JANANY

JOURNAL OF THE AMERICAN NURSES ASSOCIATION - NEW YORK

The official, peer-reviewed, international, scholarly journal of the American Nurses Association - New York (ANA-NY) dedicated to disseminating quality and rigorous research, evidenced-based and quality improvement initiatives, case studies and reviews or applications of research to improve nursing practice, education and health care policy.

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Guidelines for Manuscript Submissions

Membership Requirements

At least one author must be a member of the American Nurses Association – New York (ANA-NY), preferably the first or second author. If the authors are not ANA-NY members, we encourage one of the authors to become a member. An author can also be a member of one of the constituent organizations of the ANA. Non-ANA-NY members may submit manuscripts on a case-by-case basis. Please reach out to us at journal@anany.org. Manuscripts accepted for publication will not incur any publication or processing fees.

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Manuscripts should follow the Publication Manual of the American Psychological Association (7th ed.).

The new rules adopt a five heading formatting of the manuscript. Level 1 is centered, boldface, title case heading; Level 2 is left-aligned, boldface and title case heading; Level 3 is left-aligned, boldface italic and title case heading; Level 4 is indented, boldface and title case heading with a period; and, Level 5 is indented, boldface italic, and title case heading with a period. See example below.

Data Presentation (Level 1)

Description of Respondents Technique (Level 2) By Age Identity (Level 3)

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- Reviews [systematic, integrative or scoping]
- Evidence-based practice initiatives
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- Quality improvement projects
- Commentaries on current issues and trends in nursing

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- Background: a short overview of what the article is about and its aims or goals
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Ethical Guideline for Authors

The author submits a manuscript only to one journal at any one time. One cannot submit previously published papers. Use appropriate tests and measures for research data analysis and interpretation. JANANY has the right to request raw and actual data. All manuscripts submitted must be the original work of the author.

Author can acknowledge individuals who helped in the conduct of the research to a certain degree. All listed authors must have actively been involved and contributed in all the steps of the research process, from research conceptualization to the write-up of the final version of the manuscript.

* We appreciate the work that Purdue University Online Writing Laboratory (OWL) offers to the public and allowing anyone to be able to use their available services.

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Send inquiries to: 150 State St., 4 FL Albany, NY 12207 USA journal@anany.org

The editor's vantage point: To publish or not - challenges for both authors and editors https://dx.doi.org/10.47988/janany.442384.1.2

Edmund J. Y. Pajarillo, PhD, RN BC, CPHQ, NEA BC, ANEF Editor-in-Chief

Whether or not scholarly work must be published should not even be a question for researchers and nurses. The publication and dissemination of research outcomes is an essential element of knowledge discovery, development and organization. It is the profession's lifeline in building, expanding and validating the body of knowledge of a discipline. The arduous, rigorous and scientific steps involved in research, creative work, innovations and other forms of scholarship do not end until these are disseminated, properly vetted, validated, and replicated. Publishing is a way to showcase one's work, but more importantly, for others to learn from, reflect, examine and verify outcomes for widespread application based on concrete, current, and relevant evidences.

Despite this verity, there are major issues that confront authors and journal editorial boards and staff. The single major hurdle for authors and researchers is the likelihood that their manuscript will be rejected or accepted with major revisions. There are many reasons why this is likely, and authors can reasonably persist in addressing reviewers' feedback until the manuscript is fit for publication.

Outright rejection is common. Journal editor Pickler (2021) reported over half (58%) of submissions in 2020 were desk rejections. An earlier article (Ali, 2010) gave a range of 20-30% of manuscript submissions to be blatantly unacceptable. There are many reasons for this increased rejection rate. These include unclear purpose or objectives of the research, ambiguous articulation of the research question, inadequate or substandard review of the literature to justify the research topic, lack of rigor in the methodology (weak research design, flawed sampling or sample size that is either poorly explained or not at all, variables that are not clear or well explained, results that are not lucid or do not circle back to the research purpose or question, etc.), the subject matter is not new and does not enrich the science, the theoretical assumption is unreasonable or obscure, or the statistical analysis is either wanting or inappropriate.

The choice of what research design to use can expose some researchers to many possible reasons that can result in manuscripts being rejected. Jacobowitz (2021) described 9 possible research design flaws, e.g., not obtaining permission to use an existing measurement tool, researchers creating their own data gathering instrument without following the usual requirements (pilottesting, screening the language used in the tool, untested or absent of internal validity, etc.), biased perspective based on researcher's beliefs or perception of a phenomenon, under-powered sampling that could likely compromise the accuracy of the findings, the focus of the analysis is mainly descriptive and has little or no consideration to the relationships or interrelationships between and among variables, and findings that are reported to be significant without explaining effect sizes.

Many of the rejection issues are quite evident, particularly manuscripts written for academic purposes or course requirements, e.g., final papers, research proposals, literature reviews, capstones, thesis or even dissertations. Professors, mentors and colleagues should offer guidance to aspiring researchers and authors. That is, if they are aware that their student, mentee or colleague submitted a manuscript. I was totally floored when I received a phone call from a colleague who was the chair of a conference's abstract review committee. Someone I know submitted an abstract that was inappropriate where I was listed as the supervising faculty! I have also seen capstone projects, typically at least 50 pages in length, shortened to 15 pages for publication review. Upon closer examination, the manuscript did not make sense because sections of the actual capstone paper were cut and pasted into the submitted article. There was another submission by a sole author whose topic was quite technical, medical and interesting but had no nursing perspective in it. It turned out that this submission was extracted from a study conducted by a team of researchers that included this author. Worse, this same article was already previously published elsewhere. There are many more inappropriate submissions that I can describe here. One can only wonder why a few authors would even think of doing these obviously unethical, unprofessional, and deceitful submissions.

Some do not even follow the journal's requirements in terms of blinding the submission, the prescribed writing style and edition, and proper placement of appendices. Submitted manuscripts require a structured abstract which is useful for preliminary understanding of the focus of the report. A structured abstract is also helpful when requesting colleagues to conduct peer reviews because it offers them the opportunity to ascertain if the subject matter is within their area of expertise or not. The inclusion of a structured abstract is often clearly listed as one of the submission requirements. Yet, there are still those who submit their manuscript with an unstructured abstract or none at all.

Editorial boards and reviewers struggle with these types of submissions. Desk rejections are often inevitable. The quality of the journal can be compromised when substandard research reports are reviewed and accepted despite blatant issues. Sending manuscripts out for review without prescreening can lead to peer reviewers shunning future work with journals that send out problematic manuscripts. In some instances, journal staff are left in a quandary between rejecting manuscripts or accepting with major revisions. Established and renowned academic journals do not have a dearth in manuscript submissions. However, it is often harder for one's manuscript to be readily accepted amidst many submissions and stiffer competition. New, up-and-coming journals, on the other hand, receive fewer submissions and often receive manuscripts with issues as in the aforementioned.

Being a new journal, *JANANY* often receives submissions from many new and aspiring researchers and authors. The mission of JANANY is aligned with the American Nurses Association – New York (ANA-NY), which is to foster high standards of nursing and

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promote the professional and educational advancement of nurses to improve healthcare. While it is a benefit for ANA-NY members, its intended audience is not limited to its members alone. It is an open-access, international peer-reviewed journal, so that all nurses can access its scholarly articles which can be applied to their respective work settings in order to enhance nursing practice, research, education and administration.

JANANY also works closely with the authors and tries to avoid outright rejections, unless the manuscript involves rigor, ethical, theory and design concerns. It is a completely understandable feeling of loss and frustration when one's manuscript is rejected. However, every rejection is a learning opportunity to improve on one's conceptualization, organizational, analytical and writing skills. Writing and being critiqued is a humbling experience. Authors should be driven to pick up the pieces and correct issues that led to the rejection or revisions. The adage that "I gave my all in writing this manuscript" is a one-sided perspective. Many feel offended and hurt with manuscript critiques. The review process is conducted by 2-3 reviewers and then by the editorial staff. It is a rigorous process for an obvious reason. Research results and claims borne out of substandard rigor, analysis, and writing put authors, reviewers, editors and journal consumers at harm's way. Reputation and careers can be compromised or sidetracked. The worst outcome is the deleterious effect on the body of knowledge of the professional discipline. Requests for revisions are suggestions and recommendations in order to improve an otherwise flawed analysis or writing.

After the author's initial read and the overwhelming feeling of rejection or revision, it is often best to set aside the manuscript for 2-3 days and just forget about it. Once ready, process the critique and recommendations without taking them personally. Set your mind into reconstructing the manuscript based on reviewers' good intention to help you make it better. Remember to put yourself in the perspective of the reviewer (readers) and the journal's aims and status. Yes, the topic is the expertise of the author, but writing in the perspective of the intended readers is sometimes overlooked. The author assumes that the subject matter has been conveyed well, when there are many components that were missed out or assumed to be understood by the readers. Constructing a three-column table where the first column contains the reviewers' comments and recommendations, the second column shows the author's explanations to address the concerns, as well as where to find the edits, deletions or additions, and the third column lists justifications or clarifications regarding comments or recommendations that the author did not integrate. Authors should also follow the journal's format of making edits. Follow the editor's instructions when advised to make the revisions within

the manuscript using track changes and highlighting newly-added text. It is a lot easier for the editors and staff to find your edits. Removing all the comments and rewriting the entire manuscript is adding more work for all. When reviewers offer firm and sound recommendations, make sure to follow through. If you decide not to, your justification must be compelling. The editorial staff consolidate the reviewers' comments and recommendations and emphasize those that really need to be addressed. There are instances when these concerns are not corrected and the justifications are weak. The manuscript is again returned to the author, making the process long and arduous.

One's writing can only get better with frequent edits and proofreading. It is an acquired and developed skill. The American Psychological Association (APA) style of writing is now in the 7th edition, and many of its rules have changed from prior versions. Make a real effort to refer to the latest manual. There are many websites that offer free and reputable help. Another important element to pay attention to are due dates. We all lead busy lives that due dates provide order and organization to the chaos and disorder that is characteristic of our daily routine. Communicate with the editorial staff if you are pressed for time and need an extension. Once you finish addressing the reviewers' comments, read the entire manuscript, proofread and make final edits. Make sure that the article is organized, coherent and all the issues have been addressed. An additional step that is usually helpful is requesting a colleague to read your revised manuscript and offer you honest and truthful feedback.

Being able to get past the revisions and eventually publishing one's manuscript is a major accomplishment. While this is an achievement on a personal level, it is foremost significant for the nursing profession. As nurses, we share the responsibility of expanding our science. Let us keep publishing our scholarly work. By collaborating with JANANY editors and reviewers, we can succeed in shepherding the science of our profession!

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ORIGINAL RESEARCH

Spring 2020 New Graduate Employment and Workforce Issues During the Pandemic: A Secondary Analysis of New York State and National Trends

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Abstract

Background: In March 2020, the nation faced a public health crisis, COVID-19, that prompted a national response of many states issuing state-wide "lock-down" orders. This also forced nursing schools throughout the country to instantly convert to other learning options and many clinicals cancelled, moved to online or simulated experiences. Graduation that year launched nursing students into a healthcare system that was operating in emergency mode facing unprecedented admissions and deaths due to the pandemic. While hiring experienced nurses was a priority for hospital administrators in New York state, at the epicenter of the east coast infections, graduating seniors everywhere faced a different job market and workplace environment. **Objectives:** The purpose of this secondary analysis focused on variables related to the job search, employment opportunities, and "news" about hiring new graduates in the year of COVID-19, comparing the 2020 reported experiences with previous years and focusing on New York. Using data collected and published by the National Student Nurses Association (NSNA), this study filtered and sorted the variables related to employment, perceptions of the job market, and nursing education experiences of student members who graduated in 2020 and focused to report on New York state vs. national comparisons workforce issues and outcomes of the abrupt educational changes that occurred. Methods: The deidentified data were exported from surveys distributed via SurveyMonkey® by NSNA in the Fall/Winter following Spring 2020 graduation. The data from 2020 included a sample of 3,074 responses that were cleaned, sorted, and coded for the descriptive quantitative analysis. They were filtered to compare New York only, with national graduates' reported experiences in the job market and their confidence in their nursing practice in their new jobs. *Results:* The analyses demonstrated significant differences in the comparisons of several employment findings from the national sample versus those from the New York sample. New graduates from New York reported only 59% success in finding jobs, compared to the rate of national new graduates (85%). Their perceived hiring trends, as they searched for jobs, were also different for New York versus those from the national sample. Most importantly, while confidence was affected for all new graduates of 2020, the New York sample reported significantly lower confidence mean scores when compared to the national sample, with associations related to the clinical experiences that were discontinued or simulated online. *Conclusion:* The results of the survey yielded significant differences in the comparisons of new graduate employment success for the New York state sample compared to the national trends. The greater impact of job searching during the COVID-19 early months on New York graduates can be interpreted upon closer examination of the timeline of the disease escalation and hiring trends.

Keywords: workforce, employment trends, new graduates, nursing shortage, job market

Funding: The authors did not receive any funding from public, commercial or not-for-profit sectors. Surveys are conducted annually on all graduating members of the National Student Nurses Association (NSNA).

Conflict of Interest: The authors declare no actual or potential conflict of interest.

Spring 2020 New Graduate Employment and Workforce Issues During the Pandemic: A Secondary Analysis of New York State and National Trends

The nursing workforce statistics have been a function of the rise and fall of the economy with ever growing concerns about a predicted shortage of nurses on the horizon (Feeg & Mancino, 2020). Schools of nursing have been stretched to produce more graduates to meet the needs of the changing population of patients, older and sicker, in hospitals today. As the overall economy in the U.S. continued to improve since the early days of 2009, the annual survey of the National Student Nurses Association (NSNA) has reported on the nation's areas of regional concerns with the overall growth of RN employment and associated trends over the past ten years. However, in 2020, a global pandemic unfolded with day-today significant events that affected the U.S. in general, and New York state specifically. COVID-19 caused a national shutdown of schools of nursing. Graduates in Spring and Summer 2020 across the country faced a different healthcare job market in their search for employment (Feeg, Goberdhan & Mancino, 2021). With New York airports as the gateway to the U.S. from around the world bringing crowds of tourists arriving daily, New York city felt an unprecedented impact of the pandemic that had spread from Asia to Europe to New York.

Impact of COVID-19 on Hospitals and Schools

The emergence of the crisis in early 2020 resulted in an abrupt cessation of public based activities that prompted a national response of many states issuing state-wide "lock-down" orders, forcing nursing schools throughout the country to instantly convert to other learning options. Many clinicals were cancelled or moved to online and simulated experiences (Chappell, 2020). Nursing programs across the country cancelled, postponed or transitioned to quickly implemented online instruction. This rapidly evolving instructional landscape saw faculty having to adapt to a new mode of teaching students at a critical time, for seniors, in the months before graduation. According to a national survey, 62.7% of students reported that their clinical experiences with patients were totally discontinued and substituted with online clinicals for all (18.4%), moderate (21.8%) and significant (22.7%) amounts of time (Feeg et al., 2021) at a point when experiential learning is a critical part of the nursing curriculum (Nuuyoma & Ashipala, 2018).

Timeline in 2020

The virus spread quickly from Asia to the U.S. as the number of infected Americans in the Pacific Northwest increased and government concerns mounted. When the Northeast felt the impact of contagious travelers from Europe evidenced by positive virus cases in localized areas warranting "containment zones" (Department of Health, 2020) and a rise in emergency room admissions in New York City (NYC), it became clear that the state government needed to launch its own emergency response to prepare for a surge of intensive care unit (ICU) patients needing ventilators. Over the weeks and months that followed, New York State (NYS) policy makers attempted to predict and prepare for what was to come (Timeline, Table 1). NYS was the epicenter of the pandemic during Spring 2020 and from March - May 2020. Approximately 203,000 laboratory- confirmed COVID -19 cases were reported to the NYC Department of Health and Mental Hygiene (Department of Health, 2020).

