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**The Impact of the COVID-19 Pandemic on Nursing Students and Their Nursing
Judgement and Decision Making**

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Abstract

The COVID-19 pandemic led to major changes in the field of healthcare. COVID-19 has changed how providers and staff interact with patients and each other, limited access to healthcare in some groups, and led to changes in healthcare education in academia. To date, there has been little research conducted on the pandemic and the effects it had on nursing students. Current literature focuses on the pandemic and how it impacted already practicing and licensed healthcare workers such as registered nurses. Additional research is needed to assess those who were in school during the pandemic. In nursing education, there was a shift from nearly full in-person learning and training to nearly all online instruction and simulation. For healthcare professions, especially in the field of nursing, it is imperative that students receive sufficient in-person experience to appropriately care and manage a patient's health. Inadequate nursing knowledge can cause serious harm to the patient.

This systematic literature review will assess the perception of the impact of the COVID-19 pandemic on new graduate nurses and their nursing judgment/decision making. This topic is centered around Benner's Novice to Expert theoretical framework. This theory provides a structured method to rank the level of nursing experience registered nurses perceive new graduate nurses are exhibiting in practice. A comprehensive literature review will be conducted on the research that currently exists regarding the impact of COVID-19 pandemic on nursing students following grounded theory methodology.

The Impact of the COVID-19 Pandemic on New Graduate Nurses and Their Nursing Judgement and Decision Making

Purpose and Background/Significance:

Since the Spring of 2020, the coronavirus disease pandemic has had a significant impact on health professions education. The new social distancing recommendations resulted in the cancellation of most face-to-face encounters and a shift to virtual learning. Due to these changes, imposed by the pandemic, virtual education became standard and resulted in both advantages and disadvantages for learners, instructors, and institutions (Manlapaz & Hoffman, 2022).

Nurses must be capable of making quick and relevant decisions pertaining to the care of a patient. This includes understanding patient status and diagnosis, using evidence-based rationale when providing care, and understanding rationale behind the course of treatment. If a nurse is unable to do so, this can lead to poor patient outcomes. Current nursing research identifies a nurse's experience, culture of the nurse practice environment, education, nurse understanding of patient status, situation awareness, and autonomy as influential to decision-making. Experience represented the largest influence on decision-making in acute care nursing (Nibbelink & Brewer., 2017). New graduate nurses following the Covid-19 pandemic experienced less in-person experience and more online experience.

A majority of graduate nurses were not able to attend clinical practice on COVID-19 units in their final year of education (Palese et. al., 2022). However, due to shortages of staffing, Palese et. al. (2022) discovered new graduate nurses were being hired into high acuity units without any transition program. In Palese et. al. (2022) study of 323 students in Italy, it was found that new graduate nurses perceived themselves as more competent than new graduate

nurses hired onto non-COVID-19 units. There is insufficient data on how preceptors perceived the competency of these new graduate nurses. Along with the pandemic there were a large number of new graduate nurses who were employed on high acuity units without any previous experience or transition program (Baudoin et. al., 2022; Palese et. al., 2022), and this lack of clinical judgment and critical thinking raises serious concerns for the safety of their future patients.

