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Students' Experiences and Perspectives Regarding Undergraduate Research in Speech-Language Pathology

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Abstract. Research is crucial in developing evidence-based clinical practice, particularly in fields such as speech-language pathology (SLP). However, disparities in research engagement persist, especially in low- and middle-income countries, where barriers such as resource limitations and inadequate mentorship impact students' research experiences. This study explores the experiences and perspectives of undergraduate Speech-Language Pathology students at a South African university as they navigate their final-year research projects. Using a qualitative research approach, with a phenomenological design, data were collected via semi-structured questionnaires at two key stages—before data collection and post-research completion. The study was conducted with 8 participants gathered through non-probability purposive sampling. Eight main themes emerged from the data, including group work in undergraduate research projects, the role of the supervisor, barriers and facilitators to the research process, pursuing postgraduate studies, suggestions for the future, feelings towards research and understanding the importance of research. Findings indicate that while students acknowledge the importance of research in clinical practice and knowledge expansion, challenges such as time constraints, inadequate supervision, and group dynamics affect their overall experience. Despite initial anxieties, many students developed a more positive perception of research over time, with some considering postgraduate studies. The study highlights the need for improved supervision structures, research training, and institutional support, such as financial aid, to facilitate improved research experiences at the undergraduate level for Speech-Language Pathology students in South Africa.

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1. Introduction

Research is a critical driver of innovation and advancement in the health sciences, particularly in low- and middle-income countries (LMICs) like South Africa (SA), where disease burdens and mortality rates remain high (Hedt-Gauthier et al., 2019). Despite the pertinent need for ongoing research in lower and middle-income regions, most global health research continues to originate from high-income countries (HICs), consequently leading to a need for more contextually relevant findings for LMICs (Gunnels et al., 2024). This disparity necessitates a clear refocus on building local research capacity and equipping students to contribute to the field of research during their studies. Specifically, undergraduate research offers a pivotal point of academic inquiry, sparking interest and guiding students toward future academic careers (Gunnels et al., 2024).

Current literature in higher education identifies a growing interest in embedding research into undergraduate curricula, particularly in LMICs, where institutional constraints (e.g., poor supervision structures, lack of research culture, underfunding) limit student engagement and skill development (Amani et al., 2022; Sharma et al., 2024). Recent studies also highlight that while undergraduate research enhances professional readiness, it often fails to deliver optimal learning outcomes due to misalignment between student needs and institutional support (Cooper et al., 2022; Gunnels et al., 2024).

In SA, the undergraduate speech-language pathology (SLP) program is classified as level 8 on the National Qualifications Framework (NQF). The South African Qualifications Authority (SAQA) level descriptors specify the learning outcomes required at each level, with the associated assessment criteria. An NQF Level 8 qualification represents advanced expertise and skills in a professional field (SAQA, 2023). Therefore, research often forms part of an NQF level 8 program, offering the opportunity to assess higher order thinking skills.

Undergraduate research exposure and experiences are essential to students' academic development, stimulating discourse, critical thinking, and analytical skills. Literature has revealed that students who engaged in research during their undergraduate studies reported higher levels of satisfaction, personal growth, and academic performance than those who possibly had not (Gunnels et al., 2024; Linn et al., 2015). Thus, the process is mutually beneficial to students personally and also acts to enhance institutions' academic output by increasing research engagement and faculty involvement (Mugabo et al., 2021). For students in fields such as health sciences and SLP, undergraduate research is vital in preparation for clinical practice, where evidence-based decision-making is crucial. Research participation ensures students' deeper understanding of the multifaceted theoretical and practical aspects of SLP, equipping them with the tools they need to pursue not only postgraduate education but also their professional careers (Gunnels et al., 2024).

Despite various benefits, undergraduate research is still faced with barriers, particularly in LMICs like SA. Common challenges students in SA face are related to limited, stagnant or outdated research knowledge, time constraints, and institutional factors, such as inadequate resources, lack of access to databases, and insufficient supervision or mentorship (Kumar et al., 2019; Sharma et al., 2024). A study by Amani et al. (2022) highlighted the personal challenges students in higher education face in postgraduate transitions, such as self-management, motivation, and research writing skills.

Institutional barriers are particularly prevalent in underfunded or under-resourced environments. Postgraduate students from underrepresented backgrounds often experience challenges with research due to poor secondary educational foundations, a lack of supportive environments, and overloaded supervisors who cannot provide adequate guidance (Mutangadura et al., 2024; Saidi, 2024). Additionally, students in resource-constrained institutions may lack the appropriate research methodologies and tools, further hindering effective participation in research or ineffective implementation (Nwosu et al., 2024).

Research supervision and mentorship are key factors that directly influence the success of undergraduate research experiences. Research has shown that students who receive strong mentorship tend to continue their research endeavors, perform well academically, and even consider pursuing postgraduate education (Cooper et al., 2022; Estrada et al., 2018). The role of mentorship provides the guidance necessary for students to navigate the complexities of research, develop research-specific skills, and build self-efficacy (Erdogan & Bauer, 2024).

In SA, mentorship in research supervision is often a key determinant of whether students remain motivated and engaged (Mutangadura et al., 2024; Sharma et al., 2024). Supervisors serve to ensure that students have the necessary research skills and continue to be supported through the challenges the research process presents. Heavy workloads and under-resourced environments can, however, impact the supervisor mentorship abilities required for student success, particularly in postgraduate transitions (Saidi, 2024).