Table 1

	-
Dates	Events
January 21st, 2020	First confirmed case of COVID-19 in the US (Center for Disease Control and Prevention, 2020).
January 30th, 2020	The W.H.O. declares a global health emergency (World Health Organization, 2020).
February 2nd, 2020	The Department of Health starts the COVID hotline (Department of Health, 2020).
March 1st, 2020	First COVID-19 case in New York State (Radulescu, 2020).
March 7th, 2020	NY State Governor A. Cuomo declares a state of emergency (Department of Health, 2020).
March 10th, 2020	NY State Governor A. Cuomo orders containment zone (New Rochelle) March 12 to 25 (Department of Health, 2020).
March 11th, 2020	NY State Governor A. Cuomo announces the closing of SUNY and CUNY from March 12th to 19th and moves to online learning following March 19th (Chappell, 2020).
March 14th, 2020	First two COVID-19 deaths in NYS (Docherty et al., 2020).
March 16th, 2020	Governors of New York, New Jersey, and Connecticut, all Democrats, formulate similar rules for closures, NYC Public Schools close (Tarrant et al., 2020).
March 20th, 2020	NY State Governor A. Cuomo signs the New York State on PAUSE executive order, closing 100% of non-essential businesses statewide (Department of Health, 2020).
March 22nd, 2020	Hospitals are ordered to cancel elective and non-critical surgeries to help expand hospital capacity (Office of the Governor of NY, 2020).
March 25th, 2020	NYS announces 40,000 healthcare workers, including retirees and students, signed up to volunteer for the state's surge healthcare force. Another 6,000 mental health professionals begin providing free online mental health services (Department of Health, 2020).

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April 4th, 2020	NY State Governor A. Cuomo uses executive order to allow medical students slated to graduate to begin practicing immediately in order to help with the health care surge (Office of the Governor of NY, 2020).
April 6th, 2020	NY State Governor A. Cuomo extends NYS stay-at-home order and school closures to April 29 (Office of the Governor of NY, 2020).
April 10th, 2020	NYS records more COVID19 cases than any other country (besides U.S.) (New York has more cases than any country, 2020)
April 30th, 2020	NY State Governor A. Cuomo announces NYC subway closures from 1 a.m. to 5 a.m. during the coronavirus pandemic in order to disinfect trains and stations ("NY State Governor A. Cuomo Announces", 2020).
May 10th, 2020	In the wake of thousands of additional deaths in nursing homes added to the state death count, the state Department of Health rescinds a March 25 order requiring nursing homes to accept elderly COVID-19 patients discharged from hospitals.
June 24th, 2020	NYS requires travelers to self-quarantine for 14 days if traveling from hot spots (NPR, 2020).

Graduation that year launched nursing students into a healthcare system that was operating in emergency mode facing unprecedented admissions and deaths due to the pandemic. Nursing administrators were compelled to solve problems that were imminent and short ranged in terms of hiring. Healthcare workers were getting sick or needing to quarantine, adding to the dire staffing needs as patients mounted in hallways. Emergency hiring was set by policies in New York to waive or minimize barriers for retired nurses to come back to work. Travel nurses were recruited from distant places to fill the needed jobs for the temporary crisis. While hiring experienced nurses was a priority for hospital administrators in NYS, at the heart of the east coast infections, graduating seniors everywhere faced a different job market and workplace environment.

The Pandemic and the Workforce

How did this change impact the hiring of new graduates? How did new graduates fare when searching for employment at a time and in an environment that was in crisis and in need of nurses? As the pandemic began to taper off, hospitals began to look to filling positions with more permanent personnel, however, this took several months as the Spring 2020 graduates looked for jobs. With limited research on actual nursing workforce or education data from hospitals and schools of nursing during the peak months of the beginning of the pandemic, the need for a national survey on new nurses warranted attention. This study sought to identify and describe how new graduate nurses reported their experiences in finding employment they had hoped would naturally follow their nursing education graduation. Since prospective studies on employment and workforce were not possible, a secondary analysis of annual data collected by a national nursing student organization could provide insights into the employment and education experiences of those most impacted at the time.

Secondary Analysis

Secondary analyses of large datasets provide a mechanism for researchers to study high impact questions that would be difficult to assess prospectively. The same basic research principles that apply to primary data analysis also apply to secondary analysis, although inherent limitations must be acknowledged (Smith et al., 2011). These include accepting that the data source meets standards that are essential despite the unknowns of the source identities of the respondents. Each year, the National Student Nurses Association (NSNA), with over 60,000 members, routinely conducts an annual survey on new graduates to describe their job search and successes in joining the nursing workforce after graduation. The organization has been conducting this survey for more than 10 years, providing reports on the job market for nursing students entering the workforce (Feeg, & Mancino, 2020). Accepting the limitations of the response rate unknowns and ability to alter questions, a secondary analysis is appropriate to compare a large sample of respondents each year with prior vears.

In 2020, new graduates faced a different job market searching for their first positions as newly registered nurses (RNs). Students who graduated in Spring 2020 experienced change in their final clinical experiences that were limited when nursing schools across the country closed their in-person classes and supplemented clinical placements in hospitals. Hospital experiences were no longer available, and doors were closed to most healthcare students, forcing schools to find alternative learning experiences (Chappell, 2020).

Purpose

The NSNA annual surveys provided the investigators with a rich source of secondary data to study national trends and filter to identify and describe trends specifically for new graduates from NYS after graduation. The purpose of this study was to analyze employment trends for new graduates in New York relative to the national trends and examine how the Spring of 2020 graduates faced the job market with their altered learning experiences from the early months of the pandemic. The research objectives for this secondary analysis from filtered and focused data are to:

- 1. Describe the general trends of new nursing graduate employment nationally in the months before and after the COVID-19 pandemic and compare New York and national trends;
- 2. Compare the two-year changes in hiring trends for New York and national employment of new graduates including availability of jobs and students' perceptions of hiring trends in their job search;
- 3. Describe how the abrupt changes caused by the pandemic impacted graduation, clinical experiences, and substituted online learning; and,
- 4. Report how students in New York and nationally were affected by the disrupted clinical experiences in their confidence to practice.

Methods

Design

This study was a secondary analysis of data collected by the National Student Nurses Association (NSNA) on the employment of new graduates' annual membership survey. Each year, the organization identifies members who report their graduation dates within the 6 to 9-month window around when they plan to graduate. They send the "New Graduate Employment Survey" out via email in October of each year asking about their member-graduates' successes in finding employment within the previous months. The questionnaire consists of more than 70 questions about the member-graduates' experiences in the job market along with a variety of demographic questions, their education experiences in the past, and plans for continuing education in the future. These results are reported each year in Deans Notes with a typical return of more than 3,000 to 6,000 responses.

The survey for 2020 was distributed via SurveyMonkey® to the list of members who graduated in May-June and August of 2020, with some who reported graduating in the previous Winter of 2019-2020. The survey yielded n = 3,074 cleaned responses who answered the same key questions as prior years, however, these participants experienced the unprecedented months of finishing nursing school during a pandemic. The 2020 survey captured these major changes and trends in employment compared to prior years as a snapshot of what new graduates faced in job searching during the summer of 2020. It also included questions about their unusual clinical learning experiences in their nursing programs at the height of the national emergency of COVID-19, published in the National Council of State Boards of Nursing (NCSBN) Leader to Leader (Feeg, Goberdhan & Mancino, 2021). These data were combined with previous results from prior years and filtered for this study to explore the national trends as a context for focusing on respondents who were from New York as they compared nationally. All the data were de-identified and this study combined variables that were parallel in their item structure to answer the research questions.

Survey Instrument and Data Collection

The NSNA members, more than 60,000, were accustomed to receiving SurveyMonkey® surveys from NSNA and the questionnaire was designed for easy online data entry. For this study, the variables of interest included a variety of demographic questions including gender, age, type of nursing program and type of nursing school, and state where the participant lives, which were sorted by regions of the country and filtered to compare respondents from New York state only. Responses were also cleaned and filtered to focus on respondents who were Associates Degree Nurses (ADN) and Baccalaureate Degree Nurses (BSN) from Public, Private and Proprietary (For-Profit) Schools.

Other survey questions included: "Are you employed as an RN?" and a variety of statements related to the participants' experience in the job market, including their perception of hiring trends of employers such as "hospitals are not hiring new graduates". Several questions asked the participant to report whether or not and how much of their clinical experiences were discontinued and to estimate how much of their clinical learning was online. One additional question was developed as a visual analog scale (VAS) in SurveyMonkey® (0 to 100): "How confident do you or did you feel in your ability to practice?" (0 to 100).

The survey was left open for 8 weeks from October to December with two reminders sent out at two weeks and 4 weeks. Each of the years in this analysis followed a similar procedure minus the questions specifically related to the 2020 pandemic year situations. The survey was closed in December and results were analyzed in SurveyMonkey® and imported into Excel and SPSS 23 for further analyses.

Sample

From the more than 40,000 surveys sent out to the graduating seniors' email addresses (many were duplicates as both school and personal email addresses were used for most participants), the final cleaned and coded sample ranged from 3,074 on the main question related to employment with other questions to as low as 2,021 due to missing responses. Upon sorting the responses filtered for New York only, the sample ranged from 210 to 137 respectively. Using prior year comparisons (Feeg & Mancino, 2020), the samples were comparable in return rate and amount of missing data, which are common in online surveys. Data from the main question about employment success were grouped by regions of the country and used to compare 2020 responses to ten previous years nationally (Figure 1). Other comparisons were made for the national data versus New York only on the 2020 results versus the previous graduation year (2019).

Figure 1

Employment Rates by Regions 2009 - 2020



Source: Feeg, V., Goberdhan, C. & Mancino, D. (2021) Excerpts from the NSNA 2020 Annual Survey of New Graduates: Graduating Seniors in Winter 2019, Spring and Summer 2020. *Leader to Leader*, National Council of State Boards of Nursing (NCSBN), Spring 2021, pages 1-4.

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Results

The results of this secondary analysis required combining several datasets in order to juxtapose the national responses with those from the New York sample for statistical descriptive and comparative analyses. Frequencies were calculated on the variables of interest on the two samples for 2019 and 2020. Data were added to the 10-year data on employment of new graduates for the general findings. The sample sizes varied by year and by variable of interest but were generally more than 3,000 for the national studies and over 200 for the New York filtered responses.

National

Research Question for Objective 1: What were the general trends nationally related to employment of new nursing graduates in the months before and after the COVID-19 pandemic that forced nurse educators to change their mode of instruction for graduating seniors?

To answer the main question related to the trends nationally related to employment of new nursing graduates in the years before the pandemic and in the 2020 class early in the pandemic, the frequencies of the single response "Are you employed as an RN?" were combined and graphed. The trend over 10 years demonstrated regional differences related to new graduates' successes in finding a job within the first 4-9 months since graduation. Students from states in the Northeast and West have always reported less success in employment than the South and Central respondents. Nationally, the employment trends of new graduates in 2020 reflected a decline to 85% from 2019 (87%), declining by 2% each year. The regional job market trend was lower in 2020 compared to 2019 in all regions, except the South. The lowest employment was experienced in the West and Northeast, reflecting areas hardest hit by surges in COVID-19 admissions. In the graduating classes of 2020, all students reported a drop in success rates of finding jobs (Northeast = 79%; West = 77%) and slightly less or stable rates (South = 92%; Central = 93%) (Figure 1).

New York Responses and Job Comparisons

Research Question for Objective 2: How did new nursing graduate employment trend in New York in 2019 and 2020 and how did that compare to the national employment over those years? What are the two-year changes in hiring trends for New York and national employment of new graduates, including availability of jobs and students' perceptions of hiring trends in their job search?

For the analyses focused on respondents from New York state, the main question related to new graduate employment combined data from the 2019 and 2020 surveys. It is first important to know that the proportion of types of schools (Associate vs. Baccalaureate) and types of programs (Public, Private, Proprietary) significantly differed for New York state compared to the national sample. A greater portion of the NY sample attained their Baccalaureate degree (84.7%) compared to 66.1% nationally, and New York respondents were less common from public and more common from private types of schools.

Table 2

Descriptive Statistics	of Respondents
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	National Sample	NY Sample	
	(n=3074)	(n=210)	
	Percent (n)	Percent (n)	χ2
Types of Programs	n = 2,958	n = 203	30.0**
Associate Degree	33.9% (1,003)	15.3% (31)	
Baccalaureate Degree	66.1% (1,955)	84.7% (172)	
Types of Schools	n = 2,950	n = 203	92.2***
Public	63.0% (1,858)	30.1% (61)	
Private (not-for-profit)	18.2% (537)	37.4% (76)	
Private proprietary (for-profit)	11.1% (327)	15.8% (32)	
Don't Know	7.7% (228)	16.7% (34)	
Employment within 6	85.0% (2,613)	59.5% (125)	92.1***
months			
Discontinued Clinicals	n = 2,021	n = 137	19.4**
Totally discontinued	65.2% (1,318)	82.5% (113)	
Very little patient clinicals	12.3% (249)	9.5% (13)	
(<10%)			
Some patient clinicals (<50%)	13.1% (264)	5.8% (8)	
Patient clinicals (>50%)	9.4% (190)	2.2% (3)	
Amount of Clinicals Online	n =2,253	n = 147	11.7*
All clinicals online (100%)	16.0% (361)	24.5% (36)	
Significant online (50-80%)	21.3% (480)	21.8% (32)	
Moderate online (10-50%)	20.8% (469)	19.7% (29)	
Little online (<10%)	13.9% (312)	10.2% (15)	
No online clinicals	17.8% (400)	19.1% (28)	
Unsure	10.3% (231)	4.8% (7)	
Graduation Delayed	n = 2,227	n = 145	216.3***
No, graduated on time	83.4% (1,858)	90.3% (131)	
Yes, graduation delayed	16.6% (369)	9.7% (14)	
* p <.05 **p <.01 ***	<i>p</i> <.001		

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A descriptive comparison of the national sample showed that 85% of new graduates found employment within six months compared to 59% in New York. Comparative statistics sorting the data for New York from the national sample yielded the findings that demonstrated a statistically significant difference in the proportion of employed new graduates nationally versus New York; for the national sample, 85.0% of the respondents found jobs compared to only 59.5% of New York new graduates (2 = 92.1, p< .01) (Table 2).

The National trend for new graduate employment within 4-6 months of graduation has remained consistent for both 2019 and 2020 (86% and 85%), but the data from New York respondents reflected a drop from 2019 (70%) to 2020 (59%) (Figure 2). These data were further supported with new graduates' perceptions and experiences that employers were filling positions with experienced RNs and not hiring new graduates in NYS. The survey reflected this perception with national average in 2019 (65%), 2020 (57%) versus NY 2019 (56%) and 2020 (29%) (Figure 3). The graduates' perception of the availability of "ample jobs for new graduates" was substantially lower in several regions, but this perception was pronounced in New York (Figure 4) as were a variety of questions related to hiring "bad news" (Figure 5).

Figure 2

New York vs National New Graduate Employment 4-6 Months Post Graduation



Figure 3





Figure 4

National vs New York New Graduate Perception in Job Search: "There are ample jobs for new graduates."



