiences to evaluate their current realities and to determine the best course of action when faced with new challenges. This notion is substantiated by Evans (2002), who argues that human agency is shaped by previous experiences, current circumstances, and future outlooks. Several participants in the study emphasised that experiences such as racial and gender discrimination and humiliation were not new occurrences, but rather challenges they had previously endured and survived. They perceived these challenges as intrinsic aspects of the Black experience that Black people must be overcome. Based on the above, a conclusion can be made that, an individual’s experience is also an important mediator of personal agency. Having

successfully navigated similar challenges before, gives the individual courage to tackle new challenges in future.

This study identified social support as the third and final mediator of agency. This finding aligns with the socio-cultural perspective of human agency (Biesta, 2008; Kundu, 2017; Emirbayer and Mische, 1998; O'Meara et al., 2011) and the principles of Ubuntu (Masehela, 2016). It is widely acknowledged that human beings do not exist in isolation, and that human action is fundamentally shaped by social interactions. In this context, social support assumes an important role as an enabler and supporter of (Biesta, 2008; Kundu, 2017; O'Meara et al., 2011). Although it may have been implied, the role of social support as a significant mediator of personal agency has not been explicitly reported in other studies.

6.5. Objective 5: Strategies used by trainee medical specialists.

Due to their agency, trainees developed strategies that enabled them to overcome the constraints and achieve or to remained on course towards achieving their personal dreams. Their strategies commenced by setting clear goals and adjusting them as needed. They used textbooks and online resources to study and worked from previous past question papers. They also formed study groups to support each other and to share knowledge and resources. They networked with trainees from theirs and other institutions, exchanged information and learning materials, sought assistance from specialists outside their home institutions and attended seminars organised by national societies of specialist in training in their respective field. Trainee medical specialists in this study demonstrated self-directedness by effectively identifying the resources required to succeed in their academic pursuits, including seeking external support when necessary. Similar results have been reported in other studies (Folb et al., 2011; Sawatsky et al., 2017; Wynter et al., 2019). Online resources play a vital role in facilitating self-directed learning by providing a flexible and adaptable learning environment (McCartan et al., 2011).

6.6. Objectives 6: Develop a theoretical model that explain the trainee medical specialists' experiences Outcomes of agency.

This provides a conceptualisation of the interplay between structure and agency from PGME environments (Fig 4, page 124). The study explores the journey of trainee medical specialists as they pursue specialisation in pursuit of personal goals, social recognition, and the desire to improve the health and wellbeing of society. Therefore, the agency of the study participants was motivated by self and social identity, as well as altruistic reasons. However, they encountered various factors within the training environment, such as the structure of the training programs institutional culture and practices. These factors sought to constrain their actions and threatened the realisation of their personal dreams. These challenges were identified as obstacles that needed to be overcome to achieve their aspirations.

To navigate these obstacles, the participants engaged in internal deliberation, both autonomously and communicative. They also drew strength from their personal histories and sought social support to remain focused and confront the challenges that were before them. Through these efforts, they developed strategies that helped them to successfully navigate the constraints, enabling them to realize their dreams. Not only did they emerge from this experience having achieved their personal goals, but they also became more mature, resilient, and committed to supporting others (change agents/social actors) in overcoming similar constraints.

There is an ongoing debate surrounding the relative influence of structural factors (context) and human agency in determining human behaviour, with researchers holding opposing positions on this matter (Archer, 2003; Bandura, 2001; Biesta, 2008; Bourdieu, 1977; Duckworth, 2016; Giddens, 1984; Kundu, 2017; O'Meara et al., 2011; Wertsch et al., 1996). This debate can be categorized into three main perspectives: structuralism or determinism, individualism, and a middle ground. Structuralists believe that structures have primary power over agency, which means that human agents are subject to the powerful forces of social structures (Durkeim 1933, 1938,1956; Durkheim and Lukes, 1982). If applied to this study, one would have expected

the trainee medical specialists to have been limited by the constraints. However, this was not the case. Instead, the study participants were able to overcome the structural limitations in their pursuit of their personal dreams. This suggests that individuals have the capacity to overcome the constraints imposed upon them by social structures through agency.

The second perspective, also known as individualism, assigns deterministic power to human agency over structures (Bandura, 2001; Mayhew, 1980, 1981). The findings of are in agreement with this perspectivism but disagrees with the notion that human agents have obsolete control over structural forces. The study identifies reflexivity, personal history and social support as the key and important mediating factors that enabling the expression of human agency. The study acknowledges the constraining effects of social structure, the role played by human agency but identifies reflexivity, personal history and social support as critical mediators of personal agency. Therefore, this study does not support the individualistic/agency-centric view of human agency in its pure form.