The Corona Virus (COVID-19) pandemic also altered the way undergraduate research is conducted. Many institutions have shifted to remote and hybrid research models, which, while allowing research to continue, has raised concerns about the effectiveness of virtual learning environments compared to traditional, hands-on experiences (Erickson et al., 2022; Yang et al., 2022). These challenges are particularly pronounced in the fields of health sciences, such as SLP, where hands-on learning and direct clinical practice are essential for developing the practical and clinical reasoning skills needed for research (Smith & Lee, 2024). During the COVID-19 pandemic, students had to quickly adapt to new research methods and often needed to rely on remote methods and digital and "tele-" tools that offered a different depth of engagement than in-person research, especially when undertaking qualitative research protocols. This

highlighted the need for institutions to provide additional support and resources to ensure that students continued to benefit from meaningful research experiences, even in remote or telerehabilitation contexts (Erickson et al., 2022). Exploring student experiences and perspectives regarding research is vital for understanding how undergraduate programs can better prepare students for continued academic and professional growth. In the field of SLP, research participation at the undergraduate level provides students with critical insights into the role of research in clinical practice and the value of evidence-based care. Thus, reflecting on these research experiences is vital to fully understanding how students' attitudes toward research may evolve as they approach the completion of their undergraduate research projects (Hedt-Gauthier et al., 2019; Saidi, 2024).

The current study aims to explore students' experiences and perspectives on research in the field of SLP. By examining students' views before and near the completion of their final-year undergraduate group research projects, the study seeks to identify the core factors that shape their perceptions of the research process as well as compare and/or contrast how this may differ upon initiation and near the completion of their research journey. Improving student support and guidance through supervision, mentorship, and academic resource allocation can only be accomplished by analyzing students' points of view (Sharma et al., 2024). This can, in turn, cultivate a positive research culture within undergraduate programs, encouraging students to be more likely to consider postgraduate studies.

Speech-language pathology students' views can inform curriculum improvements that better address student needs and challenges in research. Moreover, if we can pinpoint the factors that positively influence students' research experiences, we may encourage more students to pursue postgraduate studies in the field of SLP. This could create more academics, enhance research output in the field, advance evidence-based practice in clinical care and improve patient outcomes in public and private health sectors (Amani et al., 2022).

By addressing the research question—What are undergraduate students' experiences and perspectives regarding research in speech-language pathology in South Africa? —this study seeks to bridge the gap in current knowledge and provide valuable insights into the challenges and opportunities SLP students face as they navigate research during their undergraduate years. It will offer recommendations for improving research support systems to promote postgraduate research and strengthen the academic and clinical contributions of speech-language pathology in South Africa.

Research Question

What are undergraduate students' experiences and perspectives of research in the field of speech-language pathology?

Aim

To investigate undergraduate SLP students' experiences and perspectives on research in the field of speech-language pathology.

Objectives

- To compare SLP students' perspectives before and near the completion of their undergraduate group research project.
- To identify the factors that influence SLP student perspectives and research experiences.
- To note possible changes in the factors that influence SLP student perspectives and experiences of research over time.

2. Theoretical and Conceptual Framework

This study is informed by a combination of experiential learning theory (Kolb, 1984), self-efficacy theory (Bandura, 1977), and conceptual frameworks on undergraduate research engagement and mentorship in higher education. These perspectives offer a lens for understanding the students' dynamic engagement in research, their evolving perceptions, and the contextual barriers and facilitators that shape their development.

2.1 Experiential Learning Theory (ELT)

Kolb's experiential learning theory posits that learning is a process through which knowledge is created by transforming experience. Learners cycle through concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984). In the context of undergraduate research, this model supports the idea that active participation in the research process, combined with reflection and feedback, enhances knowledge construction and professional identity development. In this study, students reported personal growth, increased confidence, and enhanced clinical reasoning, aligning with ELT's core propositions.

2.2 Self-Efficacy Theory

Bandura's (1977) self-efficacy theory explains how individuals' beliefs in their ability to succeed influence their choices, motivation, and perseverance. Undergraduate students' narratives in this study reflected fluctuations in confidence, particularly in the face of barriers such as time constraints and limited supervisory support. These shifts in perceived capability illustrate the relevance of self-efficacy theory to understanding how students navigate and persist through research challenges.

2.3 Frameworks of Undergraduate Research Engagement

Conceptual models of undergraduate research engagement suggest that factors such as institutional culture, research training, access to mentorship, and student agency impact the quality of research experiences (Gunnels et al., 2024; Hunter et al., 2007; Linn et al., 2015). This study echoes these frameworks, identifying how mentorship, time allocation, and curriculum design influenced students' experiences. As students progressed through their projects, their sense of ownership and relevance of research increased, an outcome consistent with

literature on authentic, inquiry-based learning environments (Linn et al., 2015).

2.4 Mentorship in Higher Education

Mentorship is consistently identified as a core determinant of successful undergraduate research outcomes. Supportive supervision positively influences students' research competence, academic self-concept, and interest in postgraduate studies (Cooper et al., 2022; Erdogan & Bauer, 2024; Tenenbaum et al., 2014). In this study, disparities in supervisory engagement impacted group dynamics, learning outcomes, and students' evolving views of research. The presence of collaborative mentorship and clear feedback loops enabled students to build resilience and autonomy, core outcomes of effective mentorship.

2.5 Integration with Research Problem

These theories and frameworks offer a multidimensional understanding of how research experiences affect students' development. They help explain the interplay between student motivation, institutional support, and academic growth. Moreover, they provide a theoretical grounding for the study's research question, offering interpretive insights into how students' perspectives evolve during their research journey and guiding recommendations for more supportive learning environments in low- and middle-income contexts.

2.6 Selection of the Theoretical and Conceptual Framework

The theoretical and conceptual models used in this study were selected through a purposeful literature mapping strategy. The study focuses on understanding the lived experiences of undergraduate SLP students conducting research. Thus, theories were selected based on their ability to explain student learning processes (experiential learning theory), motivational and affective responses (self-efficacy theory), and institutional influences on engagement (research engagement and mentorship frameworks).

Since phenomenology emphasizes subjective experience and meaning making, the chosen models had to support constructivist and student-centered interpretations, hence the selection of ELT and self-efficacy theory. Recent publications (2018–2024) were prioritized to reflect state-of-the-art models in undergraduate research pedagogy and student development, such as Cooper et al. (2022), Gunnels et al. (2024), and Sharma et al. (2024). These frameworks were not developed de novo but rather discovered through synthesis of current literature, selected based on their explanatory and prescriptive power to interpret student experiences and guide future curriculum and mentorship practices.

