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Transition of graduate nurses from student to practice during the COVID-19 pandemic: Integrative review

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ARTICLE INFO

Keywords:

COVID-19
Graduate nurses
Integrative review
Pandemic
Practice
Transition

ABSTRACT

The COVID-19 pandemic has had dire consequences for all health care workers including nurses. Consequently, those graduate nurses who transitioned into practice during that time were not spared the pandemic's impact. The purpose of this integrative review is to identify and present the extant literature on the transition of graduate nurses from student to practice during the COVID-19 pandemic. Online data bases ranging from the Cumulative Index to the Nursing and Allied Health Literature, the Education Resources Information Centre and PsychINFO were all perused for publications between 2019 and 2021. Key search terms included COVID-19, graduate nurses, newly qualified nurses, transition. The researchers then carefully assessed the articles found and used the coder to determine the relevance of those selected articles. The Critical Appraisal Skills Programme was used to validate the quality of the research articles considered for review. The search of these data bases produced 10 articles which met the inclusion criteria.

Four main themes emerged from the study, namely: Organisational challenges faced by graduate nurses during their transition into practice during the COVID-19 pandemic; Personal challenges experienced by graduate nurses in their transition into practice in the context of COVID-19 pandemic; Positive outcomes emanating from the transition of graduate nurses during the pandemic; and Factors which facilitated the transition from student to practice by graduate nurses during the pandemic.

The organisational challenges findings revealed that graduate nurses experienced such problems as a shortage of resources, burnout syndrome, work overload and lack of support. Challenges related to their transition throughout the COVID-19 pandemic period included psychological effects and the theory practice gap. Positive outcomes that emerged were learning and better employment opportunities. Factors which could have better facilitated their transition encompassed the availability of equipment and training opportunities. Recommendations include increased collaborative efforts amongst stakeholders to support and mentor graduate nurses during such emergencies; and psychological interventions that could assist with coping in such dire situations as the COVID-19 pandemic.

1. Introduction

The transition from student nurse to a professional nurse position has, for many decades, been an important area of research in nursing. During this transition phase, graduate nurses familiarise themselves with their working environment, develop clinical skills, associate with new co-workers and adapt to new ward routines (Gaundan & Mohamadnezhad, 2018). Evidence from literature revealed that newly qualified nurses experience a range of challenges during transition from

student to practice which is believed to have a negative impact on their ability to provide high quality patient care (Labrague et al., 2019). Studies conducted in recent years include those of Ankers, Barton and Parry (2018); Blevins (2018) and Draper (2018).

One of the primary challenges experienced by the graduate nurse is the expectation to function effectively as a professional nurse. Due to the critical shortage of staff, graduate nurses are frequently expected to provide patient care without any support or guidance from the more experienced nurses. As a result, graduate nurses feel that they have been

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set up for failure with many becoming frustrated and eventually leaving the profession. This shortage of nurses has become a worldwide issue despite the vital role played by the nursing profession in the health care system (Ubas-Sumagasyay & Oducado, 2020). In a study conducted in the North West Province, South Africa by Matlhaba, Pienaar and Sehularo (2019: 5), it was determined that graduate nurses felt that they were 'thrown into deep end and expected to swim'. Another study by Labrague et al. (2019) of graduate nurses in the Philippines noted similar experiences, it was reported that these graduate nurses displayed significant levels of stress and disappointment due to the high expectations placed on them (Labrague et al., 2019).

Since the outbreak of severe acute respiratory syndrome (SARS) in China and South East-Asia between 2002 and 2004, literature indicates that the World Health Organization (WHO) has declared several pandemics as 'Public Health Emergency of International Concern' (PHEIC) (Goni-Fuste, Wennberg, Martin-Delgado, Alfonso-Arias, Martin-Ferreres & Monforte-Royo, 2021). In 2009, the United States of America (USA) was the first country to report an outbreak of swine and avian flu as a pandemic (H1N1), this was followed by the 2012 outbreak of Middle Eastern respiratory syndrome (MERS) in Saudi Arabia (Ryu, 2017). Next came the 2014 outbreak in West Africa of the Ebola virus disease (EVD); and then, beginning in 2019, the current SARS-CoV-2 pandemic, globally known as Coronavirus or COVID-19. Having first originated in China this virus has since rapidly spread throughout the world (Goni-Fuste et al., 2021), becoming the most devastating pandemic the world has faced this century, with millions of confirmed infections and deaths globally (World Health Organization, 2020). The WHO declared the outbreak of COVID-19 a pandemic in February of 2020. Health systems across the world gradually collapsed due to the tremendous increase in the numbers of COVID-19 cases; further, hospital infrastructures were unable to transfer or manage patients with COVID-19 related conditions. It is reported that due to the overwhelming demands caused by the pandemic, the shortage of health care workers, particularly nurses, soon became evident in many different parts of the world (Collado-Boira et al., 2020).