The third position aims to integrate structure and agency. Three perspectives that deserve attention are those of Giddens (1984), Bourdieu, and Archer (2003). Giddens (1984) argued that structure and agency should not be treated as separate entities. He introduced the concept of duality, suggesting that the two were interconnected. While this theory is valuable, the notion of interconnectedness and inseparability makes it difficult to apply the concept in real life. Giddens believed that neither agency nor structure alone was sufficient to explain social actions (Giddens, 1984). This is because of the bi-directional and interdependence relationship between them. Social actions occur within a social context and social contexts are also shaped by individual actions (Akram, 2012; Giddens, 1984).

Bourdieu (1977) also endeavoured to reconcile these two perspectives. He argued that individuals possess autonomy, but this autonomy is predominantly directed towards the perpetuation of social structures (Adams, 2006; Bourdieu, 1977; 1986; 1990). He identified habitus and various forms of capital (social, economic) as pivotal factors influencing human agency. This study aligns with the concept that social capital plays a mediating role between

structure and agency but differs in the argument that human agents exist to reproduce the existing structure. Instead, this study proposes that human agents strive to modify the structures to better align with their personal needs and dreams.

Archer (1996, 2000, 2003) agree to some extent with Giddens' (1984) conceptualisation regarding the relationship between structure and agency. However, unlike Giddens, she views structure and agency as analytically separate. She argues that reflexivity mediates the relationship between structure and agency and distinguishes between different types of reflexivity and their potential outcomes. The findings of this study, align with Archer's (2003) concept regarding the interaction between structure and agency. While Archer acknowledges the importance of personal histories in her theorisation of this interaction, I believe she does not sufficiently emphasize the crucial role that personal history plays in mediating human agency. This is one of the arguments I would like to advance. Additionally, she does not include social support as an important mediator of human agency, a view held by Bourdieu (1977) and Kundu (2017) and which this study also suggests.

The concepts of the interaction between structures and agency, as advanced by this study, have been previously reported but not sufficiently advanced by other researchers. In addition, other studies have also underscored the importance of agency in navigating constraints. For instance, a study conducted by Ogude et al. (2019) among former Bachelor of Science (BSc) and Bachelor of Commerce (BCom) Extended Curriculum Programs (ECPs) students at the University of Pretoria, utilising appreciative inquiry, reported that when confronted with constraints, students employ personal agency to surmount the impact of these constraints on their aspirations. The findings of this study align with the broader research on the subject. The students in this study also found support and mentorship in peer groups, which served as social and cultural capital (Bourdieu, 1990) or 'sustaining ecologies' as described by Haffejee and Theron (2019). These networks fostered a sense of belonging and provided both academic and social support, enabling the students to navigate and conquer the challenges they encountered.

Mogashana et al. (2022), drawing on Archer's (2003) Social Realist Theory, investigated the experiences of twelve Black students enrolled in an engineering degree program under an Academic Development Program (ADP) at the University of Cape Town (UCT). These students also encountered challenges which included the structure of the academic program and racial discrimination. They responded to these challenges by demonstrating individual and collective agency. In this study, personal background, and various forms of support - social, spiritual, and professional - played a significant role in facilitating the students' expression of agency.

Haffejee and Theron's (2019) employed the emancipatory-critical research paradigm to investigate how sexually abused adolescent African girls utilised agency and developed resilience. This study found social support to be a crucial factor in fostering the girls' sense of personal agency and their development of resilience, enabling them to overcome their negative experiences. Other studies have also shown that personal background (Archer, 2003; Evans, 2002), religious beliefs (Javanmard, 2013), and access to psychological counselling (Kurete, 2020) are important contributors of resilience. The evidence suggests that social, spiritual, and professional support are key facilitators of personal agency. These findings align with the perspectives of Bandura (1997), Kundu (2017), and Watling et al. (2021), who argued that the socio-cultural environment plays a role in supporting personal agency. This study also echoes Evans' (2007) assertion that while agency is influenced by context, it is not solely determined by it. Reflexivity, personal history and social support plays an important role in mediating the interaction of structure and agency.

The structure-agency relationship has been examined through various research perspectives and methodologies, including social realism (Archer, 2003), phenomenology (Moustakas, 2013), ethnography (Torren, 1996), and GTM (Strauss et al., 1963). Phenomenology focuses on the individual, while ethnography focuses on the collective. This study employed GTM in response to Klemencic (2022) and other researchers' recommendations to utilise different research methodologies to explore the agency-structure relationship (Varpio et al., 2017). One of the advantages of GTM is the fact that the study's findings are based on empirical data (Charmaz,

2014). Hildenbrand (2007) argues that GTM has consistently emphasized the interaction between structure and agency. The coding matrix developed by Strauss and Corbin (2015) is another example of how GTM has been used to explore the interplay between structure and agency, employing conditions, interactions, and consequences.