Figure 5

New York vs National Hiring "Bad News" Trends



In summary, the decrease in general employment was down (-1%) for the national sample and ten times higher (-10%) for the New York respondents. The perception of hospitals not hiring new graduates was clearly different in 2020 compared to 2019 for both with greater increases for New York (+22%) than for the national sample (+8%). The national sample respondents (32%) reported more hospitals closing departments than New York (24%), but all job seekers reported a difference in hospitals closing departments in 2020; both New York and the national respondents increased 8% and 16% respectively since 2019. In all these national versus New York comparisons, the new graduates' employment experiences were different than the national respondents based on the likelihood of the corresponding spread of the infection in the state, and especially New York city at the epicenter, where elective surgeries were cancelled, and hospital units were rapidly converted to COVID units to meet the escalating admissions.

Research Question for Objective 3: How were graduating nursing students impacted by abrupt changes in schools and businesses nationally and specifically in New York state, including delayed graduation, discontinued clinical experiences, and substituted clinicals with online learning?

Delays in graduation and disruption of clinicals were significantly different for New York. To look more specifically at how graduating nursing students were impacted by the abrupt changes in schools and businesses nationally and specifically in New York state, the analysis from the 2020 survey of the questions about the respondents' educational experiences yielded significant findings. These included delayed graduation, discontinued clinical experiences, and substituted clinicals with online learning that resulted from school closures that varied across the country at that time. Students from the New York sample felt the greater impact of discontinued clinical experiences than the national sample ($x^2 = 19.4$, p< .01), the subsequent rapid increase in the amount of clinicals experiences online ($x^2 = 11.7$, p< .05) and delayed graduation ($x^2 = 216.3$, p< .001) (Table 2).

Research Question for Objective 4: Did the discontinuation of clinicals affect all new graduates' confidence in their ability to practice when looking for a job? How were students impacted by clinical experiences being substituted with online learning nationally and in New York specifically prior to graduation? Did the online clinicals affect the new graduates' confidence nationally and in New York?

With the impact of the early days of the pandemic being felt nationally, there were different approaches in how schools adjusted to accommodating the students' clinical requirements. According to the survey, new graduates reported cancelled or pivoting to online clinical experiences in New York and nationally at this time. However, New York students were forced to adapt quickly to different online practicum experiences, often at the end of their senior year. To examine how the abrupt changes affected graduating students' self-report of confidence in their search for employment, the comparison yielded a significant mean score difference for the national sample (x = 62.7) versus the New York sample (x = 58.3) (t = 2.22, p< .05). To compare even further the self-reported confidence related to their discontinued clinicals (>50%), there was a significant mean score difference for the national sample discontinued clinicals (>50%) versus unchanged clinicals (<50%) (62.2 versus 68.9, p< .01) and the New York sample discontinued clinicals versus unchanged clinicals (57.4 versus 70.3, p<.05) (Table 3).

Table 3

Mean Score Comparisons – Reported Confidence to Practice by Clinicals Discontinued (National vs New York)

Reported Confidence to Practice

	Nationa	1	New Yo	ork
	n (%)	Mean	n (%)	Mean
		(SD)		(SD)
	n = 1825 (91%)	62.19		57.48
> 50% Clinicals Discontinued		(23.1)	n=165 (88%)	(24.4)
	n = 190 (9%)	68.86		70.27
<50% Clinicals Discontinued		(22.2)	n=22 (12%)	(16.0)
		Signif	icance	
	t-test	-3.80	t-test	-3.27
	(df)	(2,013)	(df)	(185)
	p value	.000	p value	.018

The final analysis of how the abrupt change in clinical learning to online experiences affected the students' self-report of confidence in their search for employment, the frequency analysis was done on the national and New York samples (Table 4). It appeared that the rate of change was different in the amount of clinical learning that occurred. For example, the New York sample of "all online" was higher (17%) than the national sample (12%) and the reverse was true for "very few online" for New York (11%) compared to the national sample of "very few online" (7%). To examine the amount of online clinicals differences in the students' mean score of confidence, there was a significant difference in the national sample (F = 5.98, p< .001) but not for the New York state sample (F = .994, p = NS), although the graphic representation of these clearly show that the national and New York samples differed across the confidence related to the amount of clinicals online (Figure 6). This can only be interpreted by speculation about the distinction in the rate of moving to online clinicals for New York at a period of time when education was profoundly disrupted. Moving to online education was rapidly deployed in New York with much uncertainty among all the stakeholders and the rest of the country evolved more slowly over the same period of time.

Table 4

National and New York Frequency – Estimate Amount of Clinical Education Online

Online Clinicals	National n (%)	New York n (%)
No Online Clinicals (0%)	400 (13.5%)	28 (13.8%)
Very Few Online Clinicals (<10%)	312 (10.5%)	15 (7.4%)
Moderate Online Clinicals (10-50%)	469 (15.9%)	29 (14.3%)
Significant Online Clinicals (50-80%)	480 (16.2%)	32 (15.8%)
All Online Clinicals (100%)	361 (12.2%)	36 (17.7%)

Figure 6

Confidence to Practice by Clinicals Online (National) (n = 2,242) and (New York) (n = 139): "How confident do you or did you feel in your ability to practice?" (0 to 100)



"Please estimate how much of your clinical education was online in the Spring 2020 semester as a result of COVID-19. Choose the one best answer that fits your experience."

Discussion

The results of the survey yielded significant differences in the comparisons of new graduate employment trends in the national sample compared to that of New York state. The reported findings of lower job success among New York graduates compared to their national counterparts can be interpreted upon closer examination of the hiring trends and the timeline of campus closures, when New York faced the mounting crisis.

Employment is directly associated with the conditions of the economy and the COVID-19 pandemic impact on New York yielded over \$62 billion in lost revenue for New York hospitals, primarily due to patients' being fearful of going to the hospitals to seek healthcare, a temporary ban on elective procedures, closing of hospital departments, and the cost of personal protective equipment (Signs of Progress, n.d.). The temporary executive ban forced hospitals to realign staffing to meet the needs of new surges in COVID-related patient admissions. With the lifting of pauses on elective procedures, hospitals in New York still saw a reluctance by patients to return and faced continued additional expenditures for equipment and sustained financial challenges. Healthcare organization administrators began to contemplate layoffs. Statewide, the overall grim outlook of condensed and restructured departments began to have an impact on the hiring preferences of recruiters and managers.

From an Employer Standpoint

Nationally, during the COVID pandemic, U.S. hospitals began recruiting nurses and doctors out of retirement. Students and new graduates who still needed to earn their licenses were expedited into the workforce. While some states were willing to employ new students for up to one or two months, they were still restricted to doing more complex nursing tasks.

From an employer hiring perspective, prior exposure to a clinical learning environment is essential as health organizations seek candidates who can adapt effectively to delivering quality and safe patient care. Employers need the guarantee that new hires can operate independently after orientation, and prior clinical experience within a health-based environment is requisite to learning how to be more autonomous on the job, while still being supervised by a preceptor to ensure that all the proper steps are taken for safe and quality care. The transition from being a nursing student to a new graduate registered nurse is a stressful and challenging process. Different post graduate residency and orientation programs have been developed to ease the stress of their first year of employment (Kaihlanen et al., 2018). Early attrition from the profession is costly in terms of healthcare expenditures, patient safety, quality of care, and lost human resources.

The results of this study emphasized an abnormal year of hiring newly minted nurses that was especially challenging in New York as compared to the rest of the country. New York faced a greater degree of economic impact and a new graduate workforce of limited or no clinical student experiences. Orientation and residency programs were shut down as hospitals shifted resources to caring for COVID patients. The data confirm the restructuring of hospital departments, and nurse recruiters began to show a preference for experienced nurses during this time. Hiring freezes were put in place and new graduate orientation programs were suspended resulting in a shift to redeployment of experienced nurses and travel nurses to fill the needed gaps in staffing. These redeployed experienced staff received on-the-unit training to accommodate the immediate needs of the organization without regard to planning for future needs.

From a New Graduate Standpoint

This study confirmed that confidence for all new graduates in 2020 was affected in their post-graduation job seeking. Understanding why the New York sample was significantly lower can be inferred through associations relating to amount and type of exposure of clinical experiences and the hiring preferences of nursing recruiters during this period.

While innovative strategies were implemented to optimize simulation learning, graduating seniors faced uncertainty about graduation, looming NCLEX preparation, and a different job market than their predecessors. Their learning had been impacted by the abrupt changes in schools, online learning rather than real clinical experiences, and a career that now carried with it personal danger caring for complex patients with COVID. This study clearly pointed out the unprecedented impact that New York state schools of nursing, students and employers experienced throughout the year.

During the first 6 months of transition, the newly hired nurse's focus is egocentric and concerned with assimilation into the workplace and learning the roles they had anticipated. In general, orientation programs should be small and consistent with preceptors leading through the transition (Schmitt & Schiffman, 2019). Given the well documented trail of normal Feeg et al.

transition that new nurses struggle with as they reach the ability to give independent patient care, it seems reasonable to assume that nursing recruiters were reluctant to hire new graduates into practice during the height of the COVID-19 pandemic. Health systems were heavily impacted and therefore resources that would have been focused on supporting new graduates were now being redirected to other areas. According to the 2020 NSNA survey, hospitals closing and realigning to meet the needs of the surge in hospitalizations showed a 16% increase closing of units within the hospital and a 39% increase in hiring freezes of new graduates (Feeg et al, 2021).

What was even more difficult for the class of 2020 in New York and nationally was the realization that without robust orientation in that transition period, new nurses had already lost months of experiential learning as they switched to online clinical learning or discontinued practicum experiences in their nursing education programs. This study clearly identifies the impact of that alternate learning on the new job seekers' confidence in their own ability to practice. This was also differentially experienced by the respondents from New York, the epicenter of COVID-19, as compared to the national graduates of 2020.

Limitations

As with all secondary analysis, the results of this study are limited by the general issues of using questions designed for a different purpose and a sample of participants who are not directly recruited. Cleaning and coding data often results in losing some information based on missing responses. Even with the advantage of analyzing a large data source from a national sample, the findings are limited to new graduates who were members of NSNA and do not reflect all graduating nursing students.

Conclusion

Although the entire country was impacted by the COVID-19 pandemic, nursing graduates from New York were particularly hard hit by the rapid escalation of the spread of the virus and the surge of critically sick patients at hospitals throughout the state. New York City hospitals faced dire situations of needing beds, experienced personnel, and equipment in the months of March to June that resulted in changing priorities away from students, at the time when senior students were in their final stages of preparing to graduate. Today, as the pandemic has waned, employers and new graduates are recovering from having experienced one of the nation's most hard-hit states in the early months of the national crisis. Although the future looks better, it may still take time to return to "normal" for the new graduates of 2020 and for employers seeking to hire the new 2021 nursing graduates.

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INNOVATIVE TEACHING STRATEGY

Teaching Innovations Using Systems Thinking to Guide Fieldwork Projects in RN-to-BSN Education

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Abstract

Background: A critical need exists to improve quality and safety within RN-to-BSN education through innovative teaching strategies. RN-to-BSN students are poised to improve patient outcomes through system-level awareness by use of scholarly fieldwork projects within practice settings. The purpose of this scholarship of teaching project was to use an adapted version of the Systems Awareness Model to develop and categorize RN-to-BSN students' learning experiences and capstone-type fieldwork projects guided by systems thinking. Faculty members of the Catalysts for Change Community led this project. *Methods:* A modified Delphi technique using multiple iterations to reach consensus by faculty experts was used in the design of this scholarship of teaching project. The philosophical underpinning guiding this project was collaborative scholarship. The seven steps of the System Awareness Model adapted for leadership and management were used to guide faculty championing quality and safety of innovative teaching strategies in face-to-face, hybrid, or online teaching-learning environments. *Results:* Faculty described examples of evidence-based practice (EBP), change, and practice projects including ideas, titles, and descriptions in alignment with Quality and Safety Education for Nurses (QSEN) competencies and with newly adopted American Association of Colleges of Nursing Education Essentials. A grading rubric is provided for evaluating fieldwork student project outcomes. *Conclusions:* The teaching strategies and fieldwork projects described in this paper reinforce the American Association of Colleges of Nursing (AACN) RN-to-BSN White Paper and the Commission on Collegiate Nursing Education (CCNE) Teaching Standards. Suggestions for future research are offered.

Keywords: Innovative teaching strategies, system awareness model, systems thinking, RN-to-BSN education

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Teaching Innovations Using Systems Thinking to Guide Fieldwork Projects in RN-to-BSN Education

The Quality and Safety Education for Nurses (QSEN) Institute strives to improve the delivery of safe care in health systems. QSEN leaders endeavor to unify academic-clinical partners as catalysts for change. QSEN's RN-to-BSN Catalysts for Change Community (RN-to-BSN CCC), formerly the International QSEN RN-to-BSN Task Force, promotes the science of systems thinking to advance change across the academic-clinical chasm. Systems thinking (ST) is a cogent teaching approach for leading improvement (McKimm et al., 2020). The RN-to-BSN CCC leverages RN-to-BSN students as educational consumers who lead change. As such, the RN-to-BSN CCC undertook a scholarship of teaching project that sought to inform and entice future scholarship in teaching and learning. Boyer (2016) noted that scholarship of teaching begins with the educator's knowledge and progresses to the dissemination of their knowledge. These nurse educators set out to identify teaching innovations that represent capstone-type fieldwork projects reflective of improving quality and safety outcomes within health systems.

The RN-to-BSN CCC acknowledges a critical need for innovative teaching strategies (ITS) in RN-to-BSN education designed to improve quality and safety within clinical settings (Horntvedt et al., 2018). This report summarizes how faculty members of the RN-to-BSN CCC developed, implemented, and evaluated previous fieldwork projects that used ITS in both the classroom and clinical learning settings. Dolansky and Moore (2013) noted that as nurses develop system level thinking skills, they also have the ability to recognize the interconnectivity of processes and functions, contributing to enhancing quality and safety. The purpose of this scholarship of teaching project was to develop and categorize RNto-BSN students' learning experiences and capstone-type fieldwork projects guided by ST. An adapted version of the Systems Awareness Model (SAM; Phillips et al., 2016) was used as the framework to assist in the scaffolding of learning experiences that might foster the growth of ST, promoting a culture of quality and safety.

Methods

The philosophical underpinning guiding this scholarly project was collaborative scholarship. Collaborative scholarship enhances discoveries of different dimensions of the same phenomenon for the purpose of knowledge generation (Thompson et al., 2010). Cygan and Reed (2019) emphasized that intraprofessional collaborations between doctorally-prepared nurses impel evidence-based change. The authors of this project explored ITS that resulted in RN-to-BSN students effectively leading and managing quality and safety in practice settings.

The SAM developed by Phillips et al. (2016) was adapted to explore innovative teaching strategies because originally, SAM was developed to foster ST within RN-to-BSN curricula and was not limited to a specific type of learning experience. This model was adapted to focus on the specific use of ITS within RN-BSN programs' fieldwork projects or assignments. Faculty members of the RN-to-BSN CCC were familiar with the SAM, and had previously leveraged the model to develop scaffolded learning experiences. SAM uses seven consecutive steps to increase nurse knowledge and application in leading health systems. At Step 1, nurses focus on fundamentals of theory application, exhibiting high reliance on authority and high personal effort. Conversely, they exhibit low theory application in clinical reasoning and have modest system awareness of interdependent work relationships. By Step 7, it is proposed that nurses have become experienced thinkers, displaying less reliance on authority, spending less personal effort to complete their work, exhibiting higher clinical reasoning, and demonstrating increased interdependence with the health care team. The steps are aligned with Dolansky and Moore's (2013) Systems Thinking Scale which measures reliance on authority, personal effort, critical reasoning, and system interdependencies. The model has been adapted to address academic (Stalter & Jauch, 2019), practice settings (Phillips et al., 2018), and COVID-19 related clinical issues (Phillips & Stalter, 2020). For this scholarship of teaching project, SAM was adapted to develop and categorize RN-to-BSN students' scaffolded learning experiences and capstone-type fieldwork projects. The adapted version integrates the use of ITS in classroom, hybrid, and online environments to foster nurses with effectively leading and managing quality and safety within the complex systems where they work (Figure 1).