Since the initial outbreak of the COVID-19 pandemic several studies have been conducted which have had as their primary focus the mental wellbeing of health professionals with nurses being the most at risk group (Kameg et al., 2021; Havaei et al., 2021; and Parthasarathy et al., 2021). To fight against a pandemic such as COVID-19, there is a need for a united force of health professionals including newly graduated nurses. During transition from student to practice, graduate nurses often experience unfamiliar and challenging situations for which they can be unprepared to handle. This also occurred during the COVID-19 outbreak as few were prepared for the magnitude of the COVID-19 crisis. Grande, Butcon, Indonto, Villacorte and Berdida, (2021), found that experienced nurses as well as graduate nurses experienced stress, trauma and mental health issues that affected their quality of life. The impact of stress amongst the graduate nurses triggered by the pandemic was overwhelming and providing care to patients produced anxiety and uncertainties (Grande et al., 2021). As a section of health care professionals, graduate nurses are expected to contribute to the delivery of quality care in these difficult times. Despite the number of studies that focus on the transition from student to professional nurse, little is yet known of the impact of the COVID-19 pandemic on them during this period. Therefore, the authors wish to empirically assess the impact of the COVID-19 pandemic on the transition of graduate nurses from student to professional.

2. Purpose and objectives

The purpose of this integrative review was to identify research that emerged between the years 2019–2021 and to present literature on the transition from student to professional nurse during the COVID-19 pandemic. The specific objectives are:

- To determine challenges encountered by graduate nurses during their transition into practice during the COVID-19 pandemic
- To identify factors that enabled transition graduate nurses during their transition into practice during the COVID-19 pandemic

3. Definition of key concepts

COVID-19: is the disease caused by a new coronavirus called SARS-CoV-2. The WHO first learned of this new virus on 31 December 2019, following a report of a cluster of cases of 'viral pneumonia' in Wuhan, People's Republic of China (World Health Organization, 2020).

Graduate nurse: The graduate nurse is one who has completed their academic studies but not yet completed the requirements to become a registered nurse.

Integrative Literature review: The integrative literature review is a distinctive form of research that generates new knowledge about a topic by reviewing, critiquing and synthesizing representative literature on that topic in an integrated way such that new frameworks and perspectives are generated (Scully-Russ & Torracco, 2020).

Pandemic: According to (Kelly, 2011), a pandemic is the worldwide spread of a new disease occurring over a very wide area, crossing international boundaries and usually affecting a large number of people. In this review, pandemic refers to the virus which was first confirmed in December 2019.

Transition: Transition is defined as the navigation of change, which involves developmental processes, individual growth and shifts in role and responsibilities (Gale & Parker, 2014). In this review, transition refers to the period from student nurse to professional nurse.

4. Methods

This integrated review was guided by Cooper's (1998) framework as suggested by Toronto and Remington (2020). The method was selected because it provides integration of quantitative and qualitative empirical studies on a particular topic (Toronto and Remington 2020). The methodological framework is comprised of the following five steps, namely: (1) formulation of a broad purpose and/or review question(s); (2) systematic search of the literature using predetermined criteria; (3) critical appraisal of selected research; (4) analysis and synthesis of literature; and 5) discussion on new knowledge.

4.1. Formulation of a broad purpose and/or review question(s).

Although the background highlighted the challenges experienced by graduate nurses, limited integrative literature review has been conducted to comprehensively explore literature on the transition of graduate nurses from student to practice during the COVID-19 pandemic specifically. The purpose of this integrative review was then to identify research conducted in the years 2019 to 2021 and to present literature on the transition of graduate nurses from student to practice during COVID-19 pandemic. In this context, the following questions were used to guide this integrative literature review:

- What types of challenges did graduate nurses encounter during transition into practice in COVID-19 pandemic?
- What factors facilitated the transition of graduate nurses during transition into practice during the COVID-19 pandemic?

4.2. Systematic search of literature using predetermined criteria

This review consisted of research articles published between 2019 and 2021 in the following electronic data bases: Cumulative Index to Nursing and Allied Health Literature (CINAHL); Education Resources Information Centre (ERIC); PsychINFO; Science Direct; Pub Med; EBS-COhost; Google scholar; and Medline, all of which were searched exhaustively. Search terms included: "Transition"; "COVID-19"; and

“graduate nurses”, as indicated in the topic. Other terms included: “intern nurses”; “newly qualified nurses”; “community service nurses”; “newly qualified licensed/ registered/ Professional/Staff nurses”; and “novice nurses”.

Inclusion and exclusion criteria was then applied to ensure that the appropriate and relevant articles were reviewed. Studies were included if they met the following criteria: (a) scholarly works published in peer-reviewed journals; (b) were written in English; (c) occurred in the timeframe between 2019 and 2021; (d) study participants were graduate nurses; and (e) included the search term or keywords. Any research work and articles involving other categories of nurses including students and other health care professionals were excluded.