Slider (2015) used GTM to investigate how working adults navigated advanced degrees, while McCall et al. (2020) employed the methodology to explore how civil engineering students with disabilities in the United States navigated lack of support and socio-cultural expectations to develop their engineering identities. Watling et al. (2021) utilized constructivist grounded theory to investigate the concept of a student, the meaning attached to it, and how individuals exercise agency in medical education. I am not aware of a similar study explored the experiences of trainee medical specialists in limited resource settings undergoing socio-political, health, and education reforms using GTM. This study is a response to the call for research that employs agency and structure and different research methodologies to understand teaching and learning in higher education ((Ashwin, 2008, 2009; Case, 2015; Ertl and Wright, 2008; Haggins, 2003; Hodkinson et al., 2007; Mandal, 2018; Stenalt and Lassesen, 2021; Varpio et al., 2017). Its unique focus on PGME and limited resource setting undergoing socio-political and education reforms distinguish it from other studies.

6.7 Conclusion

In this chapter, the findings of the study in relation to the existing body of literature were presented. The recommendations will be discussed in the next section hence was not included in this chapter.

CHAPTER 7: CONTRIBUTIONS, LIMITATIONS, STRENGTHS, AND FUTURE RESEARCH DIRECTION

7.1. Introduction

The study's main findings were presented and discussed in the previous chapter. This chapter aims to highlight the thesis' contributions to knowledge, reflect on how the study could have been conducted differently, discuss the study's limitations, and conclude with recommendations in Chapter 8.

7.2. Contributions

This thesis addresses three of the research gaps identified by Miles(2017): (1) knowledge gap by providing local knowledge with regional and international relevance, (2) theoretical gap by extending the structure and agency research to specialist medical education where there is dearth of similar research and finally, (3) methodological gap by presenting constructivist GTM as a plausible research approach to explore the interaction between structure and agency in specialist medical education.

On a conceptual level, this study responds to the calls for research that integrates student agency and context in the conceptualisation of teaching and learning in HE. It explores this topic from GTM methodological perspective, aiming to enhance current literature on this subject (Ashwin, 2008, 2009; Case, 2015; Ertl and Wright, 2008; Haggins, 2003; Hodkinson et al., 2007; Mandal, 2018; Stenalt and Lassesen, 2021; Varpio et al., 2017). Consequently, it contributes to the global literature on the interaction between structure and agency in T&L in HE. Additionally, it provides an African perspective on the global discourse surrounding medical education reform and the associated challenges in response to the gap identified by Gukas (2017). Moreover, it establishes a foundation for local discussions on the interplay between structures and agency in student learning within PGME. It is hoped that this conversation will ignite more research in this area.

This study offers valuable insight into the challenges faced by trainee medical specialists in study contexts and emphasises the role that student agency plays in navigating these

challenges. The thesis provides a nuanced understanding on how individuals navigate complex educational environments, with a focus on the factors at play. This information can be utilised to improve medical specialist training programs in South Africa and similar settings, as well as to inform future educational policy directions. Additionally, this thesis contributes to the ongoing debate on the relationship between structure and agency. It is the second research project I have conducted on students' educational experiences, which aligns with my research focus. I intend to further develop my research in this area.

7.3. Limitations and strengths

The research findings were generated from a sample of 30 trainee medical specialists representing four disciplines: Medicine, Obstetrics and Gynaecology, Paediatrics, and Surgery. This study was conducted in one of South Africa's nine provinces. It is important to note that the scope of this study does not extend to generalising the findings beyond the study settings, medical disciplines, and the specific time frames within which it was conducted. However, it is worth mentioning that similar findings have been reported in previous studies, indicating that the results of this study could potentially contribute to the development of training programs for medical specialists outside the study contexts.

This study does not claim to represent reality but the researcher’s subjective interpretation of participants’ account of their reality. The study also did not seek the views of other stakeholders involved in specialist training, specifically the departmental/academic chairs, program directors, clinical teachers, hospital managers, PDoHs, HPCSA and CMSA officials. Including the views of these stakeholders could have added additional perspectives regarding the specialist's training programs and related challenges. However, doing so would have changed the purpose of the study. This study sought to explore the experiences of trainee medical specialists, the challenges they faced, navigational strategies and factors informing their choice of strategies/responses to their lived realities.

The study, however, possesses several strengths. Firstly, it is the first study that I am aware of that examined this topic within the study settings, utilising GTM to investigate the relationship

between structure and agency among this particular group of medical students. Secondly, the study provides valuable insight into the existence of challenges within medical specialist training programs in South Africa. This valuable information has the potential to improve specialist medical training programs and guide education policy development. Thirdly, certain challenges identified in this study have been previously documented by researchers in various settings, implying that they are not exclusive to the study or the South African context, but rather widespread. Therefore, the findings from this study hold implications not only for specialist training programs locally but also international training programs.

7.4. Suggestions for future research

We propose conducting a comprehensive study with the objective of gathering insight from all medical schools, educators, program directors, HPCSA, and CMSA regarding the issues raised in this thesis. Additionally, future research should consider using critical action research to facilitate the development of solutions to the challenges and issues identified in this thesis.

