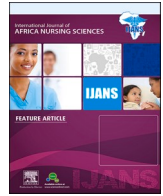


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Factors influencing postgraduate nursing students' study progress: A scoping review

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ABSTRACT

Background: Universally, postgraduate nursing students' study progress is particularly concerning as this impacts completion within a prescribed minimum time.

Purpose: To identify and map out the breadth of evidence available on the factors influencing postgraduate nursing students' study progress.

Methods: A scoping review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for scoping reviews. Electronic databases and search engines such as ERIC, PubMed, CINAHL, MEDLINE (EBSCO), Google, and Google scholar were used. The review focused on peer-reviewed and grey literature from 2011 to 2021. Search terms were related to the factors influencing postgraduate nursing students' study progress in higher education, home, and workplace settings.

Results: The search identified 1106 records from peer-reviewed and grey literature. Records that met the inclusion criteria were 26. Evidence from the review revealed six main themes that influenced the postgraduate nursing students' study progress: supervisory and peer support, work and life, funding support, research writing, geographical factors, and the structure of the postgraduate programme.

Conclusion: Most literature showed that postgraduate nursing students struggled to balance work and studies therefore, employers should aim at job redesigning to ensure the working postgraduate student has time to study. Funding models that include the introduction of a student loan scheme with low interest rates payable upon graduation using revenue services may also be adopted. Postgraduate students with full-cost study funding progress better than those with no or partial-cost funding. Geographical factors were also reported to study progress in both developed and developing countries.

1. Introduction

The slow progress of postgraduate students' study progress in terms of completion within the minimum prescribed time remains a concern at higher education institutions (Havenga & Sengane, 2018). This has resulted in a shortage of nurses with higher educational qualifications who may improve the profession's status and are more likely to demonstrate better leadership qualities that empower them to challenge poor practices than those who do not have a postgraduate qualification (Botha, 2017; Clark et al., 2015). Additionally, the benefit of a postgraduate degree for nurses is that it improves their analytical thinking and decision-making skills. Postgraduate students in this review refer to Master's and PhD (enrolled full-time and part-time), Honours, and Postgraduate Diploma students.

According to Allum et al. (2014), higher education institutions in

Canada and the United States of America (USA) face several problems, including slow study progress and mental wellness concerns among postgraduate students. Cassuto (2015) concurs with Allum et al. (2014) by stating that higher education institutions should focus on ways to assist postgraduate students (nursing included) with mental health support, funding for studies and research writing which are some of the factors that may contribute to slow study progress. In the USA, high attrition rates of 47–50 % have been reported due to postgraduate students' unpreparedness for studies and the demanding curriculum, despite intensified enrolments of postgraduate students (Xu & Grant, 2018), thus negatively impacting study progress and throughput. Meanwhile, in the Sub-Saharan region countries such as Nigeria, an attrition rate of 10–20 % was found to be due to the imbalance of work and life for students who were studying part-time (Onwe, 2018).

In South Africa, one of the proposed critical outcomes of the National

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Plan for Higher Education (NPHE) is to increase the production of postgraduate students (Council of Higher Education, 2018). This outcome was developed when high dropout rates due to various factors that included non-progression, lack of funding for studies, and poor student-supervisor relationships at the postgraduate level were identified as an area of major concern. In this regard, the National Development Plan (NDP) intends to increase the number of postgraduate students' enrolments by 25 % by 2030 (NDP, 2011). For this objective to be achieved, there is a need for a broad base of postgraduate students who would then progress and proceed to doctoral studies. However, this is not the case, as currently, South Africa is lagging behind other countries regarding the production of doctoral students. South Africa's inability to produce enough postgraduate students to proceed to doctoral graduates who can, at best, help to build the knowledge base of the economy or, at worst, simply replace the existing cohort of academics in the higher education system, has become a huge challenge (Zewotir et al., 2015). In 2010 dropout rates ranged from 30 to 67 % for master's degrees and 50 to 68 % for doctoral degrees for some of the biggest universities in South Africa due to factors that include students' unpreparedness for the academic challenges and lack of funding for studies (Styger, van Vuuren & Heymans, 2015; Kritzinger & Looock, 2012). These statistics are high and require urgent investigation by higher education institutions. Nonetheless, the Staffing South Africa's universities Framework argues that improved student: staff ratios may reduce dropout rates and increase the quality of education and throughput of postgraduate students (DHET, 2015). Therefore, the factors that influence postgraduate students' study progress need to be triangulated to develop recommendations to improve the progress of postgraduate students in their studies.

Limited literature has been reported on how to improve the progress of postgraduate nursing students' studies (Roets & Botma, 2012; Hadi & Muhammad, 2019; Ekpoh, 2016; Mattsson, 2016; Botha, 2017). Given the various circumstances, methodologies, and outcomes of these studies, it is necessary to synthesise the literature from the last decade to obtain information regarding the factors influencing postgraduate nursing students' study progress in research. The synthesis of literature from these studies may assist relevant stakeholders in developing policies and implementing teaching and learning strategies to assist postgraduate nursing students in progressing and completing their studies within the prescribed time. Hence, the study aimed to identify and map out the breadth of evidence available on the factors that influence postgraduate nursing students' study progress.