The Preferred Reporting Items for this Reviews and meta-Analysis was applied in order to determine the most appropriate articles for review (Moher et al., 2009). The search focused on full articles which contained the key concepts. A thorough search initially produced 1020 reports, blogs and research articles, from which 810 duplicates were removed. After careful and thorough assessment of titles and appropriateness a further 1020 were excluded. The remaining 210 were reviewed for title, abstract and relevance. This review resulted in the removal of a further 124 documents. The remaining 86 were read to verify the methodology and the population resulting in the removal of an additional 76 records. Ten articles remained for critical review. The PRISMA diagram, illustrates the steps followed in the selection of the included articles (Fig. 1). Table 1, shows the summary of articles that were used in the study.

4.3. Critical appraisal of selected research

The authors critically evaluated the reserved articles through application of the methodological assessment tools from the Critical Appraisal Skills Programme (CASP, 2018). The CASP tool containing ten items was applied to rate the quality of qualitative studies (CASP, 2018). All included qualitative articles scored “yes”, and therefore met the

requirements to be reviewed. Table 2 shows the CASP for qualitative studies included. In a similar instance, mixed method and quantitative studies were rated according to an evidence hierarchy matrix (Joanna Briggs Institute, 2017). In this aspect, eight criteria were scored with the following: Yes = Y; No = N; Unclear = U; Not Applicable = NA. Most of the quality criteria were scored a “Yes” in all the articles, and Unclear for two criteria in Xu et al. (2021). From this 10 studies that met the quality appraisal criteria were retained: qualitative (n = 7); mixed method (n = 1); quantitative (n = 2) studies.

4.4. Analysis and synthesis of literature

A literature analysis and synthesis procedure which involved selection and critical appraisal of articles was independently steered by two reviewers. Inconsistencies were judged and incongruities were fixed by discussion and consensus reaching between the two reviewers.

The authors discussed the findings and all discrepancies were resolved consensually. During the data analysis and interpretation stage, specific themes were identified to provide clearer results for discussion. To prevent any loss of valuable insight or alternative interpretations, these steps were strictly maintained throughout the review. The final stage involved the dissemination of the review findings.

5. Findings

The study search generated ten eligible research articles, six came from Google Scholar, two from EBSCOhost, and two from Science Direct. All articles were quality appraised and found to meet the review consistency as specified in Tables 2 and 3. The summary of these articles is described in Table 1 according to the following sub-titles: authors and year; country; purpose; type of research approach and design/ methods and findings. Seven studies followed a qualitative approach, namely: Al-Adawi et al. (2021); Crismon et al. (2021); García-Martín et al. (2020); Lancaster et al. (2021); Naylor et al. (2021); Sarnkhaowkhom, et al.