CHAPTER 8: RECOMMENDATIONS

Based on the study's findings the following recommendations are made:

- Key stakeholders involved in the delivery of the medical specialist training programs in South Africa should consider conducting a thorough review of the current governance structure of the training programs, with special attention paid to the relationship between the Provincial Department of Health, Universities, CMSA, and HPCSA and, institute robust accountable mechanisms.
- Furthermore, stakeholders should consider adopting a competency-based training model in order to bring about structure and address some of the training programs related challenges that were identified.
- HPCSA should try and strengthen its oversight mechanism to ensure quality of the training programs.
- The Department of Health should collaborate with other stakeholders to promptly review the RWOPs Policy and its detrimental effects on medical education and specialist training in particular.
- Medical schools working together with National Department should consider establishing dedicated training posts for consultants whose focus should be on training and less on service.
- Educators should be trained on HPE theories, principles, and practices to empower them and to enhance their effectiveness.
- We recommend implementing an annual survey for trainee medical specialists as part of ongoing quality improvement strategy.
- The HPCSA should consider initiating discussions with key stakeholders regarding the lack of adherence to working hours regulations put systems in place and enforce adherence.
- We recommend introduction of resilience training as part of specialist training to reinforce the trainees' sense of agency.
- Universities should actively address bullying, racial and gender discriminations.

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Appendix A: Lancaster Ethics Clearance

Lancaster University

Research Enterprise Services,
D22 FASS Building
Lancaster University,
LA1 4YT

Lawrence Chauke
REC reference: FL15038
Department: Educational Research

19th October, 2016

Dear Lawrence,

Thank you for submitting your ethics application and additional information for *Fit for the purpose? An evaluation of a national specialist training program: the Fellowship of the Colleges of Medicines of South Africa (CMSA).* The information you provided has been reviewed by member(s) of the Faculty of Arts and Social Sciences and Lancaster Management School Research Ethics Committee and I can confirm that approval has been granted for this project.

As principal investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;
- reporting any ethics-related issues that occur during the course of the research or arising from the research (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress) to the Research Ethics Officer;
- submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

Please contact the Research Ethics Officer, Debbie Knight (01542 592605) if you have any queries or require further information.

Kind regards,

Debbie Knight.

Debbie Knight
Secretary, FASS-LUMS Research Ethics Committee fass.lumsethics@lancaster.ac.uk
Phone (01524) 592605| D22 FASS Building, Lancaster University, LA1 4YT

Appendix B: Clearance Certificate

R14/49 Dr Hlengani Lawrence Chauke

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M1611116

NAME: (Principal Investigator)	Dr Hlengani Lawrence Chauke
DEPARTMENT:	Obstetrics and Gynaecology National Colleges of Medicine of South Africa NPC University of Pretoria and SMU
PROJECT TITLE:	Fit for the Purpose? An Evaluation of a National Specialist Training Programme: The Fellowship of the Colleges of Medicines of South Africa (CMSA)
DATE CONSIDERED:	25/11/2016
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Dr Gemma Derrick
APPROVED BY:	Professor P Cleaton-Jones, Chairperson, HREC (Medical)
DATE OF APPROVAL:	20/02/2017

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 in Room 301, 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 November and will therefore be due in the month of November each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature

Date 01/12/2016

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Appendix C: Wits amended ethics clearance.

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG	HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

08/12/2021

Dr Hlengani Lawrence Chauke
Obstetrics and Gynaecology
Registrars Obstetrics and Gynaecology
Medicine, Sugery and Paediatrics
University of the Witwatersrand
University of Pretoria and SMU
Sent by e-mail to:

Dear Dr Chauke

Re: **Protocol Ref No:** M1611116
Protocol Title: *Fit for the Purpose? An Evalaution of a National Specialist Training Programme: The Fellowship of the Colleges of Medicines of South Africa (CMSA)*
Principal Investigator: Dr Hlengani Lawrence Chauke

Thank you for your letter of 19/11/2021.

We have no issue from an ethics perspective with the curtailment of the data sources for your study. It might be prudent to check that the Faculty has no concerns either.

Thank you for keeping us informed.

Yours Sincerely

J. Burns
.....
Mr I Burns
For the Human Research Ethics Committee (Medical)

.....
Dr CB Penny, Chairperson, Human Research Ethics Committee (Medical)

Appendix D: HPCSA permission

Health Professions Council of South Africa

553 Madiba Street
Arcadia
Pretoria
PO Box 205
0001 PRETORIA
Tel: +27 (12) 338 9359
Fax: +27 (12) 324 9476
Email: carollinem@hpcsa.co.za
Website: www.hpcsa.co.za

Email: Lawrence Chauke
lawrence.chauke2@wits.ac.za

Department: OFFICE OF THE REGISTRAR
Designation: ACTING REGISTRAR
Reference: Mr L Chauke
Date: 09 January 2017

Dear Mr Chauke

RE: REQUEST FOR PERMISSION TO CONDUCT A STUDY ON THE NATIONAL SPECIALIST TRAINING FRAMEWORK

We refer to your email dated 05 January 2017, contents of which are noted.