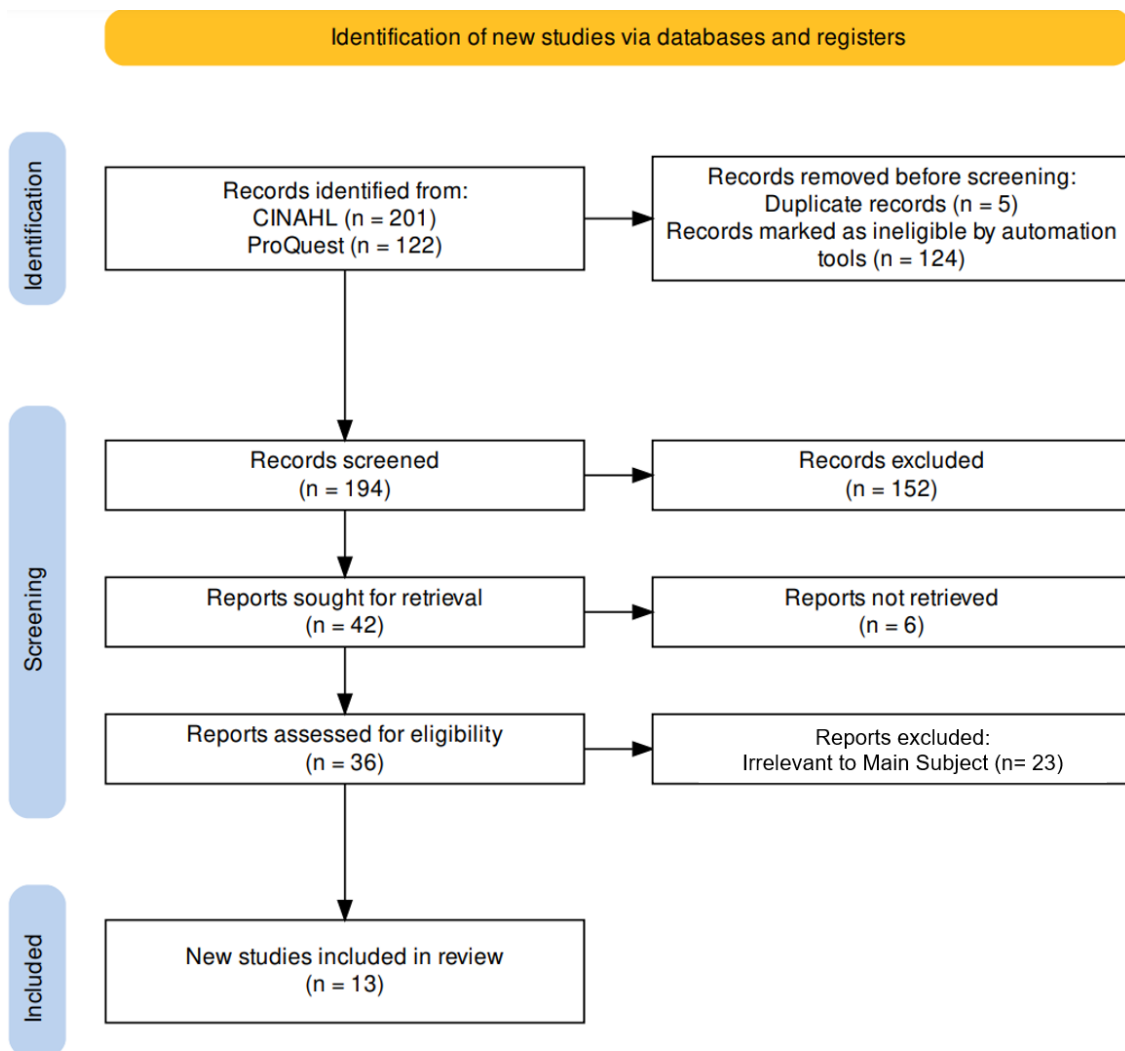
As current senior nursing students at Western Michigan University, we have actively experienced the effects of the covid-19 pandemic since our freshman year. All four years of our undergraduate degree included high amounts of virtual lectures and simulations. The purpose of systematic literature review is to explore the nursing judgment and decision-making capabilities and challenges of new graduate nurses through current research studies.

Methodology

The literature review was conducted using The Cumulative Index to Nursing and Applied Health Literature (CINAHL) database and Proquest Nursing. These databases were solely used due to their strong relevance to nursing and no other healthcare professions. Primary keywords used to search the databases Covid-19, coronavirus, and pandemic. The results of this primary search were narrowed by using key phrases such as “nursing students” or “student nurses” and included “online learning”, “E-learning” and “distance learning”. Inclusion criteria included academic or peer-reviewed journals to ensure reliability, and publication from the year 2020 to 2023. Inclusion criteria was also based on journals containing information pertaining to nursing judgment and decision making of nursing students and new graduate nurses during and after the COVID-19 pandemic. Results were not limited to primary research. Results were rejected if the

research was conducted outside of the United States. Another exclusion criteria were those studies involving data in relation to licensed practical nursing students, and only included information about the school of an RN, or registered nurse, in both baccalaureate and associate degree nurse programs. This literature review encompasses all nursing students on track to receive their registered nurse license from freshman year to senior year. This inclusion and rejection criteria fit most with what the primary question of this research is assessing.