However, it is also unknown whether the factors that influence postgraduate nursing students in developing countries are the same as those in countries with advanced economies.

2. Material and methods

The review was guided by Arksey and O'Malley's (2005) methodological framework, further enhanced by the work of Levac, Colquhoun, and O'Brien (Arksey & O'Malley, 2005; Levac et al., 2010), which has the following stages: (1) identifying the research question, (2) identifying relevant studies (3) study selection (4) charting the data (5) collating, summarising and reporting the results. The framework was chosen because it is inclusive, flexible, iterative in nature, and does not adhere to strict methodological rules nor require assessment of the quality of evidence (Arksey & O'Malley, 2005; McGaghie, 2015). The Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR) flow diagram was used to report how the articles found from the search were sorted.

2.1. Stage 1: Identifying the research question

The main objective of the review was to identify the factors that influence postgraduate nursing students' study progress at higher education institutions. The broad research question for the review was

“What are the factors that influence postgraduate nursing students' study progress?”.

2.2. Stage 2: Identifying relevant studies

A literature search was conducted in multiple electronic databases in ERIC, PubMed, CINAHL, MEDLINE (EBSCO), Google, and Google scholar from 2011 to 2021 to identify published and grey literature. Grey literature was sought from OpenGey.eu and Greylit.org websites. The period was selected because the number of scoping reviews on this topic steadily increased from 2011, allowing an adequate pool of literature to be reviewed over the 10 years (2011–2021). The librarian assisted with the literature search. MeSh terms such as postgraduate, students, university, education, nursing, diploma, progress, Master's, PhD, doctoral and Honours were used. The following search terms were used in various combinations based on the Boolean phrases to search for published and grey literature that met the inclusion criteria for the review: “Master of Nursing” OR “PhD nursing students” OR “Postgraduate students” OR Nursing students OR “Honours” OR “Postgraduate diploma”; “Postgraduate Programme” OR “Postgraduate research”; “Higher education institutions” OR “Universities” OR “Home” OR “Workplace” AND “Study progress” AND “Factors influencing” AND “Enrolled part-time” AND “Enrolled full-time”.

The study used the population, concept, and context (PCC) framework to identify the main concepts in the review question and inform the search strategy. Table 1 below illustrates the PCC framework.

2.3. Stage 3: Study selection

2.3.1. Inclusion criteria

Studies published between 2011 and 2021 were included in the review. The publication range was selected to have an in-depth knowledge of the factors influencing postgraduate nursing students' study progress in research in the last decade. These factors may still be relevant in the current postgraduate study environment. Published scholarly, peer-reviewed, full-text, and grey literature in higher education institutions, home, and workplace settings were included in the study. Literature published or unpublished written in English was included in the review.

2.3.2. Exclusion criteria

Studies were excluded if they were: non-English, published before 2011, evidence not related to the study progress of postgraduate nursing students and literature not associated with postgraduate nursing students (PhD, Master's, Honours and Postgraduate Diploma).

Both authors searched for literature in the relevant databases. The authors then independently analysed text words contained in the title and abstract before exporting them to EndNote (to eliminate duplicates). The librarian assisted with planning the search strategy. In case of disagreements, a third reviewer (seasoned researcher specialising in nursing education) was consulted to make the final decision. Fig. 1

Table 1
The Population, Concept, and Context framework.

PCC Element	Description
Population	The study included postgraduate nursing students (Master's, PhD – enrolled full-time and part-time), Honours and postgraduate diploma).
Concept	Study progress is the gradual development of the postgraduate student in research from registration until completion in higher education institutions.
Context	The review considered literature conducted in the universities, home, and workplace environments. The cultural, geographic, and racial or gender-based interest contexts were considered in this review because they also influence postgraduate nursing students' study progress.