You are permitted to conduct a study on the national specialist training programme, as per your request.

We trust the above is in order.

Yours faithfully

Adv FP Khumalo
Acting Registrar/ CEO

Appendix E: CMSA permission

CMSA
The Colleges of Medicine of South Africa NPC
Nonprofit Company (Reg. No. 1955/000003/08)
Nonprofit Organisation (Reg No 009-874 NPO)
VAT Number: 4210273191
27 Rhodes Ave, PARKTOWN WEST 2193
Private Bag X23, BRAAMFONTEIN 2017
Tel: +27 11 726-7037/8/9
Fax: +27 11 726-4036
General: angie.buterin@cmsa.co.za
Academic Registrar: ann.vorster@cmsa.co.za
Website: www.cmsa.co.za

JOHANNESBURG
ACADEMIC OFFICE

8 February 2017

Ref: Fac 12B

Dr L Chauke
Email: Lawrence.chauke2@wits.ac.za

Dear Dr Chauke

ACCESS TO CMSA STATISTICS SUBMITTED TO THE HPCSA
Your letter of 3 February 2017 refers

At the recent ManCo meeting of the CMSA it was approved that the based on the letter of permission from the HPCSA you may be given the statistics from the CMSA submitted to them biannually.

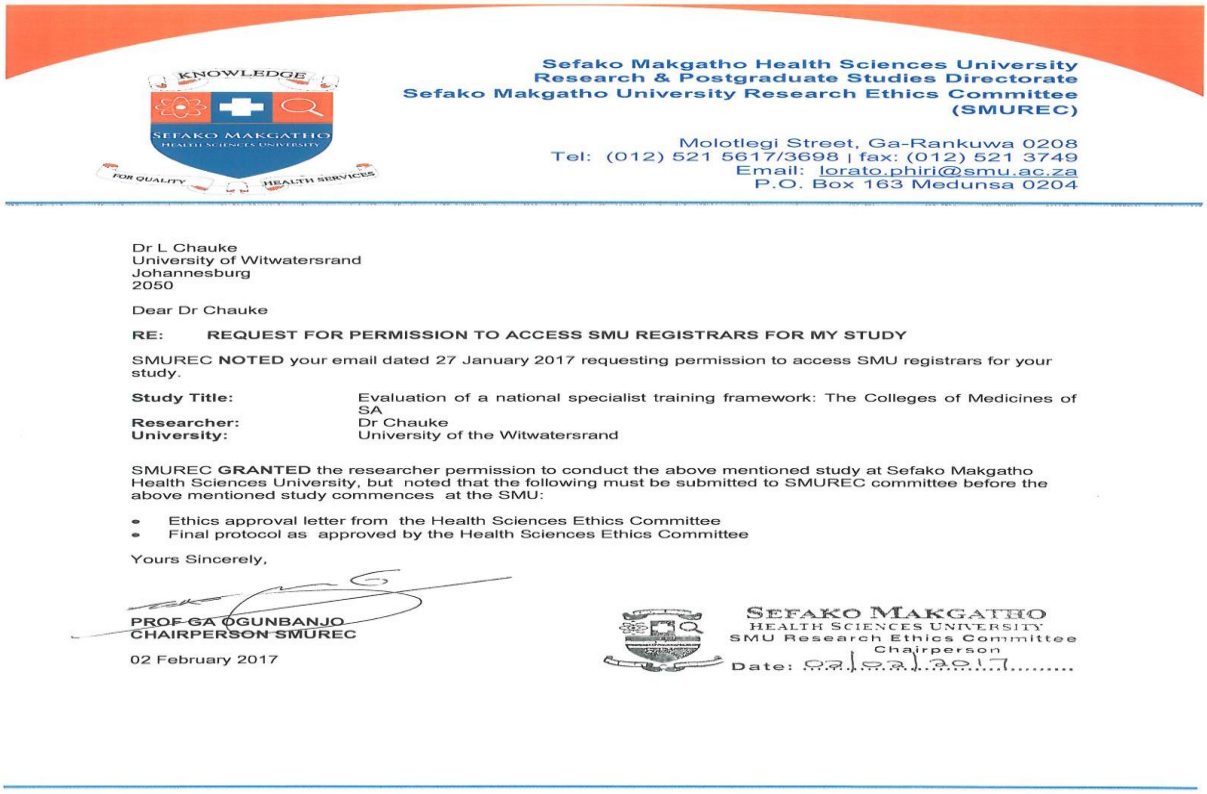
You may submit a copy of this letter to the University of the Witwatersrand Ethics committee.