Table 1
Prisma diagram of systematic literature search



Review of the Literature

Impact on Mental Health

To gain insight on the impact of COVID-19 on nursing students, recent research was gathered on the mental and emotional health of nursing students during and after the pandemic. Specific effects pertain to decreased academic self-efficacy, lower quality of life from a psychological standpoint, and lack of connectedness. After exclusion criteria, four articles were identified as pertinent to mental health with respect to the focus of this literature review. A cross-sectional study designed by Han et al. (2022) examined the effect covid-19 played on nursing students' academic self-efficacy, which functions as a critical predictor of students' success in the science field. The study was conducted on 113 undergraduate nursing students and results revealed that perfectionistic concerns and e-learning stress indirectly affected academic self-efficacy via the acculturative stress path. Ultimately, the stress that Covid-19 has inflicted on students is serving as a barrier to achieving academic success. Similarly, A pilot study on 23 senior undergraduate nursing students completed by Gulley et al. (2021) suggests nurses with low levels of self-efficacy would not perform behaviors necessary to care for their patients, a practice that would result in less-than-optimal patient outcomes. Another cross-sectional study completed by Keener et al. (2021) examined the relationship between quality of life and resilience during the unprecedented pandemic and social distancing requirements among 152 nursing students. Through a survey design, 53.6% of student responses indicated a low quality of life in the psychological domain. Specific areas that contributed to this identified were the overwhelming workload of online classes, changing course expectations, financial hardships, and maintaining good grades while taking classes remotely (Keener et al., 2021). Likewise, a qualitative descriptive study by (Iheduru-Anderson & Foley, 2022) interviewed 16 nursing

students and found a recurring theme that students experienced a lack of connectedness between professors and peers, which in turn, intensified mental health concerns of depression and loneliness. Although mental and emotional health is not directly examining new graduate nurses' judgment and decision making, it is important to understand the wellness factors that allow for optimal learning to promote career success and optimal patient outcomes.

Impact on Motivation and Engagement

This section aims to assess how the shift to online education affected nursing students. After exclusion criteria, four articles were identified highlighting motivation and engagement with respect to the focus of this literature review. Liesveld et. al. (2023) found a theme that described the lowering of expectations upon the start of the pandemic from 165 nursing student responses in their qualitative study. It was also found in this same thematic analysis that nursing students faced challenges with staying motivated to learn in a setting other than the classroom, which in turn raised issues of time management. In addition, Penrod et. al. (2022) quantitatively identified in a survey of 156 students that felt online learning formats cause a loss of motivation, and that self-motivation and self-discipline were the key factors to generating success in online school. Likewise, in a reflexive thematic analysis by Goodwin (2022), twelve four-year nursing students described a large preference for face-to-face learning. Asynchronous learning was associated with specific challenges related to poor retention, difficulty remaining motivated, and maintaining focus on content and learning outcomes.

Similar to the loss of motivation experienced by students, there was a major loss in engagement in the learning experience. Bowser et. al. (2022) concluded after conducting a cross-sectional descriptive study how online learning resulted in severely less engaging content, which

made it difficult for students to stay focused during instruction in a sample of 522 students. The researchers believed that this may be due to the mentality of students not accepting online learning as a permanent change, and rather as a temporary situation. If the students believe they will be returning to face-to-face instruction, they may not see a reason to engage in virtual learning sessions (Bowser et al., 2022). Bowser et al. (2022) also found what they described as “zoom-fatigue”. With a majority of learning interactions over video conference calls, students will remain disengaged with the learning process regardless of how engaging the instructor or material is.