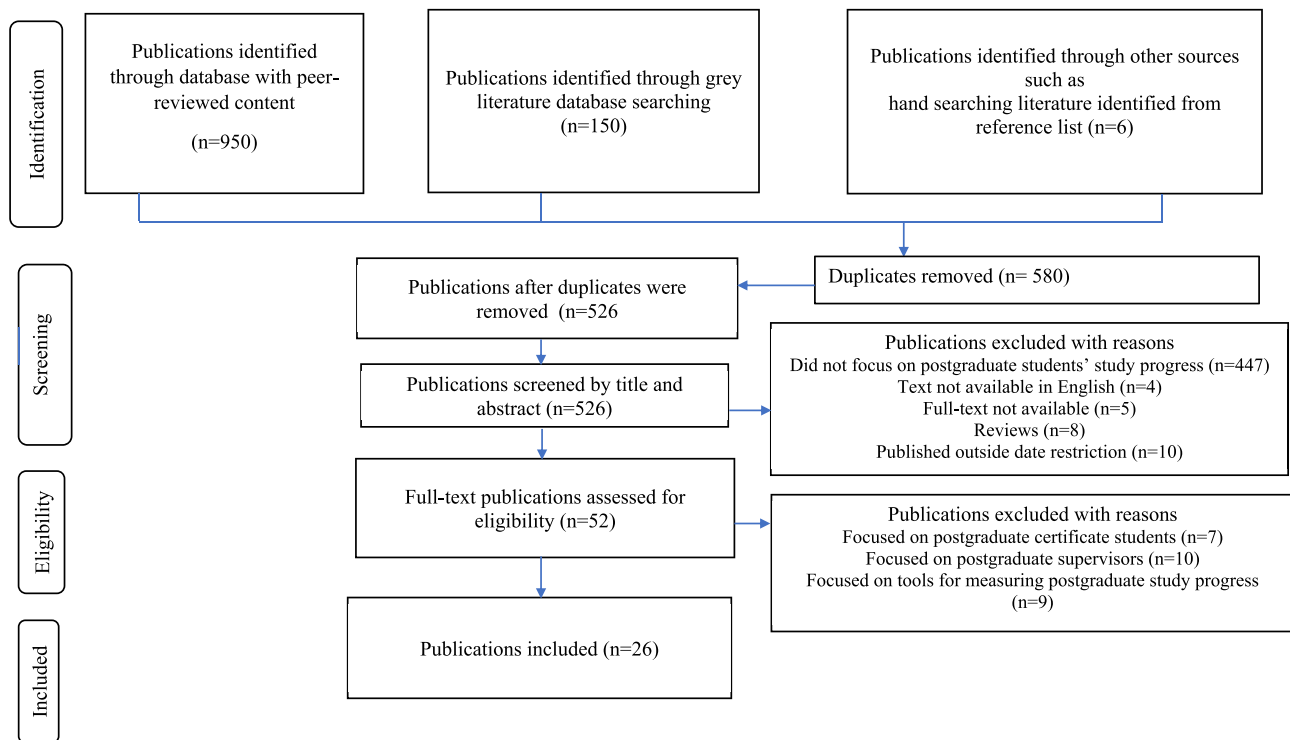


Fig. 1. PRISMA-ScR flow diagram of studies included in the review (). adapted from Tirado et al. 2020

below shows the literature search results using the PRISMA-Scoping Review flow diagram.

Fig. 1 above illustrates the results from the various databases search, titles, abstract screening, and full-text reviews. In total, 1106 records were identified in peer-reviewed literature and grey literature. A total of 526 records remained after the removal of duplicates ($n = 580$). The records were screened by title and then by abstract, resulting in 52 records that were full-text which were then assessed for eligibility. The reasons for exclusion were: not focusing on postgraduate students' study progress ($n = 447$), full-text not available ($n = 5$), reviews ($n = 8$), published outside date of restriction ($n = 10$), focused on postgraduate certificate students ($n = 7$), focused on postgraduate supervisors ($n = 10$), focused on tools for measuring postgraduate study progress ($n = 9$) and text not available in English ($n = 4$). Finally, 26 records were included in the review.

2.4. Stage 4: Charting of data

The characteristics of the studies extracted consisted of key information such as author(s), year, country, study aim, study design, population and sample features and key findings related to the scoping review question. Table 2 below shows a summary of studies included in the review following a full-text review.

Table 3 below shows the grey literature that was included in the review. The characteristics of the studies extracted consisted of authors, year, country, type of document aims, target population, and key findings related to the scoping review question.

2.5. Stage 5: Collating, summarising, and reporting results

The scoping review aimed to identify and map out the breadth of evidence available on the factors that influence postgraduate students' study progress in higher education institutions. The findings of this review were presented descriptively, and were also synthesised using a thematic, narrative approach.

3. Results

The review identified peer-reviewed studies from: Egypt ($n = 3$), USA ($n = 4$), Iran ($n = 2$), South Africa ($n = 5$), Finland ($n = 1$) and Australia ($n = 1$), Turkey ($n = 1$), Sweden ($n = 1$), Ireland ($n = 2$), China ($n = 1$), Namibia ($n = 1$). Dissertations were from South Africa ($n = 3$), Nigeria ($n = 1$), and one report from Ireland. Various studies reported on more than one factor influencing postgraduate nursing students' study progress. The six themes identified from the review were: supervisory and peer support, work and life, funding support, research writing, geographical factors, and structure of the postgraduate programme.

3.1. Theme 1: Supervisory and peer support

The majority of studies ($n = 19$), including grey literature, reported on supervisory and peer support factors that influence postgraduate nursing students' study progress. Grey literature encompasses a wide array of written materials that are not commercially published. These materials encompass items like reports from committees and government entities, conference proceedings, ongoing research updates, policy papers, and comparable sources. (Paez, 2017). The supervisory and peer support factors that were identified as negatively impacting study progress were: delayed feedback and change in research methodologies (Ergin & Şahan, 2021; Ngema, 2017), conflicts between supervisors and students (Abdel-Khalik, Adam & Abdel-Azeem, 2021), conflicting advice from supervisors (Abdel-Khalik et al., 2021), change in supervisors (Geraghty & Oliver, 2018) busy supervisors (Adam, Abdel-Azeem & Abdel-Khalik, 2019) and poor postgraduate and supervisor relationship (Onwe, 2018). These factors contributed to delayed postgraduate nursing students' study progress. On the contrary, the review also identified literature that reported on positive factors that promote postgraduate nursing students' study progress, such as adequate communication and guidance from the supervisor (Hajjhosseini et al., 2018; Nersesian et al., 2019; Loubser, 2013), positive supervisory experience in terms of trustworthiness, good relationship and access to

Table 2
Summary of studies included in the scoping review following full-text review.