Yours sincerely

Mrs Ann Vorster
ACADEMIC REGISTRAR

ALV/ab

Appendix F: SMU permission



Sefako Makgatho Health Sciences University
Research & Postgraduate Studies Directorate
Sefako Makgatho University Research Ethics Committee
(SMUREC)

Molotlegi Street, Ga-Rankuwa 0208
Tel: (012) 521 5617/3698 | fax: (012) 521 3749
Email: lorato.phiri@smu.ac.za
P.O. Box 163 Medunsa 0204

Dr L Chauke
University of Witwatersrand
Johannesburg
2050

Dear Dr Chauke

RE: REQUEST FOR PERMISSION TO ACCESS SMU REGISTRARS FOR MY STUDY

SMUREC **NOTED** your email dated 27 January 2017 requesting permission to access SMU registrars for your study.

Study Title: Evaluation of a national specialist training framework: The Colleges of Medicines of SA
Researcher: Dr Chauke
University: University of the Witwatersrand

SMUREC **GRANTED** the researcher permission to conduct the above mentioned study at Sefako Makgatho Health Sciences University, but noted that the following must be submitted to SMUREC committee before the above mentioned study commences at the SMU:

- Ethics approval letter from the Health Sciences Ethics Committee
- Final protocol as approved by the Health Sciences Ethics Committee

Yours Sincerely,

PROF GA OGUNBANJO
CHAIRPERSON SMUREC

02 February 2017

SEFAKO MAKGATHO
HEALTH SCIENCES UNIVERSITY
SMU Research Ethics Committee
Chairperson
Date: 02/02/2017

Appendix G: Wits school of clinical Medicine Permission

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

FACULTY OF HEALTH SCIENCES

School of Clinical Medicine

3 January 2017

The Human Research Ethics Committee (Medical)

Faculty of Health Sciences

University of Witwatersrand

Dear Sir/Madam

RE: DR HL CHAUKE – ETHICS APPLICATIONS (REFERENCE NUMBER M1611116)

Dr Chauke has been granted permission by the School of Clinical Medicine, University of the Witwatersrand to conduct his study titled:

"Fit for the Purpose? An Evaluation of a National Specialist Training Programme: The Fellowship of the Colleges of Medicine of South Africa (CMSA)"

He will be the principal investigator and the research will be conducted nationally and in the School of Clinical Medicine.

Yours sincerely

Professor M. Lukhele

Head of School: Clinical Medicine

Faculty of Health Sciences

University of the Witwatersrand

Faculty of Health Sciences · School of Clinical Medicine: Address: Wits Medical School, 4th Floor, Office No. 4B44, No. 7 York Road, Parktown · Tel: +27 11 717 2038 · Fax: 27 11 717 2529 · E-mail: hilda.potgieter@wits.ac.za · Website: www.wits.ac.za

Appendix H: Permission from Department of Paediatrics

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG | FACULTY OF HEALTH SCIENCES

17 January 2017

TO WHOM IT MAY CONCERN

RE: DR LAWRENCE CHAUKE, PhD - "FIT FOR THE PURPOSE? AN EVALUATION OF A NATIONAL SPECIALIST TRAINING PROGRAM: THE FELLOWSHIP OF THE COLLEGES OF MEDICINES OF SOUTH AFRICA (CMSA)."

As Academic Head of the Department of Paediatrics and Child Health at the University of the Witwatersrand I provide my support for this study and approval for our staff to be interviewed as participants.

Sincerely,

ADJUNCT PROFESSOR ASHRAF COOVADIA
MB ChB, DCH, FCPaed (SA), Dip HIV Man
Academic Head and Head of Department
Paediatrics and Child Health
Rahima Moosa Mother and Child Hospital
University of the Witwatersrand
Tel: +27 11 470 9100/9284
Fax: +27 86 553 4623
Personal Fax: +27 86 614 2346
Mobile: +27 82 927 9097
Email: Ashraf.Coovadia@wits.ac.za

Appendix I: Permission from Department of Medicine

Department of Internal Medicine

7 York road, Parktown, 2193, South Africa Telegrams 'Witsmed' Fax: +27 11 643 8777 Tel: +27 11 488 4622

6 January 2017

Prof Peter Cleaton-Jones,
Chairman,
Wits Human Research Ethics Committee (Medical).

Dear Prof Cleaton-Jones,

Re: Request for permission to undertake research within the Department of Internal Medicine.

The purpose of this letter is to grant Dr Lawrence Chauke from the Department of Obstetrics and Gynaecology at the Charlotte Maxeke Johannesburg Academic Hospital, permission to conduct research at the Department of Internal Medicine.

The project entitled: *Fit for the purpose? An evaluation of a national specialist training program: the Fellowship of the Colleges of Medicines of South Africa (CMSA)* entails him interviewing medical registrars, both former and current, from 2011 until now, on aspects related to our specialist training program in South Africa.

This approval is subject to all the conditions set by the Wits Human Research Ethics Committee (Medical) and all the necessary approvals from the various authorities.

Sincerely,

A/Prof Colin Nigel Menezes,
MD, MMed (Int Med), Dip HIV Mang (SA), DTM&H, FCP (SA), Cert ID (SA), PhD

Academic Head, Department of Internal Medicine,
School of Clinical Medicine.