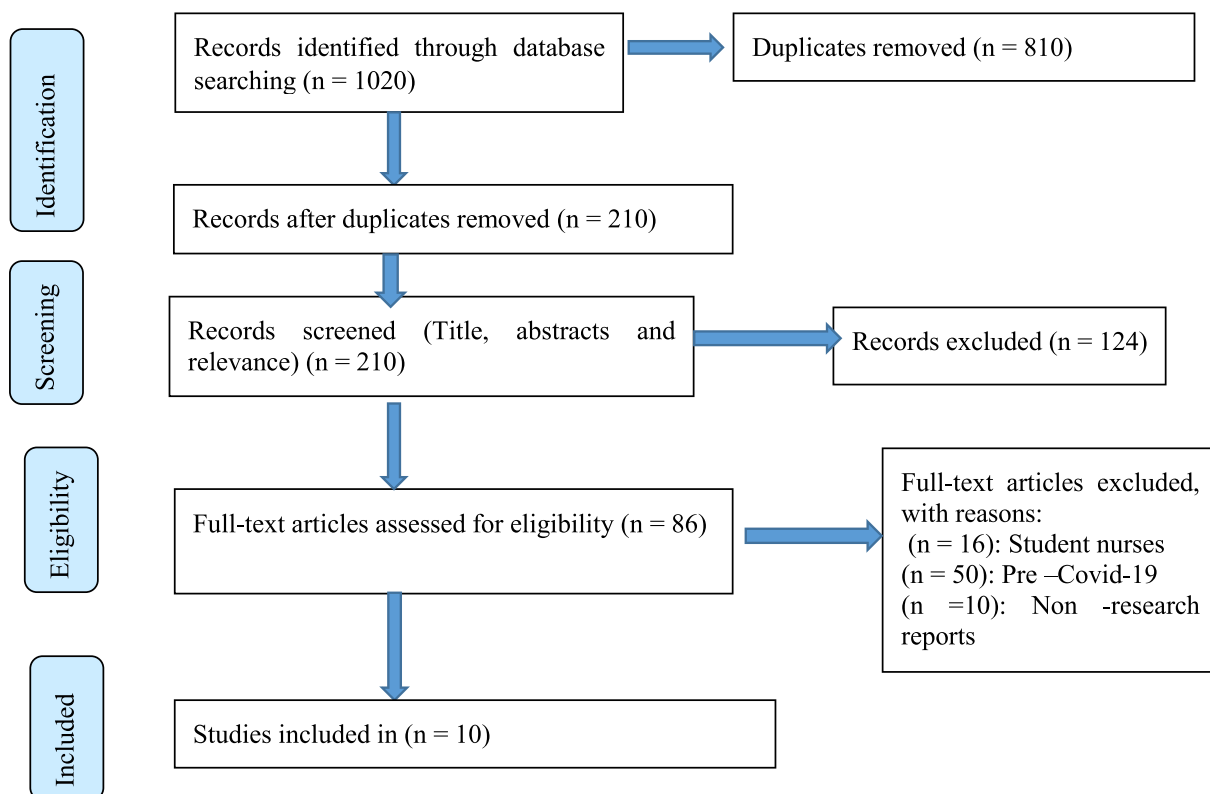


Fig. 1. PRISMA Flow Diagram of integrative review (adapted from Moher et al., 2009).

Table 1
Summary of included articles.

Authors; Year	Country	Purpose	Sample	Research Design/methods	Findings
1. Al-Adawi et al. (2021)	Iran	To examine the impact of Covid-19 on NGNs' preparedness for professional practice within a multisite, academic medical centre	9 newly employed nurses registered in a three months internship	Qualitative study Purposive sampling	Negative experiences regarding intense internship requirements, Non-availability of preceptors, hospital environment and Covid-19 circumstances. Positive experiences were mainly related to their self-motivation, recruitment satisfaction, and family encouragement and support. Lack of knowledge regarding Covid-19 pandemic and was disclosed and associated with mixed emotions. Need for preparatory amendments to support newly employed nurses
2. Chen et al. (2021)	Switzerland	This study aimed to explore registered nurses' competence in nursing care and their intention to stay in their current workplace.	400 newly graduated nurses	-Quantitative -Cross-sectional study -Probability proportionate to size sampling	Majority (55.4 %) agreed and 39 % strongly agreed that providing care to patients with infections improved their competence in communicating with such patients. Furthermore, 94 % agreed or strongly agreed that work experience helped improve their ability to provide care to patients with infections. Graduate nurses' competencies in areas of pandemic disease care and care for infectious adults depended on the experience of nursing care and nursing competence in their professional careers
3. Crismon et al., (2021)	USA	To describe recent nurse graduates' perceptions of the impact of Covid-19 pandemic on their transition from education to practice.	82 graduated nurses in 2019	-Qualitative descriptive study employed content analysis -Purposive sample	Participants expressed three overarching concerns: 1) altered plans such as difficulty finding employment; logistical, system-related stressors including licensing delays and chaotic on boarding; and 3) feeling pride in profession despite perceiving ambivalence in public discourse.
4. García-Martín et al., (2020)	Spain	To explore the experiences and perceptions of recent nursing graduates working in emergency departments during the Covid-19 outbreak.	16 new nurses with less than or equal to 6 months of experience	- Qualitative study -Convenience and snowball sampling	Major themes emerged from data: fears and concerns, organisational issues and support for novice nurses, with subthemes, coping with stress and uncertainty and fear of infecting loved ones and others; organisational capabilities and dealing with new challenges, and information resources and better planning and formation.
5. Lancaster et al. (2021)	USA	To describe the willingness of graduating nurses to provide care during the Covid-19 pandemic.	84 graduated nurses	-Qualitative descriptive study	Of these, 82 % of graduating nurses describe a willingness to voluntarily care for Covid-19 patients. After summarizing narrative responses, two themes emerged including self-assessment of personal and familial risk and conflicting obligations.
6. Naylor et al. (2021)	USA	To describe the experience of novice nurses working in acute care settings during a pandemic.	13 participants	-Qualitative phenomenological study -Purposive sampling identified -13 participants	Eight themes emerged: Dealing with death, Which personal protective equipment (PPE) will keep us safe?, Caring for high acuity patients with limited training, Difficulties working short-staffed, Support from the healthcare team, Nursing school preparation for a pandemic. Novice nurses experienced anxieties and struggled to cope. Support from peers and coping skills learned during nursing school helped them continue to work during a critical time.
7. Sarnkhaowkhom et al., (2021)	ASIA	To explore the experiences of novice nurses caring for patients diagnosed with Covid-19 in Thailand.	12 novice nurses	-Qualitative -Snowball sampling	Five main themes as follows: from novice nurses to nurse who care for Covid-19 patients; various learning methods focused on providing care to Covid-19 patients; work experiences and confrontations with Covid-19; various feelings that arise when being a nurse caring for patients with Covid-19; power of novice nurse to bring along positive changes.
8. Smith et al. (2021)	USA	To examine the impact of Covid-19 and preparedness for professional practice of NGNs	340 NGNs	mixed-methods descriptive study	More than half (67.5 %, n = 295) of NGNs reported changes to clinical experiences, ranging from 0 to 240 h transitioned to virtual (n = 187)). NGNs fear missing important details or doing something wrong in providing patient care. They identified the need for preceptor support,