3. Methodology

3.1 Research Design

This study employed a qualitative approach, using a phenomenological research design (Tenny et al., 2022). Phenomenological qualitative inquiry remains one of the most suitable approaches for capturing complex, subjective student experiences in educational settings (Creswell & Poth, 2018; Yin, 2018). It allows for an in-depth exploration of meaning-making across time points, which is

crucial when assessing changes in perceptions before and after participation in a research module. This methodology is frequently employed in current research evaluating student narratives, mental health during academic transitions, and institutional feedback systems.

A qualitative research approach aims to understand, describe, and interpret how various individuals, communities, and cultures perceive their surroundings (Patton, 2015). Employing qualitative research assists in examining human behavior, detailing circumstances, perceptions, experiences, and attitudes, which would otherwise be challenging to correctly and objectively measure (Patton, 2015; Soratto et al., 2020). A qualitative research approach also promotes a holistic and person-centered approach, allowing researchers to explore other people's views, experiences, and explanations of events rather than imposing the researcher's own perspectives (Bengtsson, 2016).

Phenomenology refers to an individual's perception of the meaning of an event, which aims to understand people's viewpoints on a specific topic (Leedy & Ormrod, 2020). In this study, it also allowed content and various themes to be analyzed and explored (Leedy & Ormrod, 2020). As the possible research experiences and perspectives of student SLPs become better understood, undergraduate programs become more aware of these effects and, through this, provide sufficient and appropriate training and targeted curriculum outcomes to support student SLPs' research experience at the undergraduate level. Therefore, using the aforementioned research design was appropriate for this study.

3.2 Study Population

The participant population of this study encompassed 8 female adult (18+ years) speech-language pathology (SLP) students of any race enrolled in their final/fourth year of study at a South African university.

3.3 Sampling Technique

Non-probability, purposive sampling was utilized, as this allowed for the obtaining of insights into individuals or events to maximize comprehension of a phenomenon (Omona, 2013). Purposive sampling was used to select information-rich cases (Patton, 2015). This involves identifying and selecting individuals or groups of individuals who are especially knowledgeable in or experienced with the phenomenon of interest (Cresswell & Clark, 2011). Thus, participants of this study were recruited through the Discipline of Speech-Language Therapy. The researchers requested access to provide the students within the program with information that met the participant selection criteria. Students all received a short description of the planned research and a voluntary informed consent document to participate in this study.

3.4 Sample Size

Round one of data collection yielded ten responses from which two participants did not meet the inclusion criteria due to having already completed the Research module in 2023. Therefore, the final sample size was eight participants. In qualitative research, this is an adequate sample size as Leedy and Ormrod (2020) suggest a typical sample size of a minimum of five individuals for

phenomenological research. The sample can be generally small but not so small that saturation becomes difficult to achieve (Omona, 2013; Saunders et al., 2018).

3.5 Sample Setting

This study collected data from SLP students in their final/fourth year of study. Data was collected online and paper-based questionnaires.

3.6 Participant Inclusion Criteria

Fourth-year SLP male or female adult (18+) students enrolled in the Research Practice (CPSL 447) module in 2024.

3.7 Participant Exclusion Criteria

Speech-language pathology undergraduate students who are enrolled but did not complete the Research Practice (CPSL 447) or had previously completed the CPSL 447 research module.

3.8 Data Collection Method

Data were collected using semi-structured questionnaires, which were selected due to their flexibility. The non-linear nature of the questions or probes allowed research participants to specifically describe how, why, or what they were thinking, feeling, and experiencing (Soratto et al., 2020). Participants were asked to complete two different but related in-depth, semi-structured questionnaires with open-ended questions, each at a different point in their research projects. One at the start of their research journey in May 2024 (prior to data collection) and the other toward the end of their research journey (post thesis submission) in November 2024. A semi-structured questionnaire is much like other qualitative methods, i.e., it contains experiences, opinions, and memories (Eckerdal & Hagstrom, 2017).

Using self-administered questionnaires with less complex instructions and varied questioning styles could influence answers and eliminate interviewer effects such as bias (Bryman et al., 2019; Mathers et al., 2009). This was particularly important as the researchers in this study were familiar with the participants, who are students at the university, where they are lecturers. Self-administered questionnaires also proved to be more convenient for the respondents (Bryman et al., 2019) who, in this case, were busy final-year students.

Eight female speech-language pathology students consented to participate in the study. The semi-structured questionnaires were completed via the online platform Google Forms. The participants remained confidential and were given a number as identification to reduce researcher bias. The researchers engaged with the students who consented and their research supervisors to remind them about the questionnaire and the stages at which they needed to fill in the questionnaires.

Table 1: Stages of Research Methodology

Stage	Description
Study Design & Ethics Approval	- Phenomenological design chosen - Ethics clearance obtained (BREC)
Participant Recruitment	- Purposive sampling of 4th-year SLP students - Voluntary informed consent obtained
Data Collection	- Two semi-structured questionnaires - Before and after project completion
Data Management	- Anonymization & numbering of responses - Secure storage on university cloud
Data Analysis	- Thematic analysis (Creswell, 2012) - Coding of themes and interpretation
Interpretation & Reporting	- Findings integrated with literature - Themes presented in results

3.9 Data Collection Tool Development

Two open-ended questionnaires were the main instruments used in this study (Appendix A). The researchers developed a list of the study's major research topics, outlined the key areas of knowledge required to answer these questions and developed questions within these critical categories, tailoring them to certain types of respondents. The questionnaires followed themes found in the literature and consisted of ten questions (questionnaire one) and eleven questions (questionnaire two). Open-ended questions that would enable students to express their ideas, experiences, and insights were created, and the researchers avoided asking leading or biased questions and instead aimed to generate rich, thorough responses (Creswell & Poth, 2018).