Figure 1





Design

A modified Delphi technique using multiple iterations to reach consensus was used in the design of this scholarship of teaching project. The meetings were facilitated by the RN-BSN CCC coleaders over a period of three to four months. Faculty experts met three times using videoconferencing technologies and shared drives over the three-month period. First, they met as an expert panel to brainstorm the various teaching strategies they used to educate RN-to-BSN students. Next, the expert panel self-divided into seven teams of two to three members who were focused on each of the seven SAM steps where they discussed student projects used to effectively lead and manage quality and safety in complex systems.

Last, they met to link teaching strategies to SAM steps. Each team brought their recommended ITS to the panel for consensus. At each meeting, notes were taken by the second author and analyzed by the team for informing subsequent conversations. Debates were resolved by consensus where the team worked to come to a collaborative agreement. The use of the modified Delphi Method allowed the RN-to-BSN CCC to leverage the collaborative educator's experiences, culminating in the identification of the ITS. A rubric template, based on criteria used during consensus discussion, is provided for faculty use when evaluating students' fieldwork project presentations (Table 1). The rubric emphasizes exemplary performance and can be modified when used. Criteria used in the rubric included project purpose, learning objectives of the project, justification for the project from a systems thinking perspective, implementation of the plan, use of evidence-based practice in the plan, evaluation of the plan, products from the project, timeline for completion of the project in a graph or table, format, and professionalism.

Table 1

Criteria	Exemplary (8-10 points)	Developing (5-7 points)	Beginning (1-5 points)	Not Acceptable (0 points)
Project purpose	Clearly articulates project purpose with clear rationale.	Articulates project purpose but lacks clear rationale.	Provides some rationale but does not articulate purpose.	Does not articulate project purpose.
Learning objectives of the project	Clearly demonstrates use of SMART objectives to explain tasks to be undertaken to complete project. Includes at least one objective to address safe practice. Includes at least one objective to address interprofessional collaboration to improve patient/health outcomes.	Adequately demonstrates use of SMART objectives to explain tasks to be undertaken to complete project includes at least one objective to address safe practice. Includes at least one objective to address interprofessional collaboration to improve patient/health outcomes.	States some objectives to explain tasks to be undertaken to complete project but are not in SMART format. Includes at least one objective to address safe practice but does not include one objective to address interprofessional collaboration to improve patient/health outcomes.	Does not demonstrate use of SMART objectives nor explain tasks to be undertaken. Does not include objectives to address safe practice and interprofessional collaboration to improve patient/health outcomes.
Justification for the project from a systems thinking perspective	Clear logical statements showing justification for the project from a systems thinking perspective.	Shows insight into justification for the project from a systems thinking perspective, but some statements are not clear.	States justification for the project but does not show insight into the need for the project from a systems thinking perspective.	No statements for justification or insights for the project from a systems thinking perspective.
Implementation of the plan	Clear logical statements showing insight into topic and analysis. Implementation statement involves evidence to support interprofessional collaboration.	Shows insight into topic and analysis. Implementation statement does not involve evidence to support interprofessional collaboration.	Sparse insight into topic and analysis. Implementation statement does not involve evidence to support interprofessional collaboration.	No statements of insight into topic and analysis. No statements of evidence to support interprofessional collaboration.
Use of evidence- based practice in the plan	Uses reliable evidence when supporting arguments such as peer reviewed journals, professional web sites, or other books. New ideas or examples from experience to contribute to goals. Connections are made with depth and detail.	Uses reliable evidence when supporting arguments such as peer reviewed journals, professional web sites, or other books. Ideas or examples contribute to goals, but connections are not made with depth or detail.	Uses evidence but not in sufficient amount or reliability to support argument. Few if any new ideas or connections and provides minimal or no insight.	Uses no evidence, unreliable evidence, or misleading evidence. No new ideas.

Fieldwork Project Grading Rubric (100 points)

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Evaluation of the plan	Clear logical statements showing formative and summative evaluation of plan including insight into topic and analysis goals. Connections are made with depth and detail. Uses data to evaluate contribution of interprofessional collaboration.	Competent but information thin and commonplace; answers only part of questions; Few if any new ideas or connections and provides minimal insight. Does not clearly use data to evaluate contribution of interprofessional collaboration.	Rudimentary and superficial evaluation; no analysis or insight. Statements lack explanation of reasoning. No new ideas.	No formative or summative evaluation. No analysis or insight. Uses no evidence.
Products from the project	Development of slides showing products/policies are clear and complete. Summary slide concisely describes project.	Slides showing products/ policies developed are included. Summary slide is present but vague.	Slides are present but loosely related to project. No clear summary slide.	No products from project are evident. No summary slide is included.
Timeline for completion of the project in a graph or table	Student project timeline displays all tasks, is reasonable in completion and is displayed in a graph or table.	Student project timeline displays all tasks needed to complete the project. Is not in a graph or table.	Student project timeline does not display all tasks needed to complete the project. Is not in a graph or table.	Timeline not present.
Format	Project submitted on time, proper number of pages and has 0-1 misspelled words, 0-1 grammar mistakes, minor APA, or in-text citation error.	Project submitted on time. Has improper number of pages or 2-3 misspelled words, 2-3 grammar mistakes, minor APA, and in-text citation error.	Project submitted late. Has improper number of pages, and has >3 misspelled words, >3 grammar mistakes, moderate amount of APA and in-text citation.	Project not submitted.
Professionalism	Communicates clearly with all involved in the project. Follows rules and policies of the practice setting.	Communications are inconsistent with all involved in the project. Follows rules and policies of the practice setting.	Communications are inconsistent with all involved in the project. Inconsistent with following rules and policies of practice setting.	Communications are inconsistent or non- existent with all involved in the project. Did not follow rules and policies of practice setting.

Sampling Method

All committee members of the RN-to-BSN CCC were invited to participate in this project. The inclusion criteria for the expert panel were participants in the RN-to-BSN CCC, RN-BSN educators, who had familiarity with the steps of SAM and ST. The exclusion criteria for the expert panel were RN-to-BSN educators who had not creatively applied ITS to practice.

Ethical Considerations

This scholarship of teaching project was not a formal research study and did not require an IRB review. However, the expert panel was cognizant of the need to protect the confidentiality of any data obtained from the previous implementation of the ITS. This project sought to inform and encourage future scholarship in teaching and learning through the sharing of gleaned experiences and wisdom in this area. The expert panel verbally agreed to work collaboratively and understood that they were able to stop their engagement in the modified Delphi technique at any time without any repercussions. No student data or identifying information to any educational organization were collected.

Results

Expert Faculty Panel Characteristics

A heterogeneous sample of 14 RN-to-BSN faculty who serve as national leaders focused on QSEN integration among RN-BSN students completed this project. The opportunity to participate was presented by the RN-BSN CCC co-leaders at a regular committee meeting and was open to all committee members. They represented 10 public and 2 private universities across the United States and were either Master's or doctorally-prepared. Teaching experience ranged from 4 to 30 years. The class sizes of the various institutions range from 12 to 25 students.

Innovative Teaching Strategies

Faculty identified, that when working with RN-to-BSN students, they used similar approaches in face-to-face, hybrid, or online teaching and learning environments. The team was focused on the specific use of ITS in fieldwork learning experiences. A shared Google drive was used to house the minutes and working documents. They each identified that their RN-BSN students were expected to implement evidence-based practice (EBP) or quality improvement projects in practice settings. The consensus of the

RN-to-BSN CCC was that fieldwork projects using an ITS must be creatively applied to practice or substantiated using evidencebased tools, as well as having students leading and managing quality and safety in practice settings.

Faculty described how they championed quality and safety by assisting students to address real-life practice gaps, guiding them to lead meaningful change within their practice settings and work environments. Specific examples included "Friday Night in the ER," "Plan-Do-Study-Act presentations," and "Sepsis Reduction within a Hospital System." These examples of how faculty have championed quality and safety were described as helping students be informed about Joint Commission sentinel event alerts, performance measures, characteristics of high reliability organizations, and reinforcing zero harm safety cultures in the practice arena. The discussed projects used a preceptor or mentor model to guide project implementation. The distinguishing factor for using a preceptor versus a mentor was compliance with program policy and/or state law. For this scholarship of teaching project, SAM was adapted to develop and categorize RN-to-BSN students' scaffolded learning experiences and capstone-type fieldwork projects. The adapted version integrates the use of ITS in classroom, hybrid, and online environments to foster nurses with effectively leading and managing quality and safety within the complex systems where they work (Figure 1). Students' fieldwork projects were categorized according to the corresponding level of the modified SAM. Overall, faculty described projects that empower students with essential competencies for instituting change in complex health care systems. Discussions addressed the project purpose, learning objectives of the project, justification for the project from a systems thinking perspective, implementation of the plan, use of evidence-based practice in the plan, evaluation, products used in the project, timeline for completion of the project reflected in a graph or table format, and professionalism. The ITS were selected based on consensus using the modified Delphi technique. These criteria were used to develop a rubric (Table 1) that could be used by faculty in the evaluation of student presentations based on the fieldwork learning experience. A passing score will need to be determined by each program.

Step 1: Fundamentals of Leadership and Management Applied to Nursing Practice

Concepts related to the fundamentals of leadership applied to nursing practice involve three primary concepts: theories and principles of leadership and management, characteristics of effective leaders and managers, and organizational edifice. To apply these concepts to the practice setting, a fieldwork project entitled, Improving Vision, Mission and Strategic Planning Awareness, addresses organizational edifice to advance student knowledge on how nurse leaders translate objectives into actionable cost, performance, and time-related measures. Students worked with one another, along with agency staff, to identify and advance the organization's mission, vision, and strategic plan. Students collaborated with agency leaders to develop a plan using a survey to assess agency staff knowledge, offer an educational intervention (e.g., using a video, PowerPoint, brochure) and then evaluate or conduct a posttest of staff knowledge. This fieldwork project aligns with QSEN competency - patient centered care -

by reinforcing organizational vision, mission, and strategic plans that are central to meeting the needs of the patient, family, and community, and by fostering teamwork and collaboration. This ITS also aligns with the American Association of Colleges of Nursing (AACN) *The Essentials: Core Competencies for Professional Nursing Education* (AACN Essentials; 2021) "Domain #10: Personal, Professional, and Leadership Development", in that the activities support the acquisition of nursing expertise and assertion of leadership.

Step 2: Leadership Experiences with Cognitive Restructuring in Health Care Settings

Concepts related to this step involve self-awareness and systems theory to distinguish between dysfunction and function, and to exhibit situational awareness related to civil protection, fairness, and equality when leading and managing others (implicit bias). To apply these concepts to the practice setting, a fieldwork project entitled, A Health Equity In-service to Reduce Implicit Bias, offers students the opportunity to work with staff in agencies to develop an in-service, virtual module or workshop by pre- and post-testing their level of implicit bias using Harvard's Implicit Bias Test (Project Implicit®, 2011), and then offering the Institute for Healthcare Improvement (IHI) Open School Health Equity videos to educate staff. This fieldwork project aligns with the QSEN competencies, patient-centered care and quality improvement, because implicit bias can impede communication and influence healthcare provider actions and team performance and defines organizational culture. The project addresses the AACN Essentials (2021) Domains #6.4 titled "Work with Other Professions to Maintain a Climate of Mutual Learning, Respect, and Shared Values" and #10.3 titled "Develop a Capacity for Leadership."

Step 3: Critical Reasoning of Today's Leadership/Management Challenges Based in QSEN

Concepts related to this step are prioritizing resources (e.g., staffing and budgets) and crisis intervention. Today's leadership and management challenges must integrate best practice to maximize safe optimal outcomes, especially during crises. To apply these concepts in the practice setting, a fieldwork project entitled, *Stop the Bleed*TM certifies people to save lives during a bleeding emergency. RN-to-BSN students led *Stop the Bleed*TM programs in hospitals or other community-based settings to teach crisis intervention using best practice (American College of Surgeon, 2019-2021). This fieldwork project aligns with the QSEN competencies of "EBP and Safety" and the AACN Essential (2021) #10.2j, "Expand Leadership Skills Through Professional Service."

Step 4: QSEN Mastery Explicit for Leading and Managing Interdependent Relationships and System Functions

Concepts related to this step are communication, teamwork, conflict resolution, negotiating, and problem-solving. To apply these concepts in the practice setting, a fieldwork project entitled, *Friday Night at the ER® (FNER)*, was coordinated by a student or student group hosting a game night for agency employees. FNER is an interactive board game that mimics workflow in a simulated

hospital emergency room (Breakthrough Learning, 2019). Players manage four hospital departments over a 24-hour period. A trained facilitator conducts a group debriefing with a focus on systems thinking. FNER provides a teaching strategy conducive to interprofessional learning and has been used by nursing students and interprofessional teams (Sanko et al., 2021). A positive impact on ST scores via the Systems Thinking Scale (Moore & Dolansky, 2010) after playing FNER has been observed (Sanko et al., 2021; Thornton Bacon, 2018). Learning among interprofessional staff was validated by student-led debriefing sessions. This fieldwork project aligns with the QSEN competency of "teamwork and collaboration" and with the AACN Essentials (2021) Domain #6 "Interprofessional Partnerships in that the Activity Involved Intentional Collaboration Across Professions to Manage Care of Patients."

Step 5: Professional Standards of Conduct, as Related to Leading and Managing

Concepts related to this step integrate the ANA Code of Ethics for ethical decision- making. To apply these concepts in the practice setting, a fieldwork project entitled, the Utilitarian Ethics Moral Distribution of Resources, was implemented. Students worked with agency leadership to assess agency staff views (i.e., using a focus group) on the availability and distribution of personal protective equipment (PPE) during a pandemic and then offered an educational intervention using a video, PowerPoint, and a brochure on the topic of utilitarianism. Pre- and postevaluations are consistent with ethical decision-making. This ITS aligns with the QSEN competency, EBP and Safety where students discriminated between valid and invalid reasons for modifying best clinical practices based on available resources. The AACN Essential (2021) aligned with this project is #10.2, "Demonstrate a Spirit of Inquiry that Fosters Flexibility and Professional Maturity," and #10.3i, "Recognize the Importance of Nursing's Contributions as Leaders in Practice and Policy Issues."

Step 6: Decision Making Applied to System Complexity and Professional Standards

Concepts related to this step include risk management, error mitigation and change theory. To apply these concepts in the practice setting, a fieldwork project entitled, Sentinel Event: An Analysis and Action Plan, focuses on viable system-based improvements in an acute care setting. Students worked independently or in groups to identify a potential sentinel event, such as harm caused by a medication error. Students engaged with agency staff to mitigate the potential event by developing a root-cause analysis diagram and a detailed EBP plan for corrective action. Pre and post assessment occurred through survey, debriefing, preparing a bulletin board, in-service module or recommendation for policy change. This assignment encourages students to be less reliant on faculty by achieving a higher level of comfort in decision making and interdependence among colleagues, teams, and the organization. They acquired survey development skills for evaluating the participants' understanding of the error mitigation. The project aligns with QSEN competencies by promoting teamwork and collaboration, EBP, quality, and safety. In addition, this project supports the AACN Essentials (2021) Domain #10, "Personal,

Professional, and Leadership Development" by promoting critical thinking and managing change within a complex environment.