(continued on next page)

Table 1 (continued)

Authors; Year	Country	Purpose	Sample	Research Design/methods	Findings
9. Xu et al. (2021)	CHINA	To analysis the current status and influencing factors of coping abilities of NGNs under public health emergency (Covid-19)	2035 graduating nurses	Quantitative, cross-sectional study.	guidance, teaching, and continued practice of skills. Positive coping dimension scores were higher than that of Chinese norm (2.04 ± 0.58 vS 1.78 ± 0.52 , $p = 0.00$), the negative coping dimension scores was less than the Chinese norm (1.08 ± 0.52 vS 1.59 ± 0.66 , $p = 0.00$) NGN may be somewhat more medically knowledgeable and thus more able to respond to public health emergencies than the general public. Psychological reactions such as fear, worry about being infected by the disease. Uncertain state of disaster and worries are the awakening factors leading to higher level of their negative coping.
10. Zhou et al. (2021)	CHINA	To investigate the work experience of newly recruited male nurses during the Covid-19 pandemic.	9 male nurses newly recruited for the Covid-19 wards	Qualitative approach; semi-structured interviews by phone or video calls.	Three themes were extracted: - negative emotions at the beginning of COVID-19 epidemic, which was caused by changes in working conditions and content, but also prompted the nurses to change the way of coping with the crisis. Second, they gradually mastered the working skills and psychological training to cope with Covid-19 and developed a positive attitude toward life and a high sense of professional responsibility. Finally, we learned about their needs to respond to public health emergencies such as the Covid-19 pandemic.

Table 2

Critical Appraisal Checklist for qualitative studies included.

Study/Criterion*	Al-Adawi et al. (2021)	Crison et al. (2021)	García-Martín et al. (2020)	Lancaster et al., (2021)	Naylor et al. (2021)	Sarnkhaowkhom et al. (2021)	Zhou et al., 2021
1. Aim and objectives clearly described	Y	Y	Y	Y	Y	Y	Y
2. Research methods appropriate	Y	Y	Y	Y	Y	Y	Y
3. Research design appropriate to address the aim	Y	Y	Y	Y	Y	Y	Y
4. Recruitment of participants adequately described.	Y	Y	Y	Y	Y	Y	Y
5. Data collection addressed.	Y	Y	Y	Y	Y	Y	Y
6. Relationship between researcher and participants has been adequately considered	Y	Y	Y	Y	Y	Y	Y
7. Ethical issues adequately taken into consideration	Y	Y	Y	Y	Y	Y	Y
8. Data analysis sufficiently rigorous	Y	Y	Y	Y	Y	Y	Y
9. Findings clearly described	Y	Y	Y	Y	Y	Y	Y
10. Value of the research is adequately described	Y	Y	Y	Y	Y	Y	Y

(The Joanna Briggs Institute, 2017).

Key: Yes: Y; Can't tell = CN; No = N.

(2021); and Zhou et al. (2021). Two studies utilised a quantitative approach, Chen et al. 2021 and Xu et al. (2021). One study used a mixed method design, Smith et al. 2021. The studies were conducted in different countries, namely: (1) Two were conducted in China (Xu et al., 2021; Zhou et al., 2021); (2) Four were conducted in USA (Crison et al., 2021; Lancaster et al., 2021; Naylor et al., 2021; Smith et al., 2021); (3) One study was conducted in Iran (Al-Adawi et al., 2021); (4) One study was conducted in Spain (García-Martín et al., 2020); (5) One was conducted in Asia (Sarnkhaowkhom et al., 2021) and (6) one in Switzerland (Chen, et al., 2021) (Table 1). The articles reviewed revealed the following overarching themes (Table 4):

1. Organisational challenges faced by graduate nurses during transition into practice in the COVID-19 pandemic

2. Personal challenges experienced by graduate nurses in their transition into practice in the context of the COVID-19 pandemic
3. Positive outcomes resulting from the transition of graduate nurses during the COVID-19 pandemic;
4. Factors which facilitated the transition of graduate nurses from student to practice in the COVID-19 pandemic.

6. Discussions

The purpose of this integrative review is to identify and present the literature on transition of graduate nurses from student to practice during the COVID-19 pandemic. The data from the ten reviewed research articles revealed four themes:

Table 3
Critical Appraisal Checklist for quantitative and mixed method studies included.

Study/Criterion*	Chen et al. (2021)	Smith et al. (2021)	Xu et al. (2021)
1.The criteria for inclusion in the sample were clearly defined	Y	Y	Y
2.The study subjects and the setting were described in detail	Y	Y	Y
3. The exposure was measured in a valid and reliable way.	Y	Y	Y
4.Objective, standard criteria were used for measurement of the condition	Y	Y	Y
5. Confounding factors were identified?	Y	Y	U
6.Strategies to deal with confounding factors were stated	Y	Y	U
7.The outcomes were measured in a valid and reliable way	Y	Y	Y
8.Appropriate statistical analysis was used	Y	Y	Y

Source: JBI Critical Appraisal Checklist for Analytical Cross Sectional Studies (2017).