Impact on Psychomotor Skills

The next area of the literature review is dedicated to studies that assess both the nursing students' psychomotor skills and their preparedness to enter the workforce. This appears to be an area with limited research due to the proximity of the pandemic. After exclusion criteria, three articles were identified as relevant to psychomotor nursing skills with respect to the focus of this literature review. The study by Aldridge et al. (2021) addressed using a phenomenological approach how the pandemic led to shorter lab times, less practice time, and few open labs, which in turn inhibited skill learning for 8 interviewed students. Undergraduate nursing students were interviewed, and a commonality among their answers was the desire for many practice opportunities when learning psychomotor skills, which was not available during the pandemic. In a separate descriptive study by Lanahan et al. (2022), 103 nursing students and those with less than two years of experience were sampled using the Casey-Fink Readiness for Practice Survey (Casey et al, 2011). Participants reported a reduction in comfort in performing common nursing skills independently and decreased comfort when caring for a multiple patient assignment. Michel et al. (2021) identified in a split study with 1,312 respondents, included both qualitative

and quantitative data on how simulation is an effective way to practice skills and connect didactic learning to real-world situations, which in turn can increase nursing students' confidence. Despite this, it was found that students were content that online simulations would count towards their required clinical hours, however, direct patient care experiences were preferred (Michel et. al., 2021).

Impact on Judgment and Critical Thinking

The final area of the literature review is centered on peer-reviewed studies that accurately assessed nursing students' perceived critical thinking skills and judgment calls. After exclusion criteria, two articles were applicable on nursing judgment and critical thinking in respect to the purpose of this literature review. A cross-sectional and comparative study completed by Foster et al. (2021) assessed clinical competency through a questionnaire for 57 students who relied on virtual simulations to learn during the covid-19 pandemic. The study revealed that students did perceive a sense of clinical competence through virtual simulation, however scores were higher for senior-level students and for those who experienced some traditional learning.

In a recent study by Banjo-Ogunnowo & Chisholm (2022), 14 students in their maternal-pediatric course were taught in traditional classroom lectures and 18 students were taught through virtual classroom and simulations. This study was a quantitative retrospective cohort study that compared outcomes of students who were taught virtually during Covid-19 to a group that received traditional learning in Texas. The results indicated no difference in clinical judgment, clinical decision making, or critical thinking between the two groups. The data also showed that there was no relationship between traditional or virtual learning and NCLEX-RN pass rates. It was suggested that online simulation is a suitable method to prepare students for

their future careers and can be used if more pandemics or natural events occur to educate nursing students.