Step 7: Effectively Leading and Managing Quality and Safety in Complex Systems

Concepts related to this step pertain to complexity, systems focused actions, and performance measurement. To apply these concepts in the practice setting using a fieldwork project entitled Sepsis Reduction within a Hospital System, students completed a comprehensive assessment across departments. They collaborated with interprofessional partners to determine prevention strategies and sepsis occurrence, and prevention-based performance criteria. Students created a detailed staff education program providing the RN-to-BSN student the opportunity to lead and manage sepsis prevention strategies by reporting pre- and post-education results and integrating performance evaluation standards as a sustainable change measure, including return on investments. All six of the QSEN competencies are executed. This innovative learning experience encompasses four of the AACN Essentials (2021): quality and safety (#5); interprofessional partnerships (#6); systems-based practice (#7); and personal, professional and leadership development (#10). Thus, faculty have experienced that as fieldwork projects align with higher steps of the SAM, and so do the rigor, robustness, and acquiescence within the clinical setting, further contributing to nurses' ability to use ST to enhance quality and safety.

Discussions

The impetus for faculty to incorporate fieldwork projects with the practice setting was guided by the AACN RN to BSN White Paper (2012) and the Commission of Collegiate Nursing Education (CCNE, 2018) standards. The AACN RN to BSN White Paper emphasizes the need for RN-to-BSN students to have quality fieldwork experiences in practice settings. The CCNE standard III-H specifically requires curriculum which includes planned clinical practice experiences that enables students to integrate new knowledge and demonstrate attainment of program outcomes; foster interprofessional collaborative practice; and are evaluated by faculty.

We have experienced that within practice settings, the learning experiences have increased in complexity with the advancement of each step of the modified SAM. For example, in Step 1, students advance the mission of an organization. By Step 7, they address system failures and integrate sustainable change using performance measures. Based on this observation, we recommend that systems thinking be measured before and after fieldwork projects to substantiate the effectiveness of student learning and application of knowledge into practice settings. It is recommended that the rubric template, based on criteria used during consensus discussion, be used when evaluating nursing student's fieldwork project presentations (Table 1). The rubric emphasizes exemplary performance and can be modified when used.

A study substantiating psychometric evaluation of a ST rubric (Phillips et al., 2019) could be adapted for capstone-like fieldwork projects. The ITS presented in this article have been used in

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practice settings but have not been formally studied as to their overall impact on quality and safety. The ITS are presented as ideal academic-practice fieldwork projects, designed to advance evidence-based system level change within practice settings. We recommend that the next research step is to study the impact of the ITS in the fieldwork projects completed by RN-to-BSN students in their workplaces or practice settings from the perspective of ST, leadership strategies, or specific health related outcomes.

Conclusions

The SAM adapted for leadership and management guided faculty to develop ITS for RN-BSN student fieldwork projects. Project examples were presented by QSEN's RN-to-BSN CCC in alignment with both QSEN competencies and AACN Essentials (2021). The AACN White Paper and the CCNE standard guided the use of these teaching strategies. A rubric for evaluating nursing students' presentations of their fieldwork projects and suggestions for future research were offered.

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ORIGINAL RESEARCH

The Sudden Transition of a Health Policy Course to Virtual Learning During COVID-19: Identifying and Implementing Strategies for Successful Learning

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Abstract

Background: The COVID-19 pandemic disrupted everything, including the educational system, as faculty and students transitioned from face-to-face learning to the virtual format. The significance of this research is to document the successful sudden transition of a health policy course to remote learning as a result of the resilience of faculty and students, to demonstrate that course outcomes could be met despite the switch in teaching format, and to show that the transition in learning can be replicated by other nurse educators. **Objective:** To describe the successful utilization of a health policy assignment as a vehicle for supporting undergraduate nursing students' learning, while transitioning from face-to-face instruction to the virtual setting. Methodology: A mixed methods case study research using an exemplar health policy assignment for 96 students was introduced to guide the development and organization of a well-constructed argument for a chosen public health issue. Online class time after the transition to the virtual setting included a weekly lecture, followed by an active working period for students and faculty. Follow-up meetings occurred between weekly sessions by phone or Zoom. Results: Despite the sudden transition from face-to-face learning to the virtual setting, this health policy course was successful in meeting course objectives and outcomes, with consistent faculty feedback and support in maintaining the learning process. Although there were unexpected challenges, faculty and students remained resilient, engaged, and committed to the importance of health policy during a period of a heightened sense of health awareness. The exemplar assignment prepared students to think, read, research, write critically, and offer and receive feedback in the midst of the pandemic. Conclusion: During the COVID-19 pandemic, students had an amplified sensitivity to learning more about health policy. In this health policy course, faculty aided student learning by focusing on quality teaching, student support, and resilience. The consistent faculty dialogue concerning compassion, resilience, and commitment to education was intentionally modeled in this course and recognized by the students.

Keywords: COVID-19, virtual learning, nursing education, nursing students, policy development, policy analysis

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The Sudden Transition of a Health Policy Course to Virtual Learning During COVID-19: Identifying and Implementing Strategies for Successful Learning

The COVID-19 pandemic disrupted the educational system but faculty and students adapted so that learning did not cease. By March 2020, many in-person classroom experiences transitioned to a virtual setting. Faculty adapted teaching methodologies for use in the online environment to ensure students' learning and academic requirements were met. In a Health Policy and Leadership Course for senior nursing students, faculty and students utilized the transition in learning mode, the focus on public health, and the increased interest in health policy to advance students' knowledge in policy development and advocacy. This research describes the sudden, yet successful, transition from the face-toface implementation of a health policy course to virtual mode and how adjustments were made to achieve the course objectives. The mixed methods case study describes the course content, project assignment, importance of the course topic (policy development), and clear communication with students to assist in their successful adaptation to a virtual learning environment.

Purpose of the Study: The Policy Matrix Project

A course on health policy and leadership is fundamental because it is essential to incorporate policy and politics into nursing education. The growing number of nurses in government and administrative positions highlights the need for a strong health policy curriculum. Furthermore, the current COVID-19 public health crisis sheds light on the intersection of policy, politics, and public health. The Institute of Medicine's report on the future of nursing called for more nurses in the policy-making sphere (Altman et al., 2016), but this cannot happen without proper education at the baccalaureate, master's, and doctoral levels. However, there are barriers to the implementation of policy curriculum including a lack of clinical faculty experts (Heiman et al., 2016), lack of policy curriculum, as well as disinterest among faculty and students (Anderson et al., 2020). As nurses are the mainstay of the public health workforce (Beck & Boulton, 2016), nursing education must include a curriculum that incorporates the development and analysis of policy and advocating for more equitable and safe care.

Previous literature described suggestions for integrating policy and advocacy work into nursing education. Preparing baccalaureate level nurses, specifically, to engage in policy requires carefully planned coursework. As suggested by Ellenbecker et al. (2017) the baccalaureate stage should encourage buy-in and self-interest, but during COVID-19, faculty felt especially challenged on how to achieve buy-in and interest when classes flipped to online learning. Suggestions for content dissemination include group projects (Byrd et al., 2012), service-learning or immersion experiences (O'Brien-Lavivee, 2011), simulation (Ellenbecker et al., 2017), case studies, and guest speakers. During COVID-19, many faculty were faced with limited technological resources while teaching from home (Morin, 2020). Students and faculty dealt with internet issues, broadband width, and computer access. Thoughtful conversation and reimagining of select nursing

courses must occur to best meet the needs of faculty and students and this requires thought and purposeful planning.

This mixed methods case study research describes how a traditionally in-person policy course, that suddenly transitioned mid-semester to a virtual format, encouraged, supported, and championed buy-in and interest during a very challenging time for students and faculty. The significance of this study is not only its successful transition to remote learning, but to share the successful outcomes and resilience of faculty and students despite the circumstances presented by the pandemic. Identified and emphasized are the pedagogical approaches that the faculty adopted to sustain student interest and motivation that contributed to successful course completion. The subject matter of public health policy and the importance of acquiring the skill to read, understand and learn policy cannot be overstated. The authors aim to share and encourage fellow educators to consider the adaptation of traditional teaching methodologies to achieve course objectives while accommodating students' needs in light of COVID-19.

Methods

The Assignment: Our Vehicle for Successful Growth and Learning

Students were introduced to a tool that guided the development of a policy matrix concerning a public health issue. During class meetings, students participated in small groups to work on a faculty-approved public health policy. The students' tasks were to complete the assignment using the matrix and present their work at the end of the semester.

Assignment Details – Part I

The transition to virtual learning in the spring of 2020 resulted in the adjustment of course assignments. Faculty and students in this policy course agreed not to alter the commitment to the course's core values, including nursing, leadership, public health, and health policy. The community of 98 members (96 students and 2 faculty members) agreed, during a class discussion, that this assignment could be challenging to complete remotely. The students committed to the required coursework and both faculty members worked with the students to make the assignment happen.

Students were introduced to a matrix to guide the development and organization toward making a cogent argument for their chosen policy issue. Online class time included a lecture by a faculty member followed by an active working period for students and faculty. During the online collaborative sessions, students worked in small groups to research sections of their policy interests. Nineteen groups of 4-6 class members each were formed based on student self-selection according to their area of policy interest. Many of the policy areas selected were from the American Public Health Association's website "*Topics and Issues*" section (American Public Health Association, 2021). The matrix incorporated headings, including a problem statement, background (including history, evidence, and ethics), and landscape (including stakeholders, budget, and politics). The students composed three options to resolve the problem - each option needed to include feasibility, workforce, logistics, and cost. The final step on the matrix included making a well-defined recommendation to stakeholders while offering a rationale for that endorsement based on practicality, feasibility, and a costbenefit analysis.

During the group working sessions, faculty were available for consultation and group appointments via Zoom. The appointments were intended to engage and hold group members accountable, evaluate the project's progression, discuss and apply group dynamics, and allow students to experience and value teamwork. During the group meetings, the faculty facilitated students' identification of areas where they felt stuck, brainstormed the next steps, and set future goals. The students were encouraged to break the project into sections to share the workload and complete weekly reviews of each member's contribution. The faculty modeled and encouraged frequent delivery of constructive recommendations to improve peer-to-peer feedback and enhance student policy development. In addition, faculty established a caring and supportive environment, and discussed the relevance of resilience. Students were advised that the expectation for the finished matrix should be between 7-12 single-spaced pages, with an additional page for references

Assignment Details – Part 2

Part 2 of the assignment was to present the finished project via Zoom to faculty and peers. Each team was required to make a 10-minute PowerPoint presentation (7 for presentation, 3 for questions) during the final two weeks of class. The presentations needed to include a summary of the issue, background, ethics, landscape, policy options, and recommendations. The faculty offered presentation tips, including slide creation, the importance of rehearsal, deciding which group members would speak, and how to present on Zoom. At this point during the pandemic, Zoom presentations were relatively new to many students.

The grading rubric, a sample matrix, and PowerPoint were shared and reviewed with students during the course's early weeks. Students were regularly reminded that a collective grade would be given to all group members for both assignment parts.

Results

First Four Weeks of the Semester

Students selected their groups according to their public health policy interests during the first week of the semester. During the initial working period, key issues included encouraging students to identify a unique problem, drafting a policy statement, and beginning the research process. Of the 19 groups, only one group needed to adjust their initial topic because it was addressed in a recent federal policy initiative. Students needed encouragement to research their topics both in and outside class sessions. Although this cohort of students had completed a research course that included the tools to conduct a literature review, they required a recollection of the databases housed on the University's server and how to make a virtual appointment with the librarian. The students also needed an introduction to government websites, including how to locate past and proposed bills at the local and federal levels.

Second Four Weeks of the Semester

During the second four weeks of the semester, students added to their matrices by researching and filling gaps in their findings. Students engaged in writing, editing, and lively conversations during working group sessions in order to establish a final recommendation. Students' decision-making incorporated concepts from lectures, meetings with faculty, and readings.

Final Four Weeks of the Semester

The concluding four weeks involved refining the final recommendation, polishing the finished product, and producing the oral report. Students created slides, rehearsed, and decided between having one spokesperson speak or dividing the slides and having multiple speakers.

Lessons Learned

Resilience and Commitment of Students and Faculty

Mid-semester, class sessions shifted from a weekly in-person collaboration to remote learning, which required resilience and commitment of all involved. The lecture occurred via Zoom at the assigned time to create a sense of routine. It was also recorded via VoiceThread and posted on the Blackboard course site for those who were ill, had Wi-Fi issues, family obligations, or needed to hear it again to best promote their learning. A schedule was created and shared for groups to convene a weekly 20-minute meeting over Zoom with the faculty. Meeting times evolved to include early morning, evening, and weekends due to the novel nature of working from home. Additionally, many students had various obligations and needed to share educational resources, such as computers, with other family members. The faculty was committed to the students' optimal experience regarding the learning process, crisis support, and the importance of modeling resilience and commitment (Reyes et al., 2015). Post-course evaluations supported these goals, with students reporting that the faculty was "supportive," "understanding," "positive," "inspiring," "encouraging," "helpful with feedback," "organized," and "offered clear expectations."

Compassion and Dedication to the Subject

All 19 groups submitted finished matrices on topics ranging from housing insecurity at the local level, school-based health issues at the state level, to gun violence prevention at the federal level. Because faculty and students read drafts and offered ongoing feedback as the semester progressed, the finished products were excellent. The level of excellence produced by the finished products demonstrated that weekly check-ins between faculty and students were key to the project's success. The students indicated feeling supported by the group's commitment to the project and the frequent faculty check-ins, which advanced their commitment, passion, and learning about the topic. Students reported that small It should be noted that week-to-week encounters did not always go as planned, which may have been a function of remote learning. However, as a group led by course faculty, we acknowledged the work involved and discussed that we should expect bumps along the way. Faculty reiterated with students that they would offer assistance and modeling regarding timelines, assigning project sections to work on, clarifying expectations regarding next steps, and offering compassion concerning group or group member's struggles. Some groups either requested or required more frequent check-ins via email, phone, or Zoom. This type of teaching and learning experience is translatable to real-world life situations and one that these faculty-authors will continue to encourage in all future courses, whether teaching virtually or in person.

Implications for Nursing

Importance of Policy

Public health advocacy in nursing education is valuable and important (Morris et al., 2019). Health care providers can and should advocate to protect their communities from preventable health threats but are often unsure how to do so. Involvement in public health policy must address ongoing public health concerns and include access to care, funding for services, and eliminating health disparities. The conversion from an in person public health policy and leadership course to an online format took place during the COVID-19 pandemic. Given this background, faculty and students had a heightened sensitivity to learning more about policy and how they could translate their nursing and health policy skills to positively impact their communities. This was an opportune time for students to learn about advocacy and policy development. The faculty believed that the students were much more passionate about this class and assignment due to the pandemic and that they felt they could be change agents. There were many unexpected challenges regarding students' successful completion of the course. However, the students appeared to be aware of the importance of health policy and the impact that they could play in addressing it during this time of heightened public health awareness. While this course began as an in-person class, students voiced that they were appreciative of faculty flexibility with the shift to remote learning.

Importance of Engagement and Collaboration

In a policy course guided by dedicated faculty, students are educated on analyzing and explaining significant issues and trends affecting policy, especially involving clinical areas of interest. Along with working on policy, students learn to incorporate and discuss leadership and management and how it applies to nursing, health services, and course goals. Particularly in a course with a focus on public health policy, faculty and students must continue to consider and hold conversations about nurses' engagement and collaboration in professional associations and how these opportunities might involve policy developement (Anders, 2021). The faculty need to ensure that students gain knowledge in laws and regulations that govern nursing practice, including the scope of practice and professional performance. By the end of the semester, students should be able to describe advocacy, health system change, and the legislative and regulatory processes.