Phone: Hospital: +27 11 933 8940; University: +27 11 488 3621
Fax: +27 86 553 3582
Email: colin.menezes@wits.ac.za

Appendix J: Permission from Department of Surgery

University of the Witwatersrand, Johannesburg

Department of Surgery

7 York Road, Parktown, 2193 South Africa • Telephone (011) 717-2580 • Fax (011) 484-2717

18th January 2017

To whom it may concern

Re: Permission to interview registrars in the Department of Surgery: Dr L Chauke

Dr Chaukes thesis is looking at the national specialist qualification framework as to the strength and weaknesses of the programme. There are two parts of the study. The first part of the study focusses on documentary analysis. The second part involves interviewing the registrars to assess their perceptions and experience of the training framework. I would like to formally provide Dr Chauke with permission to interview registrars in the Department of Surgery provided they give him their own consent to do so.

Yours sincerely

Professor M.D. Smith,
Academic Head, Department of Surgery,
University of the Witwatersrand, Johannesburg
Chief Surgeon and Head of General Surgery,
Chris Hani Baragwanath Academic Hospital.

Appendix K: Permission from Department of Obstetrics and Gynaecology

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

OBSTETRICS AND GYNAECOLOGY
School of Clinical Medicine

30th December 2016

To Whom It May Concern:

Re.: Dr Lawrence Chauke' PhD project titled: Fit for a purpose: An evaluation of a national specialist training program: the Fellowship of the Colleges of Medicines of South Africa (CMSA).

I hereby give Dr Chauke permission to interview registrars in the Department of Obstetrics and Gynecology at the University of the Witwatersrand as part of his research project.

Regards

Prof Hennie Lombaard

Acting Academic Head: Department of Obstetrics and Gynecology, University of Witwatersrand.

Head of Department Obstetrics and Gynecology

Rahima Moosa Mother and Child Hospital

Adjunct Professor

Faculty of Health Sciences

Appendix L: Participant information sheet

Participant Information Sheet

FIT FOR PRUPOSE? The Fellowship of the Collebges of Medicine of South Africa

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage: www.lancaster.ac.uk/research/data-protection

My name is Lawrence Chauke and I am conducting this research for my PhD *as* a student in Higher Education Research programme at Lancaster University, Lancaster, United Kingdom.

What is the study about?
The purpose of this study is to investigate the lived experiences of trainee medical specialists training/who have trained under the new specialist certification framework of the Colleges of Medicines of South Africa.

Why have I been approached?
You have been approached because the study requires information from people who have trained or are training as a medical specialist. We believe that your experiences will shed some light regarding the training process.

Do I have to take part?
No. It's completely up to you to decide whether or not you take part

What will I be asked to do if I take part?
If you decide you would like to take part, you would be asked to confirm your participation by signing an informed consent and thereafter participate in an interview which will be digitally/tape recorded.

Will my data be Identifiable?
During the interview you will be only identified by a number and not your real name. The data collected for this study will be stored securely and only the researchers conducting this study and professional transcriber will have access to this data. The professional transcriber will sign a confidentiality

- Audio recordings will be destroyed and/or deleted once the project has been submitted for publication/examined
- Hard copies of questionnaires will be kept in a locked cabinet.
- The files on the computer will be encrypted and the computer itself password protected.
- At the end of the study, hard copies of questionnaires will be kept securely in a locked cabinet for ten years. At the end of this period, they will be destroyed.

V25-5-18

Appendix M: Participant Information Sheet

- The typed version of your interview will be made anonymous by removing any identifying information including your name. Anonymised direct quotations from your interview may be used in the reports or publications from the study, so your name will not be attached to them. All reasonable steps will be taken to protect the anonymity of the participants involved in this project.
- All your personal data will be confidential and will be kept separately from your interview responses.

What will happen to the results?

The results will be summarised and reported in a dissertation/thesis and may be submitted for publication in an academic or professional journal.

Are there any risks?

There are no risks anticipated with participating in this study. However, if you experience any distress following participation you are encouraged to inform the researcher and contact the resources provided at the end of this sheet.

Are there any benefits to taking part?

Although you may find participating interesting, there are no direct benefits in taking part.

Who has reviewed the project?

This study has been reviewed and approved by the, FASS-LUMS Research Ethics Committee at Lancaster University.

Where can I obtain further information about the study if I need it?

If you have any questions about the study, please contact the main researcher:

Hlengani Lawrence Chauke
Full Address: Department of Obstetrics and Gynaecology, Charlotte Maxeke Johannesburg Academic Hospital, 5 Jubilee Road, Park town
Tel: +27832775201
Email: l.chauke@lancaster.ac.uk *Lawrence Chauke*
E-mail: lawrence.chauke@wits.ac.za
Tel: 27114883179

Or my supervisor:
Dr Gemma Derrick
Educational Research Department, County South, Lancaster University, LA1 4YD, UK
Tel: 44 (0)1524 595016
Email: g.derrick@lancaster.ac.uk

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

Professor Paul Ashwin – Head of Department
Tel: +44 (0)1524 594443 Email: P.Ashwin@Lancaster.ac.uk
Room: County South, D32, Lancaster University, Lancaster, LA1 4YD, UK.