Table 2
Summary of the articles included in the systematic review

Author, Year, Aim	Method	Sampling	Country	Relevant Findings	Limitations and Comments
Aldridge (2021) . Aim: To assess the lived experience of undergraduate nursing students learning psychomotor skills during the COVID-19 pandemic.	A phenomenological approach, undergraduate nursing students were interviewed via zoom about their experiences learning psychomotor skills during the pandemic	Snowball sampling. Eight participants were primarily female (n = 7), in their early to mid-twenties, and represented three nursing schools from different geographic areas in the U.S.	USA	Thematic analysis revealed three main themes. "Finding My Own Way" described adapting learning styles and advocacy for learning. Sub-themes included perseverance and comradery. "Learning the Skills" described modifications to skills learning. Sub-themes included grace by professors, smaller group sizes, less practice, and "my brain is split in half," describing the challenges of giving dual attention to COVID-19 and skills learning. "Stress of the Pandemic" described the stress of quarantine, isolation and online learning.	Since snowball sampling was used, participants may have had their own reasons for volunteering to participate in the study. Thus, experiences of other types of students may not have been captured. Also, participants may not have felt completely comfortable sharing their experiences with the researchers
Banjo-Ogunnowo & Chisholm (2022) . Aim: Compared outcomes between articulating nursing student cohorts virtual learning during COVID-19 and traditional learning prior to COVID-19	Quantitative retrospective cohort study. Compared outcomes of the nursing students virtual learning during COVID-19 and traditional learning methods before COVID-19.	Convenience sampling. Group 1 (n = 14) participated in an 8-week traditional classroom lecture and an 8-week traditional hospital clinical experience from May to July 2019. Group 2 (n = 18) participated in 8 weeks of virtual classroom learning and 8 weeks of i-Human virtual patient simulations during the COVID-19 pandemic from May to July 2020	USA	No statistically significant difference was observed between the traditional group and virtual learning group was identified on the HESI Maternal pediatric Specialty exam. No statistically significant differences were observed on the HESI Exit exam or clinical judgment subscales; no relationship between the type of learning and NCLEX-RN pass rates	Due to small sample size and the limited sample population studied, results cannot be generalized to other populations of nursing students. Demographic data such as age, gender, and ethnicity for this group were not analyzed, so further analysis based on demographics was not possible. In addition, although all groups utilized simulation, variances in simulation facilitation and debriefing were not explored and may potentially account for some of the difference between groups.
Bowser et. al. (2022) . Aim: Undergraduate and doctoral students' satisfaction with remote and F2F learning regarding course organization and student engagement were examined.	A cross-sectional descriptive study was conducted	522 students voluntarily answered the survey questions. Of these students, 247 were in the BSN program, 40 were in the ABSN program, 127 were DNP students, and 34 were PhD students. Of the BSN students, 65 were first-year, 84 were sophomores, 68 were juniors, and 30 were seniors	USA	Results indicated that nursing students who enrolled in F2F learning preferred F2F to remote learning	Relied on student self-reported data collected at a time of high stress and change. Whether the level of dissatisfaction was specific to the learning situation or a generalized effect of the societal move to increased isolation and use of technology was

<p>Foster et. al. (2021). Aim: Examined the impact of these changes on undergraduate education and students' perceptions of clinical competence, along with use of virtual simulation in light of social distancing</p>	<p>Cross-sectional and comparative</p>	<p>Nonrandom sample consisted of junior (n = 25) and senior (n = 32) nursing students, total (n = 57). Sample inclusion criteria consisted of any undergraduate student, accepted into the nursing program who was at least 18 years of age.</p>	<p>USA</p>	<p>Scores were higher for senior-level students and for those who experienced some traditional learning. Scores on the SET and CCQ were positively correlated. Findings revealed that the students perceived a sense of clinical competence through virtual simulation.</p>	<p>unknown. Additionally, the first-year students answered questions about F2F learning experiences even though a remote learning environment primarily characterized the duration of their college experiences</p> <p>Participants in this study were enrolled from one site. Enrolling participants from multiple sites with larger sample sizes would add to the strength of the results in future studies. Also, there were missing data on some of the surveys. Reminders were used to encourage the completion of the surveys, but some student participants still did not complete all the survey questions in their entirety</p>
<p>Goodwin et. al. (2022). Aim: to explore undergraduate student nurses' views of online learning.</p>	<p>Reflexive thematic analysis was used to analyze focus group data from undergraduate nursing students. A qualitative descriptive approach guided this study.</p>	<p>Twelve students agreed to partake in the study, in three equal focus groups</p>	<p>USA</p>	<p>Two central themes described student preferences for learning environments and challenges associated with asynchronous learning. Participants reported a preference for face-to-face learning. Suggestions for optimizing remote learning include an emphasis on synchronous live sessions rather than asynchronous learning, incentivized learning, and a focus on ongoing formative informal assessment to maintain engagement. Specific challenges related to poor retention, difficulty remaining motivated, and maintaining focus on content and learning outcomes.</p>	<p>Although a purposeful sample was selected to enhance transferability, only one cohort of student nurses in one school of nursing was included; participants from other schools in other regions may have other, more varied, experiences. Findings are based on self-reports of participants, and this may also be viewed as a limitation. Furthermore, potential selection bias should be acknowledged, as participants may have had personal reasons for volunteering for the study; those who chose not to volunteer may have had different views.</p>
<p>Gulley et. al. (2021). Aim: describes associate degree nursing students' perceptions of self-efficacy regarding the ability to pass NCLEX-RN and perform clinical skills after being transitioned from traditional, face-to-face instruction to remote</p>	<p>This study was a quantitative study. Statistical analysis was based on participant response data using IBM SPSS® Statistics version 25 to perform a frequency distribution, an independent t-test, and measures of central</p>	<p>This convenience sample consisted of 23 participants (52%) from a cohort of 44 graduates in the May 2020 graduating class from an associate degree nursing program.</p>	<p>USA</p>	<p>18 of the 23 participants were classified as "Passed First Attempt" on the NCLEX-RN; the other five were classified as "Failed First Attempt/Unknown." Participants classified as "Failed First Attempt/Unknown" had the lowest</p>	<p>The pilot study is limited by a small sample size and results cannot be generalized to graduates of other ADN programs. Other limitations of the study that may have influenced perceived self-efficacy were</p>