The exemplar assignment for this course allowed students to gain a basic understanding of budgeting and managing financial resources in their areas of interest. While working virtually as group members, supported by faculty modeling, students developed strategies for successful team building. As is the case when the class is held in person, the virtual presentations allowed students the opportunity to engage in public speaking. As a group, members decided what they wanted to include in the presentation, how they wanted to say it, what they wanted to share visually, rehearsing on how to respond to press conference-style questions, and practicing the art of listening, collaboration, and professionalism.

Faculty Reflection

The pandemic brought a heightened sense of compassion and humanity that may change higher education in the near future. Faculty committed to having the final project grade reflect group effort, teamwork, and adherence to the assignment, with students' participation observed during small group meetings that were held on Zoom throughout the semester. Based on the student reports at the Zoom small group team meetings, faculty observed that students effectively divvied up the work in between these meetings. Faculty also pledged to students that all course standards, objectives, and outcomes, as established by the course syllabus, would be met in the remote environment and that faculty would remain transparent with any changes during the semester. Faculty felt that they could best support students' learning and compassion for their policy areas by adding themselves into the groups to model teamwork, patience, accountability, and resilience. Although many of the digital platforms that were used were not new, we were very grateful to the Center of Teaching and Learning at our University for supporting faculty use of the available technology. Faculty felt that the best way to support students' learning and compassion for their policy interests was by adding themselves into the groups to model teamwork, patience, accountability, and resilience.

Students were held accountable by frequent virtual faculty and group check-ins. Students became accustomed to reading drafts and offering feedback to peers. Initially, some students were inconvenienced by the check-ins as this required systematic research, writing, and editing. The students shared with faculty that they were unaware of the amount of consistent work required for the project; however, they were appreciative of this work as it contributed to thorough project completion and meeting course outcomes. Through course evaluations, students shared that the editing, drafting, and consistent feedback made them "better writers" and more "active learners."

Faculty committed to accommodating changes that group members needed. The original teaching plan did not include Saturday morning or late evening meetings, but many students needed these accommodations during the early stages of the pandemic. As a result, it is suspected that the flexibility and accommodation of faculty during the pandemic improved the students' commitment to the project and enhanced their engagement and learning. While faculty and students were committed to making the transition to virtual learning and are now aware that the mix of lecture, small group work, and meetings can be successful in a virtual environment, students and facultyauthors are eager to return to collaborating in the classroom. There was a considerable amount of administrative planning that was involved in teaching virtually. Once in-person assembly returns, faculty are hopeful that more time will be allotted to conversing, debating, writing, and researching versus making appointments, logging on and off virtual platforms, and concern about Wi-Fi connectivity.

Conclusion

This public health policy course, utilizing the sudden transition from face-to-face learning to a virtual educational experience, can be easily replicated. The curriculum and major assignment prepared students to think, read, research, write, offer and receive feedback critically, and present their outcomes in large and small groups. The nature of the interactive faculty feedback and support offered to students not only produced excellent final projects but supported course objectives, and most importantly, the learning process of our future nurses. Faculty focus on quality teaching, student support, and resilience, the latter a hallmark of nurses, made this course successful for this single cohort of 96 students despite the pandemic. The pedagogical strategies to which all course members committed, along with the course assignment, made the transition to online learning for a successful policy course that was much more meaningful than may have been the case if the course was held in its more traditional, in-person manner.

The COVID-19 crisis presented educators and students with unique challenges and opened all stakeholders to reflect on other possibilities to traditional teaching methods. Educators can design, create, and evaluate strategies to teach in a variety of modalities. It is hoped that this teaching exemplar used in a senior nursing leadership policy course will encourage fellow faculty to evaluate and remain flexible regarding their teaching methodologies. Students are ready to be the next generation of nursing leaders, and the faculty is confident that students have the skills to become involved in policy work. The dialogue surrounding compassion, resilience, and commitment in education can go very far, particularly when modeled well.

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ORIGINAL RESEARCH

"A whole day, I might not say a word": Responses to the Pandemic by People with Parkinson's

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Abstract

Background: The widespread SARS-CoV-2 or COVID-19 virus accounted for approximately 2.5 million deaths worldwide. Parkinson's Disease (PD) is a progressive movement disorder of the central nervous system in which the loss of dopamine results in motor and nonmotor symptoms. Stress can exacerbate PD symptoms. The purpose of this study was to examine the lived experiences of persons with Parkinson's disease during the COVID-19 pandemic. Research Question: The research question, "what is it like to live with Parkinson's Disease during the COVID-19 pandemic?" guided this study. Examining the subjective lived experiences and meanings of living with PD during the COVID-19 pandemic will advance nursing science by providing insight into the long-term effects as well as the care and services needed to improve patients' health and well-being. *Methodology:* This study employed a phenomenological approach to examine the subjective lived experiences and meanings of living with PD during the COVID-19 pandemic. A sample of 14 participants with PD were interviewed. Colaizzi's seven steps were used for data analysis and methods to ensure trustworthiness were employed. *Results:* Three themes emerged: (1) pandemic effects, (2) adaptations, and (3) stress and coping. Categories representing the pandemic's effects included restrictions, the effects of restrictions on physical and mental health, and precautions. Categories representing adaptations included being intentional about contact, activity adaptations, and relocation. Categories representing stress and coping included stress effects, coping, and stress and the pandemic. Limitations: This was a small homogeneous sample. All were white and educated individuals, recruited from two service organizations in Texas, and unaware of their PD staging. At the same time, everyone with PD experience different symptoms and stress responses creating heterogeneity. Conclusion and Recommendations: Based on the findings of this study, a holistic assessment should be conducted during routine visits with people with PD. Nurses and other health care professionals should be aware that a pandemic may have a holistic effect on the well-being of persons with PD necessitating assessment beyond the classic symptoms of tremor, bradykinesia, rigidity, and postural instability.

Keywords: central nervous system diseases; brain diseases, Parkinson's Disease

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"A whole day, I might not say a word": Responses to the Pandemic by People with Parkinson's

Introduction

Parkinson's Disease (PD) is a chronic, progressive neurological disorder that affects the motor system and is commonly recognized by the classic symptoms of tremor, bradykinesia, rigidity, and postural instability (Parkinson's Foundation [PF], 2021). Approximately ten million people worldwide live with PD (PF, 2021). Currently, there is no cure and individualized treatment is tailored to symptomatology. Treatment may include medications, surgery, and lifestyle modification in which emerging evidence suggests that exercise may help delay disease progression (Ahlskog, 2011; Goodwin et al., 2008; Paillard et al., 2015).

The pressures of daily life can substantially impact health concerns. Specifically, stress can have a negative effect on persons with PD resulting in anxiety and depression, and can also exacerbate PD symptoms (Sulzer et al., 2020). The global COVID-19 pandemic may further compound stress and exacerbate symptoms given lockdowns, strict guidelines, fear or anxiety of leaving one's home, and disruption of pre-COVID daily routines. People with PD experience uncertainty, for example, medication efficacy which may affect their ability to function. The uncertainty of the course of this condition under this pandemic scenario presents unique challenges for nurses, other healthcare professionals, and organizations serving people with PD. Therefore, a comprehensive assessment of the individual beyond the classic PD symptoms is essential.

Data regarding the effects of the pandemic should be considered in relation to PD. According to Johns Hopkins University's tracking system (2021), over 2.9 million people have died worldwide from the widespread SARS-CoV-2, the virus that causes COVID-19. While a PD diagnosis does not increase a person's risk of developing COVID-19 (Ferini-Strambi, 2020), advanced age and chronic illness, such as PD, place an individual in a high-risk group (Zhang et al., 2020). Coronavirus affects the respiratory system and because people with PD are at an increased risk for developing pneumonia, they are categorized as a vulnerable population, further validating them to be at high risk (Zhang et al., 2020). A study conducted by the University of Iowa Health Care (2020) revealed a 30% increase in mortality among people with PD compared with people without (n = 80,000). The American Parkinson's Disease Association [APDA] (2020) summarized current literature about PD and the COVID pandemic. Key takeaways from this report include older individuals with PD experience increased mortality; those without a diagnosis of COVID-19, but in lockdown, experience increasing motor and nonmotor symptoms; and persons with PD, who contract COVID-19, report sequala of either worsening of or new PD symptoms (APDA, 2020). It is within this context that the researchers were prompted to conduct a study for the purpose of examining the lived experience of persons with PD during the COVID-19 pandemic. The research question, "What is it like to live with PD during the COVID-19 pandemic?" guided this study.

Literature Review

The literature highlighted the effects of the COVID-19 pandemic on persons with Parkinson's Disease and its global impact. Literature originated in Italy (Antonini et al., 2020; Schirinzi et al., 2020), Egypt (Shalash et al., 2020), India (Prasad et al., 2020), Morrocco (El Otmani et al., 2021), Iran (Salari et al., 2020), and the United States (Brown et al., 2020; Subramanian et al., 2020). Since the pandemic, people with PD reported increased motor (Brown et al., 2020; Prasad et al., 2020), non-motor (Prasad et al., 2020) and autonomic symptoms, and problems with sleep (Brown et al., 2020). People with PD also experienced challenges completing activities of daily living (Brown et al., 2020). Their psychosocial functioning resulted in limited activity and social and exercise engagement (Shalash et al., 2020) further exacerbating their symptoms (Brown et al., 2020). Isolation secondary to COVID-19 stay-at-home restrictions resulted in loneliness and correlated with decreased quality of life (QoL) and increased PD symptomatology (Subramanian et al., 2020). Reduced cognition, mood, (Brown et al., 2020) fatigue, anxiety (Antonini et al., 2020; Prasad et al., 2020; Salari et al., 2020; Shalash et al., 2020), depression, and stress (Helmich et al., 2020; Prasad et al., 2020; Shalash et al., 2020) were reported. On the contrary, El Otmani and colleagues (2021) found that a six-week confinement did not result in a statistically significant change in depression and anxiety scores among 50 Moroccan people with PD. Older people with PD and those who have been diagnosed with PD for a longer time were more susceptible to COVID-19 and experienced greater mortality (Antonini et al., 2020), while younger people with PD reported worsening of PD symptoms (Schirinzi et al., 2020). In response to worsening motor symptoms, levodopa doses were increased (Antonini et al., 2020).

Methods

Design

This study employed a phenomenological approach to examine the subjective lived experience and meanings of living with PD during the COVID-19 pandemic. Phenomenology "seeks to describe the essence of a phenomenon by exploring it from the perspective of those who have experienced it" (Teherani et al., 2015, p. 91). This is an appropriate methodological design to reveal the essence of the lived experience (Creswell, 2013).

Sample

Purposive and snowball sampling were used to identify participants who have PD and were willing and able to share their experiences of living with PD during the COVID-19 pandemic. The inclusion criteria were: individuals 30 years of age or older, able to speak, read, and write English, have a diagnosis of Parkinson's Disease, have Internet access or an electronic device with a camera and microphone, demonstrate understanding of the study purpose and expectations, and able to provide consent to participate in this online research study.

Setting and Data Collection

Following Institutional Review Board approval and written informed consent, in-depth, semi-structured interviews were conducted online using Zoom, a videoconference platform, and were digitally recorded. All participants, except for one who completed a phone interview, joined the Zoom meeting online from their home. A camera allowed the researchers to observe nonverbal cues for clarifications, such as gestures and facial expressions. Demographic questions and an interview guide consisting of open-ended questions elicited rich thick descriptions and an opportunity for participants to share their experiences. Questions were not limited to the effects of the pandemic on PD symptoms. The interview questions were also broadly stated to elicit the full effect of the pandemic on their lived experiences (Appendix A). Probes were used to clarify the meaning of responses and encourage in-depth descriptions. Trust and rapport were initiated and maintained throughout the interview process. Every effort was made to assist the participants to feel comfortable discussing pandemic experiences and share insights. Furthermore, all participants were informed that they did not have to answer any question they did not want to answer and could stop the interview at any time. Data collection continued until recurring themes emerged.

Data Analysis

A systematic approach to data analysis, congruent with the phenomenological design, was used to analyze the participant transcripts following Colaizzi's (1978) seven steps of data analysis. The process will be described to demonstrate rigor in the data analysis process. The initial step began with reading and re-reading the transcripts in their entirety multiple times to understand the essence of the participants' experience. Next, significant statements were then extracted related to the phenomenon being studied. Meanings were then derived from the significant statements formulated, categorized, and clustered into themes of commonly shared perceptions by the participants. Following clustering, the themes were described and supported by participant quotes. Findings were shared with a subset of participants for validation to ensure accurate representation of the phenomenon and, based on the emergence of new and relevant participant data, were included in the final analysis.

All of the interviews were audio-recorded using a primary and back-up digital recording and the interview transcripts were recorded verbatim and verified for accuracy. Researchers simultaneously listened to the audio recording, read the transcript and corrected errors as needed. The process of coding involved two methods whereby the primary investigator manually coded the interview transcripts while the second author utilized qualitative data analysis software, NVivo version 11. Furthermore, notes were made along the margins. The dual use of digital coding (NVivo) and traditional paper, pens, and highlighting rendered greater insight, producing a rigorous and robust analysis. The files were reviewed independently and the researchers came together for ongoing discussion to establish intercoder reliability. The data analysis process was cyclical whereby the research team met frequently to discuss insights to support the continuous process of reflecting and understanding to further elicit meaning (Creswell,

2013). Categories and themes were validated by participants and both researchers. The findings section was emailed to three participants who read and confirmed an accurate representation and no revisions were required.

Hard copies of the informed consent and demographic data were stored in a locked file cabinet to which only the researcher had access. To ensure confidentiality, participant data were deidentified and stored separately from the coding list, and no names were included in the transcripts. All data were saved on a password-protected computer with firewall security and shared electronic files were stored on a password-protected program. Salient participant quotes, with no identifiable data, were included to support the themes that emerged.

Findings

Fourteen people (n = 14) with PD were recruited from organizations serving people with PD. The purposive sample included five men and nine women all of whom were Caucasian and had some college education. The average age was 70.5 and ranged from 60-82 years. The average length of time since diagnosis was nine years with a range of two to 19 years.

Three themes emerged from the data: (1) pandemic effects, (2) adaptations, and (3) stress and coping. Categories representing the pandemic's effects included lifestyle restrictions, the effects of restrictions on physical and mental health, and precautions. Categories representing adaptations included being intentional about contact, activity adaptations, and relocation. Categories representing stress and coping included stress effects, coping, and stress and the pandemic.

Pandemic Effects Lifestyle Restrictions

Most participants identified ways the pandemic affected them. However, five indicated, "it doesn't occupy my thought very much," "it really hasn't changed my lifestyle very much at all probably because we still go out a lot," and "it hasn't affected me in any special way." Restrictions imposed by the pandemic included event and activity limitations, socialization and physical contact with friends and family, and travel. Activities in which participants no longer engaged in were listening to live music, going to museums, restaurants, movie houses, churches, beauty shops, parties, wine tastings, and shopping trips. Parkinsonspecific activities such as support groups and Rock Steady Boxing, a non-contact boxing program for people with PD, were no longer offered in person. "I really miss not being able to exercise in a group setting. I find it so much more motivating than going by myself," stated one participant. Activity limitations were evident in statements such as, "thrown havoc into our calendar" and "forc[ed] out of [my] routine." The lack of social interactions and physical contact with friends and family members were shared. "I'm clearly worried about my wife's mother (a resident in an independent living setting). We really prefer to see her more often," said one participant. Another said, "my husband is afraid of exposing me to them (family members). And they're afraid" and "she (niece) can't (drop by with dinner) anymore because she works as a teacher and they don't want to infect me." Interactions with grandchildren were especially missed and verbalized as, "Oh, my gosh, why am I going to start crying? It's just bringing back the memories of not being able to see my grandkids for like a month when I was used to seeing them every day. Another participant shared, "not seeing people, not being able to see my friends . . . 'It's great to see you', I miss that." Lack of physical contact was evident:

When we hit the door, I'll try not to cry, he (participant's grandson) just wants to hug me. 'Now, you can't do that. You see Papa might get sick', I have to tell him. And a four-year-old said, 'I can't hug you, Papa?', because he has trouble understanding.