In addition to the primary questions, the researchers created probes or follow-up questions to investigate specific themes or clarify participants' responses (Patton, 2015). This additional style of questioning assisted in collecting more nuanced data and identifying underlying themes or patterns, ensuring clarity and appropriateness (Creswell & Poth, 2018). Language, cultural sensitivity, and readability were considered to ensure that all the instruments were usable and intelligible by all participants (Yin, 2018). The questions were reviewed by the pilot study participant and feedback received. The questionnaires included components such as biographical information (including date, year of study, age, gender, race and duration in the SLP program) and easy-to-follow participant instructions so that standard procedure was ensured. A gratitude statement was attached to the end of the questionnaire to acknowledge the participant's time during the questionnaire (Creswell, 2012).

3.10 Pilot Study

The pilot study was done to trial the method, data collection instrument and analysis method. The pilot study included one participant. The first potential participant who responded to the researchers' request for participation and met the inclusion criteria was included in the pilot study. Since no changes to the data collection tool and methods occurred, the data collected from the pilot study were included in the main study as there were no implications on the

standardization of the data collection. Following this, no changes were deemed necessary and therefore the results from the pilot study were included in the main study.

3.11 Data Analysis

Data was analyzed using thematic analysis (Creswell, 2012). Organizing data collected from a questionnaire is critical and must be systematic, as questionnaires generally yield vast data (Creswell, 2012). The researchers conducted a preliminary, exploratory analysis. This allowed the researchers to develop an idea of the data collected by writing concepts, short phrases, and ideas in the margins of the transcripts (in this case, questionnaires) (Creswell, 2012). Coding refers to using labels to highlight different themes in the data (Yin, 2018). The codes followed themes found in the data (Creswell, 2012). The process of coding allowed vital information to be highlighted and information that lacked evidence to be incorporated (Creswell, 2012). The themes identified during the coding process guided the findings (Creswell, 2012).

The final step in data analysis was interpretation (Creswell, 2012), which refers to the understanding gained from the data (Creswell, 2012) and the lessons that could be learned from it. It is the meaning that is derived from a comparison of the findings of the research to the literature and theories (Creswell, 2012). The interpretation also acknowledged contradictory research (if any) and provided possible explanations for the differences in the findings (Yin, 2018).

3.12 Data Management

For privacy reasons, only the researchers/authors had access to the data, which are stored on the university cloud for a period of five years before disposal.

3.13 Ethical Considerations

The data collection procedure included the researchers obtaining ethical clearance from the Biomedical Research Ethics Committee (BREC) with reference number BREC/00006683/2024. A letter of support was provided by the academic leader of the Discipline of SLP at the university, thereafter, permission was granted from the university's Registrar. A class list for the Research Practice module was obtained, and information documents were sent to all registered students. Participants were only sent the questionnaire to complete once permission was granted. Two detailed questionnaires were sent to students who consented to participate. Participants were assured of the confidentiality of their identity by being assigned a participant number.

3.14 Trustworthiness

The issues of dependability, credibility, transferability, and confirmability were considered in order to ensure the trustworthiness of the data. Credibility was ensured by two researchers reading the responses and participants having the opportunity to read their responses before submitting the questionnaire. Dependability and confirmability were ensured using an audit trail (Tracy, 2010), i.e. a record of the steps taken from the start to the end of the research project. A thick description was used to ensure transferability; this refers to not only describing the experiences of the students but the context as well (Tracy, 2010)

4. Results

A detailed analysis of the data revealed eight main themes, including group work in undergraduate research projects, the role of the supervisor, barriers and facilitators to the research process, pursuing postgraduate studies, suggestions for the future, feelings toward research and understanding the importance of research. The results are also presented based on the phase of the research study, which is referred to as pre-data collection (before the students collected the data for their research project) and the post-data collection which was at the end of their research journey. The results for each of these themes and the participant characteristics are presented below.

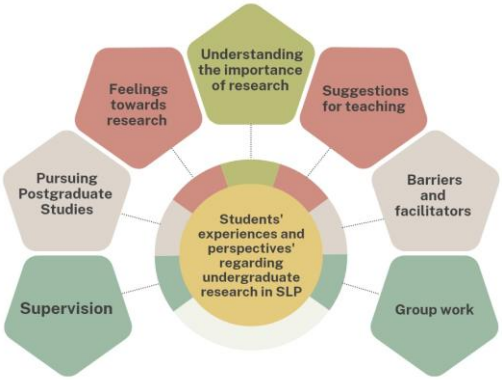

Figure 2: Themes that emerged from the data

4.1 Participant Characteristics

Participants were five Black and three Indian 20- to 23-year-old final year Research Practice students. All students have completed the pre-requisite Applied Research Methodology module (HLSC 340), which is offered in their third year of study. All students within the speech-language therapy program were required to complete their research projects in allocated groups. During round one of data collection students were awaiting ethical clearance for their studies, gatekeeper permission, had received full ethical clearance or engaged in writing the first chapter of their research report. In round two of data collection, students had either just completed their research project or had completed and submitted for external examination.

Table 2: Participant characteristics

Participant	Age	Race	Gender	Year attended HLSC 340	Stage in research (Round One)	Stage in research (Round Two)
P1	21	SA Indian	F	2023	Draft 1, chapter 1	Project completed and submitted for external examination.
P2	22	SA Indian	F	2023	Received full ethical clearance and submitted interview schedule for expert review	Project completed and submitted for external examination.
P3	21	Black	F	2023	Seeking ethical clearance	Project completed.
P4	23	Black	F	2023	Seeking ethical clearance	Project completed.
P5	20	Black	F	2023	Just received ethical clearance, to commence data collection	Project completed and submitted for external examination.
P6	22	SA Indian	F	2023	Waiting for approval from the South African National Health Research Database	Project completed.
P7	23	Black	F	2023	Seeking gatekeeper permission	Project completed.
P8	21	Black	F	2023	Seeking ethical clearance	Project completed and submitted for external examination

4.2 Group Work in Undergraduate Research Projects

In the current undergraduate research module, students complete their research projects in groups. Six participants had three member groups with two participants being part of two member groups. Pre-data collection, P1 acknowledged that effective communication and collaboration between group members would be important in the research process. P3 felt that being able to

choose your own research group would be of benefit. Interestingly, P3 would report a positive group experience at the end of the research process.