Author (s), year, Country	Study aim	Study design	Population and sample features	Positive factors influencing postgraduate nursing students' study progress	Negative factors influencing postgraduate nursing students' study progress
Roets & Botma (2012) South Africa	To describe strategies implemented to minimise postgraduate students' completion time and attrition.	Cyclic technical, scientific collaborative research methodology.	107 Master of nursing students.	Good supervision.	Students (80 %) had deficient writing skills. Students (68 %) were unable to keep to deadlines. Lack of financial assistance.
Sibiya (2015) South Africa	To explore and describe the postgraduate nursing students' experiences in interdisciplinary supervision.	A descriptive exploratory qualitative study.	16 postgraduate research students registered for the first time.	Only 4 of 16 (25 %) postgraduate students reported positive supervisory experience.	Frustrations regarding supervision Geographical factors Inconsistent and lack of feedback from the supervisors.
Van Wyk et al. (2016) South Africa	To investigate the characteristics of the supervisory relationship that postgraduate students appreciate.	Qualitative research design.	18 postgraduate nursing students-one year post completion of Master's studies.	Trustworthy relationships and individualised supervision. Guidance in thesis writing.	Group supervision did not address individual student challenges. Stress related to defending the research plan to peers. Inadequate time to supervise students.
Muraranza et al. (2016) South Africa	To explore the perceptions of postgraduate nursing students regarding supervision.	Quantitative descriptive research design.	56 coursework Master of nursing students.	Participants were satisfied with the research supervision.	Family commitments. Work commitments. Inadequate funding for studies. Part-time postgraduate students struggled with work-life balance. Inadequate research writing skills. Not indicated.
Mattsson (2016) Sweden	To improve the quality of Master of Nursing students' thesis writing.	Qualitative	58 Master of nursing students.	Peer learning. Collaboration in thesis writing.	
Kaakinen et al. (2017) Finland	To describe the Master of nursing students' experiences of peer support during their studies.	A qualitative study design was used.	8 Master of nursing students.	Peer support. Mental support from peers.	Not reported.
Hajihosseini et al. (2018) Iran	To explore the expectations of postgraduate nursing students' towards their supervisors.	Qualitative study.	7 PhD and 14 Master of nursing students.	Good student-supervisor communication and adequate guidance.	Student, work, and home life imbalance.
Gazza et al. (2018) United States of America (USA)	To explore the self-assessed use of evidence-based knowledge, skills, and attitudes of scholarly writing.	Descriptive correlational design.	76 Master of nursing science students.	Not reported.	Lack of interest in abstract creation strategies. Students were unable to manage the stress associated with research writing.
Volkert et al. (2018) USA	To analyse the environmental stressors in predicting students' intention to discontinue the doctoral study programme.	Quantitative.	835 doctoral nursing students.	Support from family/friends promoted students' persistence in studying.	Increased stress levels due to different expectations between doctoral students and advisors Increased students' intention to quit studies.
Geraghty & Oliver (2018) Australia	To establish the nurses' and midwives' experiences in undertaking PhD and the challenges they encounter towards completion of studies.	Non-experimental mixed method.	16 doctoral nursing students.	Peer support was encouraged by supervisors.	Conflicting advice from supervisors. Difficulties in balancing work and life. Changing supervisors Not enough time to supervise postgraduate students.
Havenga & Sengane (2018) South Africa	To explore and describe the challenges experienced by postgraduate nursing student	Qualitative	15 Honours, 27 Master's 14 PhD	Not reported	Geographic distance. Inability to pay fees. Inability to balance work and studying. Inability to balance family responsibilities and studies. Lack of campus accommodation. Supervise had less time to supervise students. Increased academic workload. Poor time management. Delayed feedback. Inadequate computer literacy and lack of access to the library. Lack of accommodation.
Markey et al. (2019) Ireland	To explore postgraduate nursing students' experiences of studying far from home.	Qualitative	11 Master of nursing students	Peer support	Geographical distance. Difficulties in adjusting to a new country's culture.
Adam et al. (2019) Egypt	To identify challenges faced by postgraduate nursing students.	Qualitative	236 Master's and PhD students	Not reported	Lack of funding for fees. Increased study workload. Lack of accommodation. Busy supervisors. Fatigue due to trying to balance work and studying for part-time students

(continued on next page)

Table 2 (continued)