Key: Yes = Y; No = N; Unclear = U; Not Applicable = N/A.

1. Organisational challenges faced by graduate nurses during their transition into practice during the COVID-19 pandemic;
2. Challenges experienced by graduate nurses in their transition into practice in the context of the COVID-19 pandemic;
3. Positive outcomes resulting from the transition of graduate nurses during the COVID-19 pandemic; and
4. Factors which facilitated the transition of graduate nurses from student to practice during the pandemic

6.1. Organisational challenges faced by graduate nurses during their transition into practice during the COVID-19 pandemic

Common organisational challenges encountered by graduate nurses were revealed in six studies namely: [García-Martín et al. \(2020\)](#); [Naylor et al. \(2021\)](#); [Sarnkhaowkhom et al. \(2021\)](#); [Zhou et al. \(2021\)](#); [Smith et al. \(2021\)](#); and [Lancaster et al. \(2021\)](#). This theme is supported by the following two categories: 1) Organisational issues and 2) Lack of support and mentoring of graduate nurses.

6.1.1. Organisational issues

The majority of the studies revealed that graduate nurses encountered organisational challenges in their transition into practice during the COVID-19 pandemic. These challenges included: shortage of resources, burnout syndrome, patient overcrowding, working longer hours and continuous relocations and ever-changing protocols ([García-Martín et al., 2020](#); [Naylor et al., 2021](#); [Sarnkhaowkhom et al., 2021](#); [Zhou et al., 2021](#); and [Smith et al., 2021](#)). The COVID-19 pandemic resulted in health facilities admitting many acutely ill patients, which impacted heavily on the available resources. It is a fact that all nurses were overburdened by patient screening as well as taking care of all COVID-19 emergencies.

6.1.2. Lack of support and mentoring

[Sarnkhaowkhom et al. \(2021\)](#) and [Lancaster et al. \(2021\)](#) indicated that lack of support and mentoring was identified as a common challenge experienced by graduate nurses during transition in the midst of the COVID-19 pandemic. Due to acute staff shortages, not enough experienced nursing staff were available to shadow the graduate nurses. Additionally, information was not readily available for graduate nurses on transition during the pandemic. Missed opportunities for mentoring graduate nurses could be related to the fact that many of those experienced nurses were overworked or even quarantined due to COVID-19

Table 4
Themes, Categories and sub categories of the integrative review.

Themes	Categories	Sub -categories
1. 4.1. Organisational challenges faced by graduate nurses during transition into practice in Covid-19 pandemic	4.1.1 Organisational issues	<ul style="list-style-type: none"> • Shortage of resources • Burnout syndrome • Overcrowded service by the current pandemic • Working longer hours • Continuous relocations and ever-changing protocols
	4.1.2 Lack of support and mentoring	<ul style="list-style-type: none"> • Lack of shadowing for novice nurses • Scarce of information and formation resources
4.2. Personal challenges of graduate nurses' transition into practice in the context of Covid-19 pandemic	4.2.1 Altered transitions to new nursing roles	<ul style="list-style-type: none"> • Adaptation to changes related to new pandemic • Reduction of learning opportunities • Changes to on-the-job training/ Virtual learning
	4.2.2 Inadequate preparedness for dealing with Covid-19	<ul style="list-style-type: none"> • Lack of Competencies regarding Covid-19 • Lack of Covid-19 pandemic knowledge and guidelines • Lacked experience in dealing with high acuity level patients • Inadequate readiness for practice during Covid-19 • Fear of making errors • Concern for huge responsibility
	4.2.3 Psychological reactions	<ul style="list-style-type: none"> • Fears related to risk of being infected • Stress and anxiety for being a burden for their fellows' • Overwhelming emotions
	4.2.4 Personal plans affected	<ul style="list-style-type: none"> • Postponed and cancelled plans. • Difficulty in finding a job, licensing and certification delays
4.3. Positive outcomes related to graduate nurses' transition during Covid-19	4.3.1 Positive perceptions of nurses in dealing with Covid-19	<ul style="list-style-type: none"> • Pride in profession, • Boost in confidence • Sense of responsibility
	4.3.2 Opportunities gained amidst the pandemic	<ul style="list-style-type: none"> • Ability to learn and develop while doing the job • Gaining unexpected learning Experiences • Opportunity to have a job before or during Covid19.
4.4. Factors which facilitate graduate nurses' transition from student to practice in Covid-19 pandemic	4.4.1 Organisational factors	<ul style="list-style-type: none"> • Better planning • Availability of PPEs • Nursing school preparation for the pandemic • Adequate emergency training
	4.4.2 Supportive learning environment	<ul style="list-style-type: none"> • Preceptorship • Support from senior staff members • Psychological support

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Table 4 (continued)

Themes	Categories	Sub -categories
	4.4.3 Individual factors	<ul style="list-style-type: none"> • Positive attitude Accepting nursing as a calling Ability to work with colleagues Higher resilience Background Knowledge of infection control

infection.