Other participants recalled, "I'm alone, haven't hugged anybody in a very long time, since March" (eight months since the time of the interview). "I am a people person. I'm a hugger. I have a tree across the street that I hug, but that's about-- and my wife of course," and "I'm in hug deficit."

Travel to visit family and for pleasure had been limited. "We don't travel right now because of the COVID danger" said one participant. Another responded, "I have a daughter and three grandchildren on the East Coast. My son's in Boulder. And we were always seeing them every month or two. I haven't seen them since February." One participant was angry that she had to cancel a trip: "I had a trip planned with my best friend from college to fly to Seattle, and we're renting a Volkswagen camper there and we were taking a trip around the Olympic Peninsula." Two participants had traveled out of state to visit family and while participants clearly missed traveling, the cost savings was acknowledged, "we've been able to save money because we're not traveling."

Precautions

All but one participant mentioned the need to take precautions: "Wearing the mask is something that you just automatically do now," "I wear gloves," and "I'm being cautious, washing hands and staying away from contact with other people." A participant stated, "I'm hibernating more." Another recognized that by wearing a mask "we're not just protecting ourselves, but we're protecting others." For one participant, setting boundaries for social distancing when others did not comply was difficult, "well, I didn't know how to tell him" (to social distance).

Health

Participants recognized the pandemic's effect on their physical and psycho-social health. Other participants felt that the pandemic had not affected their Parkinson's and one person described a benefit. "I haven't, to my knowledge, at least, experienced any difficulties with the Parkinson's that I think are related to the pandemic." The pandemic had a positive impact on one participant's health, "it's beneficial for me to be inside and stay isolated a lot because it allows me to regulate my medicines more thoroughly and do the exercise routines."

Physical complaints were related to lack of activity. "I find myself sitting in a chair longer than I would normally," "I can tell it's affected how limber I am or how flexible I am because I haven't had as much exposure to exercise," and "I don't have as much energy because I'm not out and about as much as I was before," said three participants. Some participants felt their Parkinson's symptoms were worse:

(The pandemic) kind of took over my Parkinson's because I kept getting weaker . . . I'm so worn out. Completely worn out. (The pandemic) affected the left side . . . I couldn't play the piano . . . my fingers wouldn't push the keys down.

Others experienced stiffness, achiness, sore joints, and more frequent freezing episodes.

Several psycho-social effects were identified. "I got one word, boring" stated one participant. Two people recognized changes in thinking: "keeping my mind straight (is the greatest challenge)" and "I was doing, trying to remember Dr. Oz's (television talkshow host) mandate to work your brain. That went away." Participants felt the stay-at-home directives were "depressing or irritating" and made them "mad and/or angry." Anxiety related to being "intentional that everything you do in protecting yourself, your family" and the potential long-term economic impact on retirement pensions. Another participant explained, "I'm not used to living in fear being conscientious about doorknobs, elevator buttons." Participants realized that they were at greater risk for negative outcomes if they contracted COVID which caused fear, "It's kind of scary" (being at greater risk because of PD). Isolation was an identified concern illustrated by the following, "I'm alone," "I'm lonely," and "a whole day, I might not say a word." One participant weighed the risks and benefits:

I think it's better to take the chance to go out and do the things that I want to do instead of isolating myself and making sure that I won't get sick just by isolating myself because I think that's very depressing, just to be isolated.

Changes imposed by the pandemic were highlighted by one who said, "the biggest struggle is not feeling normal. Yeah, it just doesn't feel normal in my life." At the time of the interviews, two participants were reaching out to their providers regarding symptoms of anxiety and depression.

For some participants, health care appointments were delayed while others met with providers virtually or face-to-face. "Both of those got moved back, so eye, teeth (appointments). My physical was moved back, too." Another participant stated, "my doctor wanted to see me through telemedicine," however, the participant insisted, "I need to see her. I want her to see my body. I want to see how I'm doing." Elective procedures such as cataract surgery had been delayed indefinitely.

Adaptations

Participants shared how they adapted to the pandemic including being intentional about staying in contact with others, activity adaptations, and relocation.

Being Intentional About Contact

To combat social isolation, participants became intentional about reaching out to friends and family. One participant asked himself, "What can I do to compensate? . . . I started making at least one phone call a day. . . trying to keep in touch as one way to deal with the obstacles . . . from the COVID." Others stated, "I've had to be more aggressive or assertive in making sure that I stay in touch with friends and relatives and even people that I don't

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really know that well," "The first thing I think of (in the morning) is who am I going to contact today and how am I going to do that? Because I don't want to be stranded here at home without anyone to talk to" and "I've had to work harder at social interaction."

Activity Adaptations

Activity participation was adapted. Some statements that relate to this include: "Church service is down to every other pew and five feet between people" and "We don't have communion in the way that we used to have it. We had to pick up our glasses ourselves and take into the sanctuary." One participant emphasized:

I went and parked my car at the curb . . . in front of the church because we were doing commitment Sunday . . . they spaced out everybody. But I just stayed in the car . . and everything was on the front steps and music can somehow be heard. I got part of it, and that was really important to me.

If possible, participants socialized outdoors: "We sit out sometimes on the porch and talk." Others voiced, "we talk over the fence and that's kind of nice" and "(The restaurant) has a patio outside and just get together (with neighbors)."

Some activities pivoted to online offerings and the benefits derived from and disadvantages of using online formats such as Zoom, an online meeting platform, were identified. "Thanks to Zoom, we've been able to maintain . . . religious services or talks" and "I don't have to drive (to PD support group) . . . get out in heavy traffic and worry about having an accident or a whole other set of problems." A participant who "didn't like the idea of virtual classes" attended an online presentation by the local PD organization which emphasized the importance of staying physically active. The participant "thought, 'Oh, I really have to do that' (attend online exercise class)."

Zoom helped participants stay connected with family. "Thank goodness we figured it out . . . when (Zoom) came on the scene, things were better that I could see them (family) and talk to them." While useful, online visits were not the same as in-person contact, "We do Face Time with the kids, but it's not hugging and kissing them" and "I don't find Zoom satisfying at all for seeing my sons, really, and they don't seem to enjoy it that much either, but we talk once a week." Another participant shared that her husband was scheduled for in-patient surgery, "thank heavens for iPads and iPhones so at least we can see each other."

Online classes promoted socialization:

Without the Zoom classes, I'd be lost. I don't know what I'd do. I'd be very, very down and out, but because of all these Zoom classes that (the organization) provides, it's really wonderful. I'm in a book club. I wouldn't have thought I'd be-- I'm in a book club. I do all these speech classes. I mean, I do everything that they put out. They put out a lot of stuff. I mean, almost every exercise they have, I do . . . it's been a lifesaver.

Access to national speakers was appreciated:

Michael J Fox speaks to us through Zoom. We didn't do that with him, with Michael J. Fox, before the pandemic. Here's a man walking the same walk I'm walking: early diagnosis, 29 years old. Look what he's done with his foundation. He's 59 now, 30 years, and he tells me, 'Okay, here's my secret. I don't have a secret. I'm just trying to be grateful every day. I get up.' He just inspires me. I never would've gotten that without the pandemic because I probably never would've seen Michael.

Disadvantages to online classes compared to in-person were recognized. One participant related that when in-person 40 - 50 people joined in the support group; however, when meeting via Zoom only 15-20 people were online. Resistance, lack of knowledge regarding how to log on, and concerns regarding confidentiality were cited as reasons people might not attend online groups. When comparing online versus in-person classes, participants explained that, "because you don't have as much eyes on (you during the exercise class) it's easier to get hurt or not be using the correct form" and,

You don't have anybody to just chat to (online)... even though you kind of have a little icebreaker in the beginning, you really don't get to talk to anybody. You get to see their faces and say, 'hello' and 'goodbye.' But you don't really get to share stories ... I miss the interaction.

Another participant concurred and shared other Zoom challenges:

Yes, it's physical (in-person boxing class), but it was also mental... it helped me mentally just to connect with people that I don't have to explain why I'm doing this or that. I mean, we all have Parkinson's, and we understand. When you're on those Zoom meetings, people talk. And then sometimes, you can't hear them. And then people start talking at the same time ... it's better than nothing. But it's still not the same as having the camaraderie.

Insight regarding potential therapeutic benefits which extended beyond the boxing class itself was suggested. One participant shared the benefits related to travel and having to walk in and out of the gym.

I had to get in my car and get up, walk, and go to and from the (gym)-- there'd be more movement involved rather than just going to turn on your computer and couple of steps in the house that way. It made me get up and get out. And there's a big difference between that and just walking a couple steps to the computer.

A participant who indulges in boxing as a sport acknowledged the lack of exercise equipment, "you don't have the bags (when boxing at home), the equipment that you usually have."

Two participants relocated to their beach homes for extended periods. "We thought it would be a better place to ride out the pandemic. So, we moved . . . I think it was in March or April, and we stayed there for several months." Another participant shared, "we're (at the beach house) for the month of December . . . the whole family's here. Yeah, that's what I mean by paradise. And my grandson comes almost every day."

Stress and Coping

Participants shared stress effects and how they coped during the pandemic. Stress caused physical responses, "you're slower . . . doing stuff," "activates my symptoms . . . brings up my sensations for Parkinson's" and "I have tingling in my body. I can't sleep." Others stated, "(my voice) might get a little worse," "stress will throw me into an off day," and causes dyskinesia and freezing. A specific example was shared, "when I'm watching TV, I noticed when the climax comes . . . I tend to shake more." Participants also related psycho-emotional reactions to stress, "I get all anxious about being on time," "I'm pretty grouchy, it affects me emotionally," "I get depressed . . . withdraw," and "I can get kind of angry."

Coping Mechanisms

Various coping mechanisms were shared. Participants exercised, did deep breathing or guided meditation, stayed busy, took a nap, talked to their spouse, or kept on a medication schedule. No participant shared that their Parkinson medications had been changed during the pandemic. Keeping a positive attitude was important: "My attitude is so positive, I deal with the stress by just telling myself, 'okay, go away'" and "you've got to be positive, or you can be down and depressed." Similarly, others said they tried to avoid stressful situations, "I try to avoid it (stress). Try not to think about it. Try not to get involved and just walk away from it." One participant talked about the importance of not getting drawn into other people's negativity, "I want to help them (people who are depressed), but . . . I got to keep myself upbeat too because some people just bring you down like Debbie downer." Another asked herself, "can I make a difference in the situation? And if I can't, I don't worry about it." When one person is unable to avoid stress, she made sure her husband was available for support, "all he has to do is he'll just grab my hand and hold it real tight or grab my arm, sit next to me very, very closely, and just sort of takeover." Participants looked to other people for inspiration or focused on that for which they were grateful, "I look at the examples of others and try to be inspired" and "I'd . . . realize how I'm fortunate . . . all the blessings I had throughout my life and focus on that, not what I can't be doing, but what I've done and will continue to do someday."

Coping with the Pandemic

Participants coped with the pandemic by staying optimistic and informed. "You just have to take a positive look, see everything with a glass-half-full-type outlook," "I have to constantly give myself a little pep talk on a daily basis . . . and then I'm okay," and "learning as much as I can about it and what we can and can't do." One reminded himself, "this (the pandemic) is temporary."

Discussion

Participants described what it was like to live with PD during the COVID-19 pandemic. Data were categorized into three themes: (1) pandemic effects, (2) adaptations, and (3) stress and coping. The pandemic resulted in lifestyle restrictions that affected participants' health and required precautions. Most participants discussed how the pandemic restricted activity participation including church, exercise, travel, and spending time with family and friends. References to lack of social interactions and physical contact such as hugs were common. Precautions were taken to avoid exposure to the virus. Participants wore masks and gloves and minimized contact with others.

Lifestyle restrictions affected physical and mental health. Like previous findings, the pandemic affected participants' physical

health (APDA, 2020; Brown et al., 2020; Prasad, 2020), and caused fatigue (Antonini et al., 2020; Prasad et al., 2020; Shalash et al., 2020). Our respondents specifically identified greater stiffness, weakness, and more frequent freezing episodes and attributed symptoms to less activity and exercise. Congruent with Shalash's report (2020), psychosocial well-being was negatively affected. Symptoms portrayed by our respondents reflect previous findings: depression (Helmich et al., 2020; Prasad et al., 2020; Shalash et al., 2020), social isolation, loneliness (Subramanian et al., 2020), fear, anxiety (Antonini et al., 2020; Prasad et al., 2020; Shalash et al., 2020), and decreased cognition (Brown et al., 2020). However, these results are in contrast with El Otmani (2021) who reported no change in depression or anxiety scores following a six-week confinement. At the time our interviews were completed, two participants were in the process of communicating depressive and anxiety symptoms to their physicians. Interestingly, when initially asked if the pandemic affected them these participants initially denied any effects. Only after responding to the interview questions did they come to realize that the pandemic had impacted their emotional health. This suggests that people might not realize the extent of stay-at-home directives, precautions, and social distancing. Upon reflection, the researchers believe that asking questions about the pandemic and allowing the participants to openly share their pandemic experiences allowed them to reflect and realize that the pandemic affected their symptoms of anxiety and depression. In support of the work of Antonini et al. (2020), participants perceived themselves at greater risk for COVID-19 and poor outcomes if the virus was contracted. Although some healthcare appointments were delayed, all but elective procedures had been completed either face-to-face or virtually. Unlike Antonini et al. (2020), none of our participants' levodopa doses had been changed since the pandemic onset.

Adaptations to usual face-to-face activities were described. Participants were intentional about connecting with friends and family and participated in activities using social distancing. Zoom was appreciated for bringing participants together with family as well as online classes and national speakers. However, limitations of online programming were recognized including the inability to socialize one-on-one during online classes, lack of touch, and camaraderie. Pre-COVID several of the participants attended Rock Steady Boxing where they used equipment such as heavy and speed bags, BOSU® balance trainers and weights, which were absent in the online environment. The use of specialized exercise equipment promotes optimal physical outcomes and its absence might explain participants' worsening PD symptoms. Confidentiality, knowledge, and resistance to online classes were cited as possible reasons for reduced online compared with faceto-face attendance. One participant appreciated online programs because the need to drive on busy highways was eliminated while another suggested that having to leave home to attend face-to-face classes had therapeutic benefits.

Stress caused physical and psycho-emotional responses as well as cognitive symptoms. Physical responses to stress specific to their PD symptoms included slow movement, tingling, dyskinesia, worsening tremors, and freezing. Anxiety, grouchiness, depression, withdrawal, and anger were psychoemotional responses identified. Participants coped with stress in Hermanns & Mastel-Smith

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various ways, such as exercise, meditation, talking to someone, maintaining a positive attitude, not letting things bother them, being grateful, and looking to others for inspiration. Specific to the pandemic, participants stayed informed, positive, and participated in self-talk.

Limitations

Findings should be considered in light of limitations. This was a small homogeneous sample. All were white, educated individuals, recruited from two service organizations in Texas, and unaware of their PD staging. At the same time, everyone with PD experiences different symptoms and stress responses creating heterogeneity. Given the global nature of previous literature, describing the pandemic's effect on people with PD, we expect that experiences will vary based on the duration of lockdown restrictions, cultural and contextual factors. For these reasons, the findings are not generalizable. Researcher bias is a limitation when doing phenomenology; however, investigators focused on the essential meaning of individual codes and discussed categories and themes extensively. While the literature is evolving, many of the research studies had small sample sizes limiting the science and understanding of this novel virus in the PD population.