Author (s), year, Country	Study aim	Study design	Population and sample features	Positive factors influencing postgraduate nursing students' study progress	Negative factors influencing postgraduate nursing students' study progress
Ahmad & El-Shaer (2019) Egypt	To identify factors affecting postgraduate nursing students' satisfaction and academic achievement.	A descriptive correlational quantitative study.	100 postgraduate nursing students	Good supervisory support	Financial constraints.
Nersesian et al. (2019) United States	To assess the characteristics and practices of nursing PhD students, the mentoring practices of their advisors, and the likelihood of self-reported career readiness.	Descriptive, cross-sectional quantitative survey design	380 PhD nursing students	Mentoring from advisors Approachable advisors (92 %), supportive (92 %), good listeners (87 %), and accessible (86 %).	Inability to balance work and studies.
Jones-Hooker et al. (2020) USA	To identify strategies that may be adopted to improve PhD nursing students' progress in the PhD programme.	Qualitative method.	5 PhD nursing students.	PhD students were matched with mentors. Peer support.	Inability to balance work and life. Increased PhD workload.
Sikongo et al. (2020) Namibia	To explore and describe the experiences of postgraduate nursing students during their postgraduate studies at the University of Namibia.	Qualitative research design	15 nursing postgraduate students	Blended learning approach	The imbalance between studies and family responsibilities. A stressful curriculum resulted in stress and burnout.
Nematollahi et al. (2020) Iran	To explain the educational challenges of neonatal intensive care postgraduate nursing students.	Qualitative	18 postgraduate neonatal intensive care student nurses	Not reported	Extended work shifts make studying difficult. Stressful curriculum
Ergin & Şahan (2021) Turkey	To determine problems experienced by postgraduate nursing students regarding distance education during the COVID-19 pandemic.	Quantitative-method	306 postgraduate nursing students.	Not indicated.	Delayed feedback. Geographical distance. Change in research methodology due to the COVID-19 pandemic. Face-to-face supervision, teaching and learning changed to online.
Abdel-Khalik, et al. (2021) Egypt	To investigate challenges faced by postgraduate nursing students and develop strategies for mitigation.	Quantitative.	236 Master's and doctoral nursing students.	Not reported.	Poor research writing skills. Plagiarism. Inability to balance work and studies. Unclear feedback from supervisors. Conflicts between supervisors and postgraduate students. Financial challenges.
Zhang et al. (2021) China	To investigate the relationship between research ability and research motivation of postgraduate nursing students.	Quantitative	191 postgraduate nursing students	Intrinsic motivation improved the students' research ability. Good supervision.	Higher age group postgraduate students struggled to progress than the younger ones.

supervisors (Sibiya, 2015; Ahmad & El-Shaer, 2019; Roets & Botma, 2012; Van Wyk et al., 2016; Zhang et al., 2021; Loubser, 2013) and a good match between mentor and postgraduate student (Jones-Hooker et al., 2020). Furthermore, peer support enhanced postgraduate nursing students' study progress (Kaakinen et al., 2016; Volkert, Candela & Bernacki, 2018; Geraghty & Oliver, 2018; Jones-Hooker et al., 2020; Mattsson, 2016). However, some postgraduate students found it stressful to defend their research plans to their peers (Van Wyk et al., 2016); hence their study progress was negatively impacted. Postgraduate students reported that supervisors did not have to allocate adequate time to supervise them (Geraghty & Oliver, 2018; Van Wyk et al., 2016, Havenga & Heyns, 2016.).

3.2. Theme 2: Work and life balance

Fifteen studies, including grey literature, stated that work-life balance factors influenced postgraduate nursing students' study progress. Factors that negatively influenced study progress identified in the review were: being a part-time postgraduate student (Muraraneza, Mtshali & Mthembu, 2016; Adam et al., 2019; Loubser, 2013), inability to study due to work commitments (Abdel-Khalik et al., 2021; Geraghty & Oliver, 2018; Jones-Hooker et al., 2020; Nersesian et al., 2019; Nematollahi et al., 2020; Havenga & Sengane, 2018; Onwe, 2018), difficulties to balancing family commitments and studies (Hajihosseini et al., 2018; Sikongo, Pretorius & Ashipala, 2020; PDU, 2020). Additionally, factors such as the inability to balance personal life and work (Bock, 2013) and extended work shifts (Nematollahi et al., 2020) were also reported. Only

one study out of 15 reported that factors such as support from family/friends positively contributed to study progress (Volkert et al., 2018).

According to Zhang et al. (2021) and Loubser (2013), young postgraduate nursing students had a relatively good research foundation and progressed in studies compared to the higher age group. In addition, female postgraduate nursing students struggled to progress in their studies due to parental and family responsibilities compared to their male counterparts (Loubser, 2013).

3.3. Theme 3: Funding

Eight studies, including the grey literature, indicated that funding was among the factors influencing the postgraduate nursing students' study progress. Lack of funding for fees was indicated as one of the factors that negatively influenced the study progress (Muraraneza et al., 2016; Abdel-Khalik et al., 2021; Roets & Botma, 2012; Adam et al., 2019; Ahmad & El-Shaer, 2019). Additionally, inadequate funds to conduct research-related activities (travelling to data collection sites, printing, photocopying) also negatively affected the study progress of the postgraduate nursing students (Markey et al., 2019; Havenga & Sengane, 2018; PDU, 2020).

3.4. Theme 4: Research writing

Insufficient research and computer skills were reported to negatively influence postgraduate nursing students' study progress (Bock 2013). In addition, poor research writing skills, lack of feedback, postponement of

Table 3
Summary of grey literature included in the scoping review.