6.2. Personal challenges experienced by graduate nurses in their transition into practice in the context of COVID-19 pandemic.

Several personal challenges in connection with transitioning in the context of the COVID-19 pandemic were revealed in the bulk of the studies (Crismon et al., 2021; Naylor et al., 2021; Smith et al., 2021; Sarnkhaowkhom et al., 2021; Chen et al., 2021; García-Martín et al., 2020; Xu et al., 2021; and Zhou et al., 2021). These challenges included the following: altered transition to new nursing roles; inadequate preparedness for dealing with the COVID-19 pandemic; psychological reactions and personal plans affected.

6.2.1. Altered transitions to new nursing roles

The transition of graduate nurses was mostly characterised by graduate nurses having to adapt to inconsistencies related to the COVID-19 pandemic. The altered transition to new roles also resulted in the reduction of learning opportunities and changes in the 'on the job training' (Crismon et al., 2021; Smith et al., 2021; Naylor et al., 2021; and Sarnkhaowkhom et al., 2021). In this regard, graduate nurses had to quickly adjust to new methods such as strict infection control measures. Another instance could be that they had limited opportunities to become properly oriented due to social distancing and the fact that the majority of the focus was on the pandemic itself.

6.2.2. Inadequate preparedness for dealing with the COVID-19 pandemic

Chen et al. (2021); Crismon et al. (2021); and Sarnkhaowkhom et al. (2021), indicated that graduate nurses were ill prepared to deal with the COVID-19 pandemic. In support of this the studies revealed the following: incompetency and lack of knowledge regarding the COVID-19 pandemic. Graduate nurses were overwhelmed with huge responsibilities and feared making mistakes as they felt inadequately prepared for dealing with the pandemic. Notably, feelings of inadequacy could be related to the fact that during training, the graduate nurses were never taught about the novel Corona virus. Moreover, nursing care of critically ill patients infected with COVID-19 put an enormous pressure on these graduate nurses.

6.2.3. Psychological reactions

Studies revealed that graduate nurses had to deal with several psychological reactions during the transition during the COVID-19 pandemic (Chen et al., 2021; García-Martín et al., 2020; Naylor et al., 2021; Xu et al., 2021; and Zhou et al., 2021). Graduate nurses' fears were related to the risk of becoming infected with COVID-19 during the pandemic. They experienced overwhelming emotions when dealing with the number of COVID-19 related deaths. In addition, they felt stress and anxiety at being perceived as a burden for their fellows. According to Grande et al. (2021), nurses were inadequately prepared for dealing with the intensity of the COVID-19 pandemic, which ravaged global citizens. The new graduates were aware that nurses were not spared from becoming infected and were also dying as a result of COVID-19 related complications. In that regard, enormous psychological reactions could not be avoided by the graduate nurses who transitioned

within the confines of a very uncertain and frightening COVID-19 pandemic environment.

6.2.4. Personal plans affected

Findings pointed out that individual plans of graduate nurses were affected as a result of the COVID-19 pandemic (Crismon et al., 2021); many of their plans were postponed or cancelled. Opportunities for finding a job were also hindered by delays in certifications and registration of jobs during the pandemic. In agreement, Huang, Chen, Chen and Wang (2020) stipulate that the majority of the countries had to temporarily withhold registration licensure offices including accreditation systems in order to curb the spread of the virus. These nurses, amongst others, could neither graduate nor register as newly qualified practitioners and this resulted in delays for placements for orientation and practice.

6.3. Positive outcomes resulting from the transition of graduate nurses during COVID-19

The findings suggested that there were some positive outcomes for graduate nurses amidst the Covid-19 pandemic (Crismon et al., 2021; Naylor et al., 2021; Sarnkhaowkhom et al., 2021; and Smith et al., 2021). During data extraction, the following categories were revealed: (1) Positive perceptions of nurses in dealing with the COVID-19 pandemic and (2) Opportunities gained amidst the pandemic.

6.3.1. Positive perceptions of nurses in dealing with COVID-19

Crismon et al. (2021) and Naylor et al. (2021) highlighted the fact that nurses received much recognition as front line workers in the fight against COVID-19. As a result, graduate nurses developed a sense of pride, responsibility and confidence in being nurses. In support, Sarnkhaowkhom et al. (2021) also indicated that novice nurses brought a positive change to many COVID-19 patients. Most countries recognised the bravery of its nurses when dealing with this feared novel COVID-19 virus. It is pleasing to note that graduate nurses also realised their significance and contribution in the war against the deadly virus.

6.3.2. Opportunities gained amidst the pandemic

The findings revealed that graduate nurses were given the opportunity to learn whilst doing the job (Sarnkhaowkhom et al., 2021). Chen et al. (2021) and Smith et al. (2021) concurred, stating that providing care to patients with infections improved their competence in communicating with such patients. In the fight against the COVID-19 pandemic many of these novice nurses were employed in order to alleviate the shortage of nurses. The assertion is that graduate nurses were exposed to new COVID-19 guidelines and dealing with critically ill patients. In this regard, they were able to learn and perform unfamiliar lifesaving procedures which also enhanced their skill development and intrinsic motivation.