At the end of their research journeys, students had a lot more to report on.three students (P1, P7 and P3) reported a positive experience of group work. Positive group work enhanced collaboration and diversity of perspective among group members (P1). Two participants (P3 and P7) emphasized the importance of equal contribution to the workload.

> *P7: "Positive, we contributed equally, and we allowed each other to showcase the skills we have during the proposal, creating presentations, forming arguments to presenting the study."*

On the contrary, four students (P2, P4, P5 and P8) described their group work experience as a mix of both negative and positive experiences, which P5 referred to as a balanced experience or "equilibrium." Interestingly, P2 felt that being left to head the research project, whilst difficult, assisted in her personal development.

> *P2: "My group work experience was a mix of positive and challenging moments. While I had to take on a larger role at times to ensure the work was through, it helped me develop leadership and organizational skills."*

The negative experiences with group work stemmed from challenges such as a lack of teamwork, disengagement and lack of interest in the research project by group members (P6 and P4) and differences in opinions, which led to disruptions in the flow of work and the need for negotiations (P1).

> *P6: "Negative. My group members had a lack of contribution to tasks, thus leaving me to complete a majority of all the work. This led to resentment and undue stress on myself. They were disinterested and disengaged with the task. Additionally, group assessments may fail to reflect individual effort, leading to dissatisfaction among those who contributed significantly more."*

4.3 The Role of the Supervisor

The most prominent role of the supervisor was providing consistent guidance throughout the research process. Supervisors assumed the role of mentors, using their expertise and experience from supervising past research projects to guide the group effectively. Pre-data collection students felt that the supervisor offered valuable, constructive feedback, which helped the students focus on what was relevant to the research. Additionally, supervisors addressed questions and clarified student concerns. One student (P7) acknowledged the importance of the supervisor-student relationship and how this may impact the research process.

> *P1: "Supervisors are there to guide us during the research process. They provide us with valuable feedback as they have had previous experience in research. They give us suggestions on how we can improve the quality of our work. They also offer motivation and support during this time."*

> *P7: "I feel that I've not built a strong enough relationship with my supervisor to allow her to guide me during this research study and I am*

hoping that this semester will be different because I will be closer to her."

Post-research, in Round Two, students felt that frequent meetings with the supervisor (P3), open communication (P4) and having more than one supervisor were key factors that positively influenced their research experience. Good communication with the supervisor was reported to facilitate group work (P4). One participant (P7) voiced concerns about building a good relationship with her supervisor and felt that this relationship was essential to a successful research process. One participant (P3) reported that although supervisors are meant to guide you throughout the research process, some do not provide adequate assistance and expect students to know how to do research.

P3: "I know that supervisors should be telling and guiding us during research process, but other supervisors rarely do that. They just expect you to know."

Only one group had the privilege of having more than one supervisor. This group reported that this enhanced the outcome and support that they received (P7). Their experience highlighted the advantages of collaborative supervision, particularly in addressing challenges related to continuous availability when one of the supervisors is unavailable.

P7: "In having two supervisors, they both have amazing skills, so I had an advantage in learning research skills from two people, and when one was not available at that time, I knew the other one had our back."

4.4 Barriers and Facilitators to the Research Process

Students faced both barriers and facilitators to the research process. Pre-data collection, students felt that maintaining a good relationship with their supervisor and managing their time effectively throughout the year would facilitate the research process.

P4: "A new personal timetable where I specifically allocate time and day for research will help me."

Post-data collection, students considered time management as both a barrier and a facilitator. Four participants (P3-P5 and P7) considered keeping a strict schedule and taking responsibility for their work as a facilitator to completing their research timeously, seven participants (P1, P3, P4, P7 and P8) considered their busy schedules and high workload as a cause for anxiety and a hindrance. Three students viewed the good relationships that they shared with their supervisors as facilitators (P3, P4, and P7), one student (P6) faced difficulties working in a group and considered specific members of their group as a barrier. Students also considered external factors such as familial support (P2) and access to technology (P8) as facilitators.

P2: "The support from my family and supervisor, access to relevant literature and the development of time management and critical thinking skills all worked in my favor."

4.5 Pursuing Postgraduate Studies

Pre-data collection, five students (P1-P4 and P7) reported that they would consider postgraduate studies. Increasing awareness and adding to the field were cited as reasons. One student (P3) would consider it only if she could choose her own supervisor. Another student (P5) felt that she had to do more research about the feasibility of postgraduate studies before deciding. She was worried that studying further would make her over-qualified, thus making employment difficult; financial responsibility and coping with another degree were also mentioned. P6 would not consider postgraduate studies as she felt that there is no difference in salary and would prefer to work and gain experience.

> *P5: "I think I still need to do more research on that myself because there are a lot of myths and theories that obtaining masters and PhDs make you over qualified and unemployable but also considering how hard my years of doing the degree, I am unsure if I will be able to cope with continuing also the matter of funding is also one of my biggest concerns and also I want to be able to provide for my family and if a masters and PhD do not guarantee me employment, it's hard to consider since I am my family's last hope."*

After completing the research process, there were mixed reactions to plans to pursue postgraduate research. Five participants (P1, P2, P4, P6 and P7) indicated that their thoughts regarding postgraduate studies had evolved since the beginning of the research project. They initially had positive thoughts about postgraduate studies, and over the year these thoughts were enhanced with their experiences in research.