Authors, Year, Country	Type of document	Aim	Study design	Target population	Positive factors affecting postgraduate nursing students' study progress	Negative factors affecting postgraduate nursing students' study progress
Loubser (2013) South Africa	Dissertation	To identify factors related to the person, the Higher Education Institution, and employment that influence the throughput of students in a distance education Master's Degree in Nursing programme at a university in South Africa	A non-experimental, descriptive research design was applied with a quantitative approach.	201 Master of Nursing students	Constructive feedback from supervisors.	Mature students entering studies later in life have numerous commitments and roles. Female students report difficulty in balancing studies with parental and family responsibilities. Lack of support network. Demands of studying part-time. Funding constraints.
Bock (2013) South Africa	Dissertation	To explore research supervision needs and experiences of the Master's students in nursing.	An exploratory phenomenological research design was used within a qualitative research approach.	Master of nursing students	Supervisor support Clear roles and responsibilities between the postgraduate students and supervisors.	Lack of time management. Inability to balance personal, work, and studies. Financial constraints. Lack of computer and writing skills.
Ngema (2017) South Africa	Dissertation	To explore and describe the postgraduate nursing students' perceptions of using innovative teaching strategies.	An exploratory descriptive design was used.	Seven PhD, 13 Master's and 31 Honours of nursing students.	Support with the use of technology for research and learning	Lack of feedback on the thesis writing.
Onwe (2018) Nigeria	Dissertation	Investigating the experiences of postgraduate nursing students enrolled in Nigeria.	A qualitative inquiry method was used.	45 Postgraduate nursing students	Not reported	No difference between full-time and part-time students regarding methods of study and curriculum content spread. Work-life imbalance. Lack of campus accommodation. Lack of funding for studies. Family commitments. Lack of motivation. Poor postgraduate and supervisor relationship. Difficulty in combining work and family life. Inadequate funds for research-related activities.
Planning and Development Unit (PDU) (2020) Ireland	Report	To inform the strategic plans of the Nursing and Midwifery Planning and Development Unit of the outcomes of continuing education for nurses and midwives.	A mixed method sequential research design was used.	1300 postgraduate nursing and midwife students	Support from the employer. Funding for studies.	

research writing, and plagiarism also impeded study progress (Abdel-Khalik et al., 2021; Ngema, 2017, Kaakinen et al., 2016). Furthermore, Roets & Botma's (2012) study indicated that 80 % of the postgraduate students had deficient writing skills, and 68 % could not keep to deadlines. Gazza et al. (2018) added that some postgraduate nursing students were not interested in participating in the pre-writing activities, which slowed study progress. On the contrary, Van Wyk's (2016) study findings indicated that postgraduate nursing students appreciated the guidance in thesis writing, and they progressed in their studies. Peer collaboration on research writing positively contributed to the study progress (Mattsson, 2016).

3.5. Theme 5: Structure of the postgraduate programme

The review identified four studies, including grey literature, that reported on the factors that negatively influence postgraduate students' study progress. Postgraduate Nursing students found the curriculum too wide-ranging to be covered in one year (Sikongo et al., 2020), and the curriculum increased the study workload (Jones-Hooker et al. 2020), resulting in stress and burnout (Nematollahi et al., 2020). Nonetheless, Onwe (2018) noted that there was no difference between full-time and part-time students regarding methods of study and curriculum content spread – the content and the study duration were the same.

3.6. Theme 6: Geographical factors

Five studies identified geographical factors negatively influencing postgraduate nursing students' study progress, such as lack of university campus accommodation (Onwe, 2018; Havenga & Sengane, 2018; Sibiyi, 2015). According to Ergin & Suhan (2021), geographic distance hindered the completion of thesis writing as postgraduate students struggled to access their supervisors. Postgraduate students studying far from home) struggled to adjust to new cultures and new educational strategies different from their country of origin (Markey, 2019).

The factors influencing postgraduate nursing students' study progress according to country classification (developing and developed country) are illustrated in Table 4 below.

Lack of funding as a factor influencing postgraduate study progress was reported mainly in developing countries and only in one developed country (Ireland). Factors such as inadequate supervisory support, work-life imbalance and inadequate writing skills were common in both the advanced economies and the less advanced ones. Inadequate research writing skills were reported as a stumbling block to postgraduate nursing students' study progress in most developing countries. The geographical distance was reported as a factor that influenced postgraduate nursing students' study progress in both developing and developed countries (Table 4).

Table 4
Categorisation of factors that influence study progress by country classification.

Developing countries		
Name of county	Factors	Authors and year
South Africa, Nigeria, Iran and Egypt	Supervisory and peer support	Sibiya, 2015; Van Wyk et al., 2016; Havenga & Sengane, 2018; Ngema, 2017; Loubser, 2013; Onwe, 2018; Abdel-Khalik et al., 2021; Adam et al., 2019; Ergin & Şahan, 2021; Hajhosseini et al., 2018; Ahmad & El-Shaer, 2019; Roets & Botma, 2012; Van Wyk et al., 2016.
South Africa, Iran, Namibia, Nigeria and Egypt	Work-life balance	Muraraneza et al., 2016; Sikongo et al., 2020; Havenga & Sengane, 2018; Loubser, 2013; Bock, 2013; Hajhosseini et al., 2018; Nematollahi et al., 2020; Onwe, 2018; Abdel-Khalik, et al., 2021; Adam et al., 2019.
South Africa, Nigeria and Egypt	Funding	Muraraneza et al., 2016; Roets & Botma, 2012; Havenga & Sengane, 2018; Abdel-Khalik, et al., 2021; Adam et al., 2019; Ahmad & El-Shaer, 2019.
South Africa and Egypt	Research writing	Muraraneza et al., 2016; Roets & Botma, 2012; Bock, 2013; Abdel-Khalik, et al., 2021; Ngema, 2017; Van Wyk et al., 2016
South Africa, Nigeria and Namibia	Structure of the postgraduate programme	Sikongo et al., 2020; Nematollahi et al., 2020; Onwe, 2018.
South Africa and Nigeria	Geographical factors	Sibiya, 2015; Havenga & Sengane, 2018; Onwe, 2018.
Developed countries		
USA, Australia, China, Sweden and Turkey	Supervisory and peer support	Volkert et al., 2018; Geraghty & Oliver, 2018; Ergin & Şahan, 2021; Nersesian et al., 2019; Jones-Hooker et al., 2020; Zhang et al., 2021; Mattsson, 2016.
USA, Australia, China and Ireland	Work-life balance	Jones-Hooker et al., 2020; Geraghty & Oliver, 2018; Nersesian et al., 2019; PDU, 2020; Zhang et al., 2021.
Ireland	Funding	PDU, 2020; Markey et al., 2019.
USA, Sweden and Finland	Research writing	Gazza et al., 2018; Kaakinen et al., 2017; Mattsson, 2016.
USA	Structure of the postgraduate programme	Jones-Hooker et al., 2020.
Turkey and Ireland	Geographical factors	Ergin & Şahan, 2021; Markey et al., 2019.