online learning during the pandemic.	tendencies (mean, median).			self-efficacy rating in six of the eight items.	participant experiences during the transition to remote online learning and the completion of the survey after taking NCLEX-RN. Another limitation was that the topics for which self-efficacy were rated, that is, NCLEX-RN and clinical skills competency, were not considered independent of each other
Han et. al. (2022). Aim: To examine the factors that contribute to academic self-efficacy among ESL nursing students.	Cross-sectional study using path analysis	113 undergraduate ESL nursing students. A total of 122 participants who met the inclusion criteria were selected, but nine responses with incomplete answers were excluded.	USA	Perfectionistic concerns and acculturative stress directly affected academic self-efficacy. Furthermore, perfectionistic concerns and e-learning stress indirectly affected academic self-efficacy via the acculturative stress path. Results indicate the importance of developing a multifaceted intervention that considers diverse cultural and psychological factors to help ESL nursing students enhance their academic self-efficacy in e-learning environments	Future studies might explore the relationship between nursing program complexity and academic self-efficacy. Another limitation is that the present study used a cross-sectional design and did not address causal relationships among the variables of interest. Longitudinal or experimental research could provide a clearer understanding of the variables' interrelations over time and causal implications in the future. Future studies may also include academic outcome variables such as course or semester grades
Iheduru-Anderson & Foley (2022). Aim: to describe how prelicensure student nurses perceive academic support and their institutions' response during the 2020 COVID-19 crisis.	A qualitative descriptive design was employed for the study. Thematic analysis was used to analyze data obtained.	Purposeful sampling was used to select information-rich participants to answer the research question. 16 full-time pre-licensure student nurses from various nursing programs with associate degrees and baccalaureate degrees consented and participated in the study	USA	Six themes resulted from the data: Disorganization leading to chaos; technology and technical challenges; stress and frustration; am I prepared to be a nurse? not having money; mental health matters. This study validates the experiences of nursing students. Students' obstacles during the pandemic should be identified and mitigated to promote learning and academic success	The small sample size and descriptive research design limit the extension of the findings beyond the participants. The students were recruited from 4- and 2-year colleges that typically serve demographically different students. Students in 2-year colleges tend to be older and work full-time while going to school. These demographic differences may have affected the results of the study
Keener et. al. (2021). Aim: to examine the relationship between quality of life (QoL), resilience, and associated factors among nursing students during the unprecedented COVID-19 pandemic and subsequent	Cross-sectional study. Data were analyzed using descriptive, bivariate, and multiple linear regression analyses.	There were 152 nursing students (15.6% response rate) who completed the online survey. The sample was predominantly female (n = 143, 95%).	USA	Resilience, having online experience, and being well prepared for online learning were associated with each QoL domain. Remarkably, 21% to 54% of nursing student QoL scores indicated poor QoL.	This study was conducted in 1 school of nursing in an Appalachian region, limiting the generalizability of the findings. Lack of Wi-Fi or stable Internet may have hindered some students from accessing

social distancing requirements.

and responding to the survey. Furthermore, some students may have felt too overwhelmed or stressed to complete the survey

[Lanahan et. al. \(2022\).](#)

Aim: to explore the perception of preparedness in nursing students who transitioned to online and virtual learning platforms brought about by Coronavirus disease 2019

Descriptive, correlational, nonexperimental research design.