> *P7: "Yes, honestly, I think it was my supervisors who made me change my mind. They built my confidence in research, and I fell in love with it."*

Three participants (P3, P5 and P8) maintained their initial stance on not wanting to pursue postgraduate studies, citing stress levels, financial concerns and the perception of being overqualified for prospective job opportunities by having a postgraduate degree. Whilst their personal feelings regarding research evolved positively, the barriers to pursuing postgraduate studies, i.e., finances, were still a concern.

> *P5: "I still feel the same in terms of being overqualified and providing for my family. But I would love to do post-grad, it's just that finances and responsibilities are not on my side."*

4.6 Suggestions for the Future

Pre data collection, students three students (P2, P3 and P6) suggested additional training in searching for and critically reviewing literature and academic writing. One student (P3) suggested a module that will prepare students for research should be provided. However, there is a current module (HLSC 340) in the third year that focuses on this. Further, P3 suggested being able to select their own research group members as opposed to the policy in the Discipline where students are systematically grouped based on a range of academic abilities to provide a balance of skills within a group.

> *P3: "For students to choose their own group members. Having a research (semester) module where we will have to learn what research is and what to do when you are doing your research, before having to do research proposals and starting with actual research, to prepare us better."*

Post data collection, students had many more suggestions. In terms of student supervision, students again recommended that all supervisors provide the same level of support. Their observation, as previously mentioned, had been that some supervisors expect a high level of independence from their students, and they feel differently.

> *P4:" I know that supervisors should be telling and guiding us during the research process, but other supervisors rarely do that. they just expect you to know."*

Students also again mentioned that it was difficult to manage their time between clinical work and research and suggested a block of time on the timetable to allocate for research.

> *P5: "It's quite hard juggling everything concerning research whilst also attending clinics."*

A theory module (HLSC 340) on research methodology precedes the final year Research Practice module. When students were asked what suggestions, they would have for the module that could improve students' experiences and preparation for the research process, four students (P1, P2, P3 and P6) noted that the module had provided them with improved understanding or knowledge in preparation for their research study or the research process. Two participants (P5 and P7) stated that it had given them a pre-description or foundation of the research process and what would be expected of them throughout the year/module, whereas two participants (P4 and P8) indicated that they felt the module failed to prepare them for their research study and the research process. Students found that they would benefit more from more practical application tasks

> *P4: "Not much, (help from the HLSC 340 module) because some information I had to find for myself."*

4.7 Feelings Toward Research

At round one of data collection and the beginning of the research process, seven participants (P1, P3, P4, P5, P6, P7 and P8) felt anxious and overwhelmed as research was time-consuming and they had to manage their schedules with other academic and clinical commitments. Some (P1, P3, P4 and P5) described feelings of pressure due to the duration of the research project being only a year and not having sufficient time.

> *P1: "Yes. It is very overwhelming. Research is very time-consuming, especially having to sit in front of your laptop for hours on end trying to find information that is relevant to your topic. It is difficult to keep up with research while also having other clinical modules to complete as well. There are always things that are due (e.g., day notes, assessment/progress reports, therapy planning), each with its own*

deadline. It does add a lot of pressure as well since we have to complete this research within the year to be able to graduate next year."

Students' anxiety was also related to research-related aspects such as scientific writing (P7), the lengthy process of awaiting gatekeeper approval, achieving their sample size requirements(P4), academic assessments related to the research module (research oral defense), and presenting their study in a public forum at the Discipline's Annual Research Day (P5).

P5: "Research oral because I feel as if it will threaten my whole entire existence… Research Day because I am not a fan of public speaking."

Despite their anxiety, students were eager to pursue their studies and contribute to research in the field of speech-language pathology. All eight participants found their research topic to be enjoyable and significant. Two participants (P4 and P5) reported that they understood the significance of their topic more as the year progressed. One participant (P1) felt that conducting research in their specific topic was rewarding.

P7: "I feel that my group and I chose quite an interesting topic, and I like that our supervisor completely gave us the chance to choose our own topic, and I am hopeful that it will yield interesting results."

At the end of the process, many students still felt very strongly about the time pressure and still experienced some anxiety, whereas others had more positive views after their research journey.

P4: "I am in between. I enjoyed and loved the research process, but at the same time, it feels overwhelming at times."

Students found the data collection process to be a very positive learning experience as they were able to interact with new people as well as strengthen their team, explore their research topic and enhance their research skills. This ignited a passion for research in P8.

P6: "I enjoyed it. It was nice to interact and meet new people, as well as learn about the different roles and levels of DOH (The Department of Health). *It also felt rewarding to make a difference in my field of study.*"
P8 - "I have fallen in love with research. I think my topic played a part in that. I really, really like research."

All students' views at the end of the module displayed growth and positivity from their experiential learning throughout the year. They expressed a sense of pride in their work and learned about the research process, and their confidence had evidently increased. Along with developing their research skills such as understanding methodologies, etc., participants reported developing soft skills such as resilience, leadership and organizational skills, responsibility, adaptability and confidence. The understanding of their ethical responsibility toward research participants and broader clinical implications are evident in P1's statement below.

P6 - "It makes me feel proud of the work I've done. Especially given the challenges I faced along the way. Completing a research project, no matter how complex, is an achievement in itself. It's rewarding to know

> *that I've contributed to a specific area of knowledge, even if it's in a small but meaningful way.*"
>
> *P1 - "I feel more confident and passionate about my topic as I've realized its significance in clinical practice and caregiver involvement.*"

4.8 Students' Perceptions Regarding the Importance of Research

Students had similar responses when initially asked about the importance of research in round one of data collection. Four participants (P1, P2, P4 and P6) reported that research is important as it assists with evidence-based practice in assessment and treatment. Expanding the knowledge base of the field was also mentioned as a reason by four participants (P2, P3, P5, P8). Spreading awareness regarding the field and novel approaches in service provision were also cited as reasons for research (P7).