Debbie Knight

Secretary, FASS-LUMS Research Ethics Committee fass.lumsethics@lancaster.ac.uk

Phone (01524) 592605| D22 FASS Building, Lancaster University, LA1 4YT

Thank you for taking the time to read this information sheet.

V25-5-18

Department of Educational Research
County South, Lancaster University, LA1 4YD, UK
Tel: +44 (0) 1524 592685

Educational Research | Lancaster University

Consent Form

Title of Project: Fit for the purpose? An evaluation of a national specialist training program: The Fellowship of the Colleges of Medicines of South Africa.

Name of Researcher: HL Chauke

		Please Tick if agree
1.	I confirm that I have read and understand the information sheet dated 20 July 2016 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2.	I understand that my participation in this research study is voluntary. If for any reason I wish to withdraw during the period of this study, I am free to do so without providing any reason. I understand that my contributions will be part of the data collected for this study and my anonymity and confidentiality will be ensured at all time. I give consent for all my contributions to be included and/or quoted in this study and publications	
3.	I consent to the interview being audio recorded	
4.	I consent to the interview tape being sent to an external company for transcription and I understand that no personal identifying information will be included during the transcription process.	
5.	I understand that the information I provide will be used for a PhD research project and the combined results of the project may be published. I understand that I have the right to review and comment on the information I have provided.	
6.	I agree to take part in the above study.	

Name of Participant:

Signature

Date

Appendix N: Confidential agreement with professional transcriber

Confidentiality Agreement for the Transcription of Qualitative Data

Name of Study:	**Fit for the purpose? An evaluation of a national specialist training program: the Fellowship of the Colleges of Medicines of South Africa (CMSA)**
Study PI:	**Hlengani Lawrence Chauke**
Transcribing Company/Person	Top Transcriptions

In accordance with the Research Ethics Committee at Lancaster University, all participants in the above-named study are anonymised. Therefore any personal information will not be disclosed to any third party. Any other data (i.e. the research data, for example responses given by participants in interviews) generated or secured through transcription will only be used for academic purposes such as a thesis, journal articles or conference presentations.

By signing this document, you are agreeing:

- not to pass on, divulge or discuss the contents of the audio material provided to you for transcription to any third parties
- to ensure that material provided for transcription is held securely and can only be accessed via password on your local PC.
- to return transcribed material to the research team when completed and do so when agreed in password protected files
- to destroy any audio and electronic files held by you and relevant to the above study at the earliest time possible after transcripts have been provided to the research team, or to return said audio files.

Your name (block capitals) Veronique Fallick

Your signature 

Date 04/08/2017

Appendix O: Initial Interview Protocol

1. ***Introductions and housekeeping***

- Greetings, introducing the study and obtaining consent.
- Allow time for questions.

2. ***Demographic information***

- Record following information:
- Date of the interview:
- Date:
- Participant number:
- Contact number:
- Email:
- Specialty:
- Age:
- Gender:
- Marital status:
- Number of children:

3. ***Study program related information***

- Current year of study:
- Number of attempts at Basic Sciences/Part I before successful:
- Number of Attempt at Final Fellowship /Part II examination before successful:
- Mmed Dissertation completed? YES/NO

4. **Interview questions**

4.1. I**ntroductions and consent process**

4.2. Opening question was: Briefly *tell me about yourself and why you chose to specialise in ____ (name of the speciality*).

4.3. **Invite participants to share his/her experiences**:

- "Please *tell me about your experiences during your training"*.

4.2**. Invite participants to give specific examples**:

- To broaden the researcher's understanding of participants' lived experiences, ask each participant to give specific examples when appropriate, ask them what was going through their minds as they went through the experiences, how they responded and why they responded in that way).

4.3. **Explore emerging issues.**

- Ask further questions based on emerging themes, concepts, categories, and storyline.

4.4***. Prompts***

Use the following prompt when appropriate assist participants to relate their stories and share their experiences:

- *I am not completely certain that I understand what you are saying, do you mind clarifying that statement?"*
- *What do you mean by that?*
- *Do you mind explaining what you mean by …?"*
- *Do you mind clarifying that statement?*
- *Why do you think you felt that way?*
- *What do you think made you react that way?*
- *Why do you think you felt that way*?" and "What *do you think made you react in that way?*"

4.5. ***Concluding remarks***

- Thank participants for their time and allow them to ask questions or add additional comments. Ask participants for permission to email them a copy of the transcript or alternatively a summary or telephone call to ensure that the transcripts are a true

reflection of the interview. Ask them if they would like to have a copy of the summary of study once completed.