Implications for Practice, Research, and Education

The long-term consequences of the COVID-19 pandemic on people with PD are yet to be determined. All healthcare providers should be educated regarding the physical and mental health effects of the pandemic on people with PD. Specifically, education should address how restrictions cause social isolation and lack of activity engagement which in turn worsens PD symptoms, depression and anxiety. Based on current findings, providers should assess changes in PD symptoms, explore symptoms of depression, anxiety, and cognition, and stress the importance of regular exercise to prevent worsening of PD symptoms. Coping mechanisms should be discussed and healthy alternatives explored. If patients are isolated or coping ineffectively, providers should refer them to hotlines or service organizations that offer online support and activities. Telehealth is a viable opportunity for this vulnerable population. Service providers should make every effort to train and engage people with PD in online activities. Opportunities for online socialization, outside formal classes, should be offered. Support groups and health care professionals should inform participants that stress related to the pandemic has the potential to exacerbate Parkinson's as well as anxiety, depression, and cognitive symptoms and share strategies to manage those emotional responses. Nurses should consider directly asking people with PD, "are you feeling depressed?" and "are you feeling anxious?" Further, health care providers should be alert to the potential changes in cognition brought on by the emotional response to a pandemic and be proactive in assessing as patients may not recognize the impact that it can have on their PD symptoms. Nurses and other health care professionals might recommend that patients join the Facebook group Parkinson's *International Never Give Up* to gain social support and connect with other people with PD. Appropriate referral to a mental health nurse practitioner, psychiatrist, psychologist, and PD groups is recommended.

A longitudinal study might provide insight into the pandemic's long-term effects on people with PD. Fluctuations in motor and non-motor symptoms, mental health outcomes, coping mechanisms, and medication adjustments would provide insight into care and services needed as well as the long-term effects. Lastly, because the virus is relatively new, a little over a year, more research needs to be conducted as many unknowns remain.

Conclusion

This study examined the lived experience of persons with PD during the COVID-19 pandemic. Stress exacerbates PD symptoms. The pandemic and lifestyle restrictions were perceived as stressful causing worsening PD, depression, anxiety, and cognitive symptoms. Based on the findings of this study, a holistic assessment, including physical, emotional, cognitive, and social domains should be conducted during routine visits with people with PD. Assessments must explicitly cover their emotional responses, e.g., depression and anxiety related to the pandemic. Further, cognition should also be assessed. Health care providers may consider asking the patient about their perception of their thinking during these times. Given the interplay between PD symptoms and the psychosocial impact of the pandemic, assessments require sufficient time and direct questioning to fully understand the patient's health and well-being. Inquiring about the daily activities for patients with PD will guide the plan of care for online activity, exercise, and social engagement recommendations during the pandemic.

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Appendix A

Interview Questions

- Tell me what it is like to live with Parkinson's Disease during this COVID-19 pandemic.
- How has the pandemic affected you? And, it can be in any way.
- How has the pandemic affected your health?
- What has been your biggest challenge/struggle? Please be specific.
- What have you not been able to do that you would be able to do if COVID-19 did not occur?
- Have you delayed any health care appointments due to COVID-19? If so, please elaborate.
- Parkinson's Disease is different for everyone can you please describe how you typically react to stress/ stressors? How do you deal with stress/stressors?

Probes: Tell me more... Can you elaborate? Can you be more specific? Can you give me example...?

ORIGINAL RESEARCH

A Scoping Review of Aromatherapy Evidence for Test Anxiety in Nursing Education

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Abstract

Background: Aromatherapy is a holistic intervention that is purported to relax or stimulate cognitive performance in nursing students and improve sleep disturbances depending upon the essential oil and the method of delivery. Test anxiety is a prevalent educational issue for nursing students that can lead to poor outcomes during the course of their nursing education. Test anxiety can have adverse consequences for students such as poor performance, failure, and attrition in the nursing program. Objective: The aims of this scoping review were to identify, summarize, and synthesize aromatherapeutic evidence implemented and evaluated in nursing education to decrease anxiety and test anxiety and improve test taking and sleep among nursing students. It also aims to propose methodologies that best utilize aromatherapy in nursing education. *Methodology:* A scoping review of the research evidence was done using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (2021). Results: Nine studies (2008-2019) were identified from the United States, the Philippines, and Turkey. The majority of designs were reported as RCTs (random control trials), with small non-diverse samples reported. Lavender, rosemary and lemon oil were administered via inhalation and hand massage methods. Anxiety and test anxiety were evaluated using scales (Cognitive Test Anxiety, Westside Test Anxiety Scale, State Trait Anxiety Inventory) and vital sign data. Test anxiety decreased with aromatherapy hand massage, and lavender and rosemary scents. Pulse rate decreased while blood pressure was non-significant. Studies did not use sleep disturbances as a variable. Conclusions and Recommendations: Various essential oils and delivery methods were used to mitigate anxiety and test anxiety among nursing students; however, there is limited data available to understand the design, chemistry and concentration of the essential oils used in the studies. There should be comprehensive reports of the design and evidence for use in nursing education.

Keywords: Aromatherapy, Nursing education, Nursing students, Anxiety, Test Anxiety, Sleep disturbances

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A Scoping Review of Aromatherapy Evidence for Test Anxiety in Nursing Education

Background

Anxiety, particularly test anxiety, is a common problem and health issue among nursing students. This subjective experience places nursing students at great risk for difficulty concentrating, decreased attention span, and misinterpretations of information; circumstances that can lead to inhibiting learning and poor educational performance outcomes. Test taking is a demanding high stakes event in nursing programs worldwide with strict progression policies (Dawood et al., 2016; Quinn & Peters, 2017; Spurlock, 2013). Pressure on undergraduate students to succeed will become even more intense in the next two years in the United States, when in 2023, the National Council Licensing Examination (NCLEX) will introduce a new passing standard (80% in non-technical language). Aromatherapy is the therapeutic use of essential oils from plants for the enhancement of physical, emotional, and spiritual wellbeing. Aromatherapy is often used by students outside of the educational or clinical environment. Aromatherapy is a possible intervention that can be used in nursing education to decrease student anxiety.

Aromatherapy

Treatment for test anxiety includes counseling, desensitization therapy, relaxation, and aromatherapy. Aromatherapy, with its focus on the therapeutic use of plant oils, has the ability to decrease anxiety in humans through the use of natural oils, particularly Lavandula angustifolia (lavender) without the potential for adverse reactions or side effects of conventional anxiolytic drugs (Greenberg & Narain, 2017). Aromatherapy is administered through cutaneous (e.g., massage), oral (e.g., pill or tea), or nasal (e.g., electronic diffuser, nasal inhaler, and cotton balls infused with oil placed near the head while sleeping or resting) routes. Essential oil is produced by steam-distillation of the flowering heads and leaves of the plant or in the case of most citrus by cold pressing the rinds. This review is limited to lavender, rosemary, and citrus (orange, lemon, lime, and grapefruit) essential oils.

Anxiety, Test Anxiety and Sleep Disturbance

Anxiety is considered a normal feeling, but in moderation. Anxiety can range from mild to panic levels and at a high level, students can experience detrimental effects. Test anxiety is a type of state anxiety, experienced as concern or fear before, during, or following a test or performance assessment (Farner et al., 2019). Test anxiety in nursing students negatively affects test scores, sleep quality, and overall academic success (Gibson, 2014). Anxiety over academic performance can lead to inadequate sleep and sometimes insomnia. Insomnia is difficulty falling asleep or staying asleep, waking up too early, experiencing low energy and difficulty concentrating, and suffering from irritability.

Measures of Anxiety, Test Anxiety, and Sleep Quality

The high incidence of test anxiety across disciplines has required the development of tools to measure this type of anxiety. The Test Anxiety Inventory (TAI) (Spielberger, 1980) is a 20-item Likert scale and the most widely used. The TAI is sensitive to worry, the cognitive concern about consequences of failure. Worry impairs performance and emotionality or psychological arousal evoked by evaluative stress. This can lead to impaired performance. The State-Trait Anxiety Inventory (STAI) measures anxiety among adults. It differentiates between temporary episodic anxiety or state anxiety and the long-standing quality of trait anxiety using a scale consisting of two sets of twenty items (Spielberger et al., 1983). The Westside Test Anxiety Scale (WTAS) is a brief, ten-item instrument designed to identify students with anxiety impairments who could benefit from an anxiety-reduction intervention (Driscoll, 2007). The Cognitive Test Anxiety Scale (Cassaday & Johnson, 2002) is a 40-item scale focusing solely on cognitive anxiety, not emotionality or procrastination. The Stroop Test (SCWT) is a neuropsychological test used to evaluate the ability to inhibit cognitive interference that occurs when processing a specific stimulus feature that impedes the simultaneous processing of a second stimulus attribute (Scarpina et al., 2017). The visual analogue scale (VAS) consists of a line with verbal anchors on each end, i.e., "no anxiety on the far left" and "the most anxiety imaginable" on the far right. The subject places a mark corresponding to their anxiety rating (Hornblow & Kidson, 1976). Pulse is the number of heart beats in one minute. Blood pressure measures the force of blood against the arteries as it circulates throughout the body. With stress, the body releases the hormones cortisol and adrenaline that can make the heart beat faster and the blood pressure rise (Olpin & Hesson, 2021). The Pittsburgh Sleep Quality Index (PSQI) is a questionnaire used to assess sleep quality. It is a 19-item self-reported questionnaire that evaluates sleep quality over the past month. The test yields seven sleep components related to sleep routines, including period of sleep, sleep disruption, sleep latency, habitual sleep efficiency, use of sleep medicine, daytime dysfunction due to sleepiness, and overall sleep quality (Buysse et al., 1989).

It is uncertain what kind of evidence is available in the literature about aromatherapy and its mitigating effects on anxiety, test anxiety, and sleep in nursing students. For these reasons, the authors determined that a scoping review was in order to systematically map the research done in this area and to identify any existing gaps in the literature.

The Review

Study Design

This review used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Tricco et al., 2021). The research question that guided this review was, "What is the research evidence and recommendations on aromatherapy for use in nursing education in performance testing for nursing students?" The following steps were used to conduct the search: identify the research questions; identify relevant studies; select studies; organize the data; synthesize the results (Figure 1).

Figure 1

PRISMA Search Strategy Flow Chart*



To be included in the review, papers needed to focus on aromatherapy as the sole intervention to mitigate test anxiety or performance examination anxiety, and/or sleep quality and disturbances in nursing students. Peer-reviewed reports were included if they were: published between January 1, 2000 - April 30, 2021, involved nursing students 18 years old or higher, and described a measure for test anxiety or sleep. Quantitative cohort studies written in English and in full text format were included. Databases used to identify potentially relevant documents included PubMed, CINAHL, EBSCO, and EMBASE. The search for grey literature included ProQuest Dissertations, Theses, and Google Scholar. The search terms and strategies were drafted by the authors and an experienced reference librarian. The final search results were exported into a Word table, duplicates removed, and abstracts reviewed by the two authors. The authors screened the same publications (Table 1 and Table 2).

*Page, M., McKenzie, J., Bossuyt, P., Boutron, I., Hoffmann, T., Mulrow, C., Shamseer, L., Tetzlaff, J., Akl, E., Brennan, S., Chou, R., Glanville, J., Grimshaw, J., Hróbjartsson, A., Lalu, M., Li, T., Loder, E., Mayo-Wilson, E., McDonald, S. ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, *372*(71). doi:10.1136/bmj.n71

Table 1

Search Terms

Nursing Students	Aromatherapy	Anxiety and Test Anxiety	Sleep Disturbances
"nursing students"	(Aromatherapy) OR Volatile oils	"test anxiety scale"[MeSH Terms] OR ("test"[All Fields] AND "anxiety"[All Fields] AND "scale"[All Fields]) OR "test anxiety scale"[All Fields] ("anxiety"[MeSH Terms] OR "anxiety"[All Fields]) AND ("weights and measures"[MeSH Terms] OR ("weights"[All Fields] AND "measures"[All Fields]) OR "weights and measures"[All Fields]) OR "weights and measures"[All Fields]) OR	Pittsburgh[All Fields] AND ("sleep"[MeSH Terms] OR "sleep"[All Fields]) AND quality[All Fields] AND ("abstracting and indexing as topic"[MeSH Terms] OR ("abstracting"[All Fields] AND "indexing"[All Fields] AND "topic"[All Fields]) OR "abstracting and indexing as topic"[All Fields] OR "index"[All Fields])
"Nursing education" OR Nursing education undergraduate OR Nursing education graduate	((Lavender) OR Lavender oil) OR lavender essential oil ("lavandula"[MeSH Terms] OR "lavandula"[All Fields] OR "lavender"[All Fields]) AND ("oils, volatile"[MeSH Terms] OR ("oils"[All Fields] AND "volatile"[All Fields]) OR "volatile oils"[All Fields] OR ("essential"[All Fields] AND "oil"[All Fields]) OR "essential oil"[All Fields])		

((Lemon) OR Len essential oil	ion oil) OR lemon
Rosemary [All Fie ("oils, volatile"[M OR ("oils"[All Fie "volatile"[All Fiel oils"[All Fields] C Fields] AND "oil" "essential oil"[All	elds] AND feSH Terms] elds] AND ds]) OR "volatile OR ("essential"[All [All Fields]) OR Fields])
Orange AND <i>Citr</i> L. var. <i>amara</i>	us aurantium

Lime AND Citrus aurantifolia

Table 2

Inclusion and Exclusion Criteria

Inclusion	Exclusion
Nursing students over the age of 18	
Peer reviewed manuscripts	Abstracts only
English language	Published in non- English language
RCT, cohort studies	Qualitative studies; systematic or literature reviews; study protocols; conference abstracts; unpublished dissertations or commentaries
Anxiety, Test Anxiety and Sleep Measurement tools	Measurement tool development studies

Table 3

Summary of Studies Included in the Review

Search Outcomes

An initial scan of the title and abstracts produced large numbers of irrelevant studies particularly those related to patients and other student populations. The search of the databases yielded 154 potentially relevant articles. There were 12 duplicates which were removed. Of these, 27 full text versions of the articles were obtained. Each article was reviewed by the two team members. Of the 27 full text articles located, 18 were eliminated from the review since they were in non-English (Korean, Portuguese, and Arabic) languages and one study was excluded since it utilizes aromatherapy in nursing students in conjunction with music therapy, which is not a modality considered in this review (Son et al., 2019). Nine of the articles met the full inclusion criteria. The final analysis included articles from the Philippines (n=1), Turkey (n=3), and the United States (n= 5) (Table 3).

Title, Year, Authors, Country	Design	Purpose	Data collection Instruments	Sample and Intervention	Results
Effect of Inhaled Lemon Essential Oil on Cognitive Test Anxiety Among Nursing Students (2019) Johnson, C. E.	RCT - pretest– posttest	To assess the effect of aromatherapy (Citrus limon [lemon] essential oil) on cognitive test anxiety among nursing students.	Student demographic information (age and gander) Cognitive Test Anxiety Survey (CTAS) scores were measured pre- and	39, nursing students (unspecified year), randomized into two groups, control and experimental.	Neither the control nor the experimental group demonstrated a statistically significant change in the CTAS score from pretest to posttest (p= 0.19).
United States			postintervention.		

Greenberg & Bard Volume 1, Issue 2			Journal of the American Nurses Association - New York			
Aromatherapy Hand Massage for Test Anxiety and Self-Efficacy in Nursing Students: A Pilot Study (2019) Farner, J, Reed, M., & Bielawski United States	RCT	To determine if aromatherapy hand massage (HM) could improve test anxiety and self- efficacy in nursing students.	