4. Discussion

The scoping review aimed to identify and map out the breadth of evidence available on the factors that influence postgraduate nursing students' study progress. The findings of this review revealed the main themes, which were; supervisory and peer support, work and life, funding support, research writing, geographical factors, and the structure of the postgraduate programme.

The review noted that most literature reported that postgraduate nursing students had positive perceptions of supervisory and peer support (Van Wyk et al. 2016; Hajhosseini et al., 2018). This was because most postgraduate nursing students indicated that their supervisors guided and mentally supported them when they experienced slow progress (Shahsavari, Kourepaz & Bulut, 2020; Havenga & Sengane, 2018). The support promoted the development of a postgraduate nursing student and supervisor relationship characterised by openness and trustworthiness, which made them feel encouraged and motivated, thus enhancing study progress. (Hajhosseini et al., 2018; Sibiya, 2015; Ahmad & El-Shaer, 2019). In addition, Volkert et al. (2018) added that postgraduate studies could lead to increased stress levels due to different expectations between doctoral students and advisors regarding roles and responsibilities, culminating in increased students' intention to quit their studies. Supervisory support is reflected when supervisors display a positive attitude and empathy toward postgraduate students (Van Wyk et al., 2016). This may encourage postgraduate students to view the challenges they encounter during research as opportunities for development instead of hurdles that may hinder study progress (Van Wyk et al., 2016).

The review identified literature stating that some postgraduate nursing students were dissatisfied with their supervisors due to delayed feedback (Ergin & Şahan, 2021; Ngema, 2017). The delayed feedback contributed to slow progress and lowered postgraduate nursing students' satisfaction levels as they became discouraged with their studies (Roets & Botma, 2012). Additionally, the COVID-19 pandemic alert level restrictions made it difficult for postgraduate nursing students to meet with their supervisors and the poor internet connectivity hampered communication with supervisors (Ergin & Şahan, 2021). Furthermore, part-time postgraduate nursing students enrolled for studies and employed full-time found it challenging to set aside time to meet with their research supervisors during working hours (Muraraneza et al.,

2016). Hence they may perceive less supervisory support compared to full-time students. According to Abdel-Khalik et al. (2021), postgraduate nursing students were not satisfied with the supervisory support due to conflicting advice from supervisors. The contradictory advice may slow the study progress of the postgraduate nursing student as they will become unsure about which decision to take without harming their relationship with the other supervisor. A study conducted in Australia by Geraghty and Oliver (2018) reported that postgraduate nursing students who changed supervisors during their studies became frustrated as that may lead to their studies taking a slightly different course than initially planned. Various studies also reported that peer support maximised the opportunity for learning skills for postgraduate nursing students, thus promoting positive perceptions and a platform for strong mental support and open interaction among postgraduate nursing students (Kaakinen et al., 2016, Volkert, Candela & Bernacki, 2018; Geraghty & Oliver, 2018).

Part-time postgraduate students struggled to balance work and life compared to full-time students, and this was because part-time students had to work and study at the same time, while full-time students largely focused more on their studies than on work (Muraraneza et al., 2016; Adam et al., 2019; Loubser, 2013). Some part-time postgraduate students had extended work shifts leaving them with inadequate time set aside for studies; thus, study progress may be impeded (Nematollahi et al., 2020). According to Hovdhaugen (2015), if a postgraduate student worked more than 20 h a week, it increased their risk of dropout as much as full-time work. Therefore, employers should develop guidelines that provide work autonomy in studying individuals so they can focus on their studies (Kumar et al., 2020). A study in China reported that the higher age group of postgraduate nursing students struggled to progress in their studies due to added responsibilities of employment, family, and studies. This reduced their input for scientific research leading to a decline in research ability. (Zhang et al., 2021). In the same vein, female postgraduate nursing students had more responsibilities in looking after children and house chores than males, resulting in slowed study progress (Loubser, 2013). However, Gazza et al. (2018) challenged the status quo and affirmed that postgraduate nursing students who received family support could balance work and life.