The sample size of 103 included nursing students and those with less than two years of experience. Data collection was attained through Facebook groups using the Casey-Fink Readiness for Practice Survey.

USA

As school support during the transition increased, comfort in performing nursing skills improved. As the number of patients within a nurse's assignment increased, comfort decreased. Participants expressed a desire for more hands-on in person education and postgraduate support. With the reduction in clinical hours during COVID-19, Learning Techniques and Trials and Tribulations revealed diminished readiness. Low scores within the Trials and Tribulations subgroup impacted feelings of comfort when performing nursing skills independently

The long-term reduction of clinical hours has yet to be determined regarding feelings of preparedness and its impact on patient outcome. Due to the placement of the assessment tool, the Casey-Fink Readiness for Practice Survey, several qualified participants were excluded since these participants stopped the questionnaire before answering the assessment tool

[Liesveld et. al. \(2023\).](#)

Aim: to identify challenges faced by pre-licensure students from associate degree and baccalaureate degree nursing schools

Qualitative and thematic analysis over a year of time.

58 responses from Spring of 2020 and 107 responses from Spring of 2021 were compared.

USA

For 2020, these eight themes were identified: Technology Issues; Concerns with Online Learning Methodology; Student Emotional Responses; Faculty Actions/Reactions; Communication; Student Concerns about Not Ready to Go Out and Practice; Adapting to Change; and Living with the Pandemic. For 2021, the eight identified themes were: Technology Issues; Student Emotional Responses; Teacher/Program Issues/Challenges; Communication; Critical Thinking/Reasoning; Online Learning: Clinical and Didactic; Student Personal Issues; and Excessive Workload. We found that overlap exists among the three themes of Technology Issues, Student Emotional Responses, and Communication; and each of the remaining five themes was found to be unique

Challenges that nursing students faced with the COVID-19 pandemic from this study were remarkably similar

[Michel et. al. \(2021\).](#)

Aim: To explore nursing students' perspectives about the effects of the pandemic on their education and intention to join the nursing workforce

Online survey to elicit both quantitative and qualitative data

The final sample included quantitative data on 772 students and qualitative data on 540 students.

USA

Largely (65.1%), students reported that the pandemic strengthened their desire to become a nurse; only 11% had considered withdrawing from school. Qualitatively, students described the effect of the pandemic on their psychosocial wellbeing,

Utilized a cross-sectional survey and a singular text-based qualitative question to elicit nursing students' perspectives and intentions. Participants were predominantly White, in their junior

<p>Penrod et. al. (2022). Aim: to research trends in community college students' perceptions of online learning during the COVID-19 pandemic and discover factors related their success, applying this knowledge to nursing education</p>	<p>cross-sectional, descriptive, correlational study design</p>	<p>A convenience sampling of 2,522 students was invited to participate in the study between the two community colleges, but at the end of the sampling period total end response was 156.</p>	<p>USA</p>	<p>adjustment to online learning, and challenges to clinical experiences</p> <p>A strong correlation was found between instructors providing ways to effectively communicate, making clear expectations, feeling of instructor connection, and promoting ease of transition to online learning. descriptive analysis indicated that nursing students showed no statistical difference in their responses in instructor communication, setting clear expectations and promoting an easier transition to online learning</p>	<p>and senior year of education, and were not equally distributed across the 5 US regions. These factors limited generalizability</p> <p>Students who did respond may not completely represent the wider population which may have produced sampling bias, there was only a 6.2% response result.</p>
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Discussion

Overall, there is overwhelming evidence indicating that the COVID19 pandemic impacted nursing students and their nursing judgment and decision making. Results of this literature review indicate that the pandemic played a toll on nursing students' mental health. Increased stress loads decrease academic self-efficacy, serving as a barrier to being successful in the field. This ultimately affects nursing judgment and decision making because course material is not being properly absorbed. Secondly, the pandemic proved to decrease the quality of life among nursing students, as it posed several challenges such as changing course expectations and lack of connectedness to peers and professors. Feelings of depression and loneliness were found to be intensified during the pandemic. All of these components are not considered desirable learning experiences and may result in inadequate knowledge, which can potentially jeopardize the safety of future patients.