6.4. Factors which facilitated the transition from student to practice by graduate nurses during the COVID-19 pandemic.

The findings suggested there were factors which could have been better facilitated and so enhanced the transition from student to practice by graduate nurses during the pandemic (Chen et al., 2021; Crismon et al., 2021; García-Martín et al., 2020; Naylor et al., 2021; Lancaster et al., 2021; Xu et al., 2021; and Zhou et al., 2021). During data extraction, the following factors were identified: organisational; supportive learning environment and individual factors.

6.4.1. Organisational factors

Structural factors that would help the graduate nurses to effectively transition from school into practice included better planning, availability of PPEs, adequate preparation for pandemic and emergency situations (García-Martín et al., 2020; Zhou et al., 2021; Lancaster et al.,

2021; and Xu et al., 2021). In support, Naylor et al. (2021) agreed that skills learnt during nursing school helped them continue to work during the critical times of the pandemic. Adequate preparation for these novice nurses would help them have a positive experience and adjust and easily move into practice.

6.4.2. Supportive learning environment

The majority of the findings highlighted that the novice nurses should be allowed to gain experience in a conducive supportive learning environment (García-Martín et al., 2020; Zhou et al., 2021). In agreement, Smith et al. (2021), emphasised the need for preceptor support, guidance, teaching, and continued practice of skills. In addition Wang et al. (2020) suggested that nurses require adequate support and empowerment such as psychological therapy to equip them in dealing with the COVID-19 pandemic related trauma. Understandably, graduate nurses also need to be adequately supported through appropriate supervision. This kind of support would help to alleviate uncertainty and build their confidence (Khunou 2019).

6.4.3. Individual factors

Chen et al. (2021); Crismon et al. (2021); García-Martín et al. (2020); and Naylor et al. (2021) identified those innate characteristics that contribute to the effective transition of graduate nurses during the COVID-19 pandemic. Factors such as a positive attitude, resilience and acceptance of the nursing profession contribute immensely to an effective transition. Notably, graduate nurses formed part of the whole front liners in the fight against the deadly COVID-19 pandemic. As a result, they needed to develop adaptive coping mechanisms to effectively navigate into the profession during the pandemic. The use of self and positive attitudes would help them to be mentally healthy and also boost their immune status. According to Hossain and Clatty (2021) resilience assists in reducing the impact of stress, panic and hopelessness related to trauma resulting from the COVID-19 pandemic.

6.5. Limitations

This review was conducted in the middle of the COVID-19 pandemic. However, there is limited evidence from literature with respect to the impact the COVID-19 pandemic had on graduate nurses when transitioning from student to practice in a specific African context. Therefore, future studies may wish to explore the impact of the COVID-19 pandemic on the transition of graduate nurses during the pandemic in an African context.

7. Conclusion

This review sought to identify and present literature on the transition of graduate nurses from student to practice during the COVID-19 pandemic. The review identified that graduate nurses faced challenges which negatively impacted their transition. Despite all the identified challenges, positive outcomes were also identified in that graduate nurses felt a sense of pride in their profession which in turn, boosted their confidence and gave them a sense of responsibility. Furthermore, the review identified some organisational and individual factors as well as a supportive learning environment which could further facilitate the transition of graduate nurses from student to practice during the COVID-19 pandemic.

However, there is a lot that can be done to address these challenges including provision of adequate support and preparedness to deal with a pandemic. The provision of adequate support can be in the form of assigning new graduate nurses to mentors who will guide them during the pandemic, providing them with effective training, and proper logistics including personal protective equipment (PPE).

Transition from student to practice can be daunting, especially during a pandemic. It is recommended that psychological interventions should be adequately available to those novice nurses, in order to

alleviate the transitional shock. Collaboration between the nursing education institutions and health organisations can assist in bridging the theory and practice gap especially when dealing with infection control, emergencies and health disasters. Short learning courses on management of acute critically ill patients could prove beneficial in equipping graduate nurses with skills.

It is recommended that further studies should be conducted, especially in African countries, in order to obtain a clear understanding of the graduate nurses transition during the pandemic. The majority of African countries are resource challenged when compared to the developed countries. Hence more robust strategies would be required to support the graduate nurses during the transition period. Mentoring programmes should be centred on dealing with emergencies.

8. Authors' contribution

Both authors equally participated in selection and critical appraisal of articles. The authors discussed the findings and all discrepancies were resolved consensually. In the data analysis and interpretation stage, themes were identified to provide clearer results for discussion. They both compiled and edited the manuscript.

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.

Acknowledgement

The authors acknowledge authors of the research work used in this review. The authors declare that this literature review was not funded. Both KLM and SHK contributed equally by conceptualising the topic, conducting the literature review and writing the manuscript.

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