> *P4: "It allows clinicians to provide evidence-based intervention that will be effective for the clients and to be updated with current research and effective therapy approaches.*"

Post data collection, a majority of the participants' perspectives changed positively over time and as they engaged in the research process (P1-P7). The participants still mainly understood and described the importance of research through knowledge building (P1-P3 and P6), evidence-based practice (P2, P4, P6 and P7) and improved patient outcomes (P1, P2 and P6). One participant (P3) mentioned the important role of research in creating awareness for the field of SLP, and another participant (P5) stated that there are currently under-researched areas within SLP where meaningful contributions can be made.

> *P3 - "Yes, at first I did not like research but over time as I did it I fell in love with just exploring these study objectives and investigating a phenomenon.*"

Three students admitted that they initially had negative feelings toward research, such as dislike (P3), uncertainty (P2), and merely viewing it as a compulsory task (P6). All students, however, stated that their attitudes/feelings/thoughts had positively changed from the beginning to the end of the research process (P1-P8). Three students (P1, P2 and P7) stated that their confidence in and passion for research had grown through the research process. Two students (P1 and P2) reported that they had developed a greater appreciation for the importance and value of research. Another two (P3 and P6) students mentioned that they later enjoyed it and felt proud that they were involved in research. One student mentioned that she would now consider postgraduate studies (P7), and another described how she now understood the research process better retrospectively after completing the research project (P5).

> *P2: "Yes, my attitudes, thoughts and feelings have definitely changed throughout the research process. Initially, I felt a bit uncertain but as I progressed, I became more confident and passionate about the topic. My understanding deepened, and I developed a greater appreciation for the importance of research. Overall, it's been a rewarding journey that has sparked both personal and professional growth.*"

5. Discussion

The findings of this study have aligned with literature on undergraduate research engagement, emphasizing both the benefits and challenges that students face. Research participation has been identified as a key factor in academic and professional growth, fostering critical thinking, analytical skills, and evidence-based practice (Gunnels et al., 2024; Linn et al., 2015). However, the challenges reported by students in this study—such as inadequate supervision, group work struggles, and balancing research with clinical responsibilities—are consistent with barriers identified in various previous studies (Kumar et al., 2019; Mutangadura et al., 2024; Saidi, 2024).

Akey theme that emerged from the results was group work which elicited mixed responses from students. During the pre-data collection phase, students expressed the importance of communication and collaboration. Collaboration is widely acknowledged as an essential skill in research and professional settings (Tenny et al., 2022), but it also presents challenges related to unequal workload distribution and differences in work ethic, as reported by some participants post-data collection. Literature suggests that structured team-based research projects can enhance learning outcomes when roles and responsibilities are clearly defined (Soratto et al., 2020).

Implementing structured frameworks for team research may alleviate some of the frustrations experienced by students. Time constraints and workload management were also prominent concerns. Many students struggle to balance their research projects with clinical and academic commitments, which is a common challenge in healthcare-related disciplines (Erickson et al., 2022; Yang et al., 2022). Previous studies recommend structured research training within curricula to better prepare students for the demands of research (Erdogan & Bauer, 2024).

Despite these challenges, the study found that students' attitudes toward research evolved positively over time. Initially, many viewed research as overwhelming, but by the end of the project, several participants expressed a newfound appreciation for the research process and its relevance to clinical practice. This shift underscores the importance of experiential learning in creating research interest (Smith & Lee, 2024). Moreover, mentorship played a crucial role in shaping students' long-term research interests, with some identifying their supervisors as key motivators for considering postgraduate studies (Amani et al., 2022).

One of the most significant themes in the study was the role of supervision. During the pre-data collection, students reported understanding the role and importance of the supervisor. The literature highlights that strong mentorship and research guidance positively influence students' engagement and academic performance (Cooper et al., 2022; Estrada et al., 2018). However, in under-resourced environments, supervisors are often overburdened, limiting the level of individual support they can provide (Sharma et al., 2024). This was evident in the responses of participants who during the second round of data collection felt

that some supervisors provided little to no guidance, while others benefited from more hands-on mentorship. The presence of multiple supervisors, as noted by some participants, was an effective strategy to mitigate the impact of supervision limitations or workload burden in single supervisors. Factors such as supervisory experience and the teaching style of individual supervisors must also be taken into account.

Postgraduate studies were initially considered by five participants; at the end of their research journeys, these students expressed that their research experiences enhanced their motivation to pursue postgraduate studies. Three participants who did not consider postgraduate studies due to financial and family responsibilities indicated that whilst their view on research had improved and they would like to pursue it, the barriers to postgraduate studies remain. Funding is a significant challenge faced by both undergraduate and postgraduate students in South Africa (Khuluvhe & Netshifhefhe, 2021). This indicates a need for support structures in place for students who may wish to study further but who are hindered by their circumstances.

The university does offer fee-remission or NSFAS for full-time master's students (full-time refers to students who are able to dedicate forty hours a week to their studies) (UKZN, 2025). There is a need to educate undergraduate students and supervisors about the support She also felt that she had to support her family before considering further study. offered to postgraduate students at the institution to enable students to make informed decisions (Namakula & Ndaba, 2023). Full-time study may not be an option for students who need to provide for their families. Bradbury (2023) noted that the historical inequality of South Africa impacts greatly on whether a student has the luxury to pursue postgraduate studies due to their background. A number of young graduates are first generation students, which brings the pressure of completing their qualification and giving back to their families (Mkhize, 2024) In addition, a post graduate qualification is not a job requirement for SLPs in South Africa.

Students had many suggestions for how the research process can be improved. One suggested a module to introduce students to research, and another student suggested a slot for research in the timetable. Interestingly, both of these are already implemented. This indicates that whilst these are offered, they do not provide the assistance that all students need. Particularly the HLSC 340 module, which is a module offered in third year to introduce students to research. Whilst six students found this module helpful, two students felt that more practical tasks would have better prepared them.