In regard to motivation and engagement of students in their learning, there was a decrease in expectation experienced with the shift to online learning, which ultimately contributed to a

decrease in motivation and engagement to material. When an individual is not held to the high standard as previously expected, there is the concern of a decline in academic performance. With this decline, students are at risk of not retaining information learned which can negatively impacted nursing judgment or clinical decision making when working in a real-world setting. The lack of motivation that resulted in the data collected in this review may also negatively affect the way students comprehended and retained critical knowledge during their time as a student. Without adequate motivation to learn material, students may experience gaps of knowledge when practicing in their future careers, which could be harmful to patient outcomes.

Psychomotor skills play a significant role in how a nurse can carry out tasks. As COVID-19 subsides from its emergent nature, students have expressed their concerns of lack of confidence when it comes to hands-on skills. However, studies have shown that online simulations can be an effective way to teach psychomotor skills, students still express a desire for more in-person skill labs (Aldridge et al., 2021). Furthermore, if the student nurse does not feel comfortable performing nursing tasks independently, their judgment and decision making may be skewed in the workplace.

Nursing judgment and critical thinking is imperative to effectively care for patients. In this literature review, mixed results comparing in-person versus online learning groups of students in two separate studies were identified. This highlights the central question of this on how simulation and online learning compares to traditional education formats. In one study it was found that there was no significant difference, while in the other there was a favorable difference on those who had received traditional instruction in-person. While it has been uncovered that students prefer in-person learning over virtual simulation, results that indicate there is no difference in retention or accuracy of knowledge and performance could mean that

virtual simulation is just as effective as in-person learning, and that students' preferences are related to resistance to change.

Recommendations

More research is needed to fully understand the impact of online learning and simulation on new graduate nursing students and their preparedness for their careers. This includes both physical skills but more importantly their nursing judgment and decision making. Comparison studies between face-to-face and virtual learning environments need to be conducted in all semesters of nursing school to appropriately measure the differences in the two formats of education. Additionally, more research is needed to assess the long-term effects on nurses who experienced virtual instruction during the pandemic. Looking specifically at their ability to adapt and continue to learn after they have some years of experience.

Recommendations for a study would be to conduct a survey on new graduate registered nurses assessing their perceived level of judgment and decision making. The survey should also be conducted on experienced nurses to see their perceptions of the new graduate nurse's ability to perform. The results of the two surveys could assist in determining the level of impact online instruction and simulation has in comparison to in-person education and skill labs.

Conclusion

As the pandemic continues to evolve and continue, it is important that nursing students are equipped with the necessary education and experience before they enter the workforce as new graduate nurses. The shift to online learning reduced in-person clinical and lecture and replaced those hours with virtual simulation and video demonstrations. The purpose of this paper

was to explore the nursing judgment and decision-making capabilities and challenges of new graduate nurses through current research studies. The results of the systematic literature review found that there were impacts on mental health, motivation and judgment, psychomotor skills, as well as critical thinking of nursing students and new graduates. It is the hope that this literature review guides further research to accurately assess the effectiveness of virtual education on the very physical nature of nursing.

Limitations

Due to the specificity of the literature search, the findings and conclusions can only be accurately applied to experiences of those in the United States of America. Results can be extended to both students in baccalaureate programs and associate nursing programs as both of these degree formats encompass didactic and clinical learning. This literature reviews results may not be entirely applicable to individuals participating in licensed practice nurse programs (LPN) as the included results were specific to registered nurses. This is a different license, and therefore a separate set of responsibilities and scope of practice. Due to the small sample size of some of the reports included the results and identified themes may be difficult to generalize to other nursing students and new graduate nurses. Only two databases were utilized to synthesize literature review results. The collected data from this literature review may not be suitable to analyze long-term effects of the covid-19 pandemic, due to its recent and ongoing nature.

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