Postgraduate nursing students without funding for studies struggled to pay fees (Roets & Botma, 2012); hence their study progress was hampered as they had to save and use personal earnings to sponsor

studies. Conversely, postgraduate nursing students with funding support may only need to focus on their studies, which may positively influence their study progress (PDU, 2020). In a study conducted by Abdel-Khalik et al. (2021), postgraduate nursing students could not raise funds to cater for research-related expenses such as photocopying, printing, statistical analysis, and travel to research sites that are associated with their studies which then impeded study progress.

A study by Jones-Hooker et al. (2020) and Kaakinen et al. (2016) stated that postgraduate nursing students had excess workload resulting in them postponing thesis work. The postponement, failure to start tasks that are important in the research process, and being unable to meet deadlines, thus negatively impact the study progress. Postgraduate nursing students who received inadequate guidance regarding research writing from their supervisors exhibited poor writing skills (Muraraneza et al., 2016; Bock, 2013) hence study progress slowed. In the USA, a study by Gazza et al. (2018) revealed that postgraduate nursing students were not interested in implementing prewriting activities strategies such as outlining, brainstorming, literature search, and developing a researchable topic that facilitated research writing. The disinterest may result in poor writing skills leading to slowed study progress. However, Van Wyk's (2016) and Ngema (2017) reported that postgraduate nursing students appreciated the guidance in thesis writing and support in using technology for research, thus promoting study progress. In Sweden, a study by Mattsson (2016) showed that postgraduate nursing improved in thesis writing when they collaborated with their peers and, if given the platform to discuss their thoughts about their thesis, thus promoting study progress.

Postgraduate nursing students stated that the curriculum was too wide-ranging compared to the time with which it was expected to be completed, and this led to increased study workload and students not being able to cope with their studies (Sikongo, 2020; Jones-Hooker et al., 2020). The increased workload resulted in the postgraduate nursing student experiencing stress and burnout (Nematollahi et al., 2020). In Nigeria, the curriculum and study duration for part-time and full-time postgraduate nursing students were the same Onwe (2018). This caused much stress for the part-time students as they struggled to balance work and studies resulting in halted progress and failure to complete their studies within the prescribed minimum timeframe. Ergin and Suhan (2021) reported that during COVID-19 postgraduate nursing students could not collect data for their studies due to alert level restrictions and hence had to change their research methodologies. Shortage of university campus accommodation resulted in postgraduate students being unable to access university resources such as libraries and Wi-Fi (Ergin & Suhan, 2021). Postgraduate students studying far from home (in other countries) struggle to adjust to new cultures and new educational strategies different from their country of origin (Markey 2019); hence they struggle to progress in their studies.

Postgraduate nursing students who experienced financial constraints were those who had come from other countries to study in Ireland (Markey, 2019). The students resorted to borrowing money from their families and friends to pay for study fees and were obliged to pay back the money. The reimbursement of money to family and friends added to the stress and concerns around the importance of succeeding in their studies (Markey, 2019). More interestingly was the fact that work-life imbalance and inadequate supervisory support were common in both the advanced economies and the less advanced ones. This may have been due to most postgraduate studies being conducted part-time, especially the Master's and PhD, with students working and studying simultaneously and hence struggling with balancing work, studies and the family. Literature has shown that inadequate supervisory support may be due to factors that include postgraduate supervisors often being burdened with heavy academic, clinical and unprecedented administrative duties leaving them with less time (Havenga & Heyns, 2016.).

Studies in most countries with developing economies reported inadequate research writing skills as a factor influencing the study progress of postgraduate nursing students. This may have been due to

reasons that include the postgraduate nursing students' reluctance to utilise research development units within their institutions which guide students in research writing (Roets & Botma, 2012). The geographical factors that influenced postgraduate nursing students' study progress in both developing and developed countries may have affected the one-on-one interaction between the postgraduate student and the supervisor for guidance and support, resulting in slowed study progress (Sibiya, 2015; Havenga & Sengane, 2018). Furthermore, the inability to meet face to face for one-on-one level interaction with supervisors was further exacerbated by the COVID-19 pandemic alert level restrictions (Ergin & Şahan, 2021).

5. Strengths and limitations

This scoping review will enable the creation of strategies to mitigate the factors influencing postgraduate nursing students' study progress. The review also considered studies written in English, and similar studies may be written in other languages.

6. Conclusion and recommendations

The review revealed that most postgraduate nursing students stated that their jobs made focusing on their studies difficult. Therefore, employers should develop work-life balance strategies that will assist postgraduate students' study progress. Workshops to capacitate postgraduate nursing students in academic writing should be conducted to promote study progress. There is a need for alternative and augmented funding sources for postgraduate students. Introducing a student loan scheme with low interest rates payable upon graduation using revenue services may also be adopted to make study fees affordable to the postgraduate student. Students with full-cost study funding progress better than those with no or partial-cost funding. Even though geographical factors were reported as factors that influenced study progress in developing and developed countries, the prevalence of the COVID-19 pandemic compelled all teaching, learning and supervision to take place online. Therefore the impact of geographical factors may have been minimised by the advent of online educational technologies. Future studies should look at the impact of other problems prevalent in developing countries such as lack of electricity and internet on postgraduate students' study progress.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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