Practical methods of teaching research have been found to be useful (Matos et al., 2023). There is a need to orientate students to the assistance available to them and how to utilize this fully, e.g., the space in the timetable and encouraging attendance in the theoretical module. Lecturers should re-evaluate the theoretical research module offered to see how this can be improved to better facilitate student understanding. It is important for universities to acknowledge the scope of support services required by students (Barnes et al., 2024).

Students being able to choose their group members as well as a change in supervision style were also suggestions made by students. Students choosing their own group members could create biases with regard to academic ability and social preferences, leading to the isolation of some students. It must be noted that certain students felt that they carried the majority of the research load due to the way in which the groups were structured. Support structures should be in place for both students who are carrying the research load and those who are not coping and relying on group members to complete their work.

Regarding suggestions for supervision, students felt that not all supervisors worked in the same manner with some requiring more independence from students than others. There is a need to standardize supervision across research groups with all supervisors agreeing on the level of support that should be provided to undergraduate research groups. Oludaru and Akande (2024) recommend that supervisor training programs include academic research groups, which will help to foster supervisor-student relationships.

It was noted that student perspectives evolved throughout the research experience. The evolution of their perspectives was impacted by their personal growth, the support available to them and contextual challenges. Students initially felt a great amount of anxiety regarding research citing time pressures and unfamiliar processes such as data collection as the prominent cause for anxiety. At the end of their research journey, students still found time management as the most difficult aspect of research but felt positive regarding the journey overall.

Students felt that research had helped them grow personally via the development of soft skills and professionally by gaining proficiency in differing areas of research. Students felt pride and a sense of accomplishment in their work, as well as a newfound understanding of the purpose of research. Supervisors and mentors should provide guidance throughout the research process to reduce student anxiety, particularly at the start of their research project.

Ultimately, the findings emphasize the need for institutions to enhance research support structures at the undergraduate and postgraduate levels. Strengthening supervisor programs, integrating research training into earlier modules, and implementing structured group work frameworks can improve students' research experiences and encourage further academic pursuits. The theoretical and conceptual frameworks adopted in this study are not only descriptive but also solution oriented.

Kolb's Experiential Learning Theory (ELT), provides a practical, cyclical model of learning that reflects how students engage with research tasks, reflect on them, conceptualize their experiences, and experiment with new strategies. This cycle explains not only how learning happens, but also suggests how to design better research experiences, through structured reflection, practical scaffolding, and peer-supported feedback opportunities. Bandura's Self-Efficacy Theory serves as

a predictive and explanatory tool to understand how belief in one's research abilities influences behavior. By identifying key moments where students' self-efficacy is challenged (e.g., during ethics approval or data collection), this theory offers intervention points (e.g., improved supervision and peer mentoring) to enhance motivation and persistence in the research process.

Undergraduate Research Engagement Models (Linn et al., 2015; Gunnels et al., 2024) propose institutional strategies (e.g., mentorship access, project autonomy, skill-building modules) that have been empirically shown to increase student engagement and retention in research. These models align with the findings in this study and directly inform recommendations such as curriculum redesign, equitable supervisor training, and early exposure to research literacy.

The Conceptual Model of Mentorship in Higher Education highlights how structured, consistent mentorship can transform perceived research difficulty into a developmental opportunity. This study shows that when students feel supported, they are more likely to persist and even consider postgraduate studies, underscoring the framework's prescriptive potentials. The frameworks chosen are actionable: they do not merely help interpret student challenges; they guide curriculum planners, academic coordinators, and faculty mentors toward evidence-based interventions that can transform research engagement into a positive, growth-oriented experience. Together, these models provide both a diagnostic lens (understanding challenges) and a roadmap (designing solutions), making them theoretically and practically strong enough to underpin improvements in undergraduate research training.

6. Conclusion

This study aims to explore undergraduate students' experiences and perspectives of research in the field of speech-language pathology. The results provide valuable insights and illustrate how students' perspectives evolved with experience. While students recognize the importance of research in advancing evidence-based clinical practice, they face significant challenges related to supervision, time management, and group work dynamics. The findings highlight the need for institutional reforms to better support students through mentorship programs, structured research training, and optimized scheduling of research components.

A notable outcome of the study is the positive shift in students' attitudes toward research, with some developing interest in postgraduate studies. Addressing the barriers identified in this study may further enhance students' engagement and foster a stronger research culture within the SLP field in SA. Future studies should explore these themes across diverse academic institutions to develop broader recommendations for improving undergraduate research experiences in LMIC contexts. By implementing targeted interventions, institutions can create a more supportive environment for undergraduate research, ultimately contributing to the growth of the academic and clinical research landscape in speech-language pathology.

6.1 Limitations

A limitation of the current study is that the sample size and population included were small and only included the perceptions of students from a single university and geographical area. All participants were young (mean age 21.5), Black or South African Indian females (Table 1). Thus, the sample was limited regarding race, ethnicity, culture and exposure to only the research module. The limitations of the participants' demographics may therefore influence the knowledge and perceptions reported, and it is recommended that future research should be conducted on a sample with a greater variation of students. It may, however, also be advantageous that the cohort was limited to the university's demographics as the findings gathered truly reflect the unique perceptions of students attending this university and residing in this specific geographical area.

6.2 Implications

Improved reflection on the perceptions and experiences of a group undergraduate research project, as well as increased consideration of postgraduate studies in the field of speech-language pathology, were noted in this study. The findings of this study have implications for undergraduate programs when planning research modules and group projects. Students with financial challenges can be supported by orientating them to opportunities such as fee remission and bursaries that are available. his may increase the number of students pursuing a postgraduate degree in speech-language pathology. Increased throughput of postgraduate students pursuing research within the field will improve research output and strengthen evidence-based practice in clinical care in public and private health sectors. These findings will be shared with the teaching and learning and research departments at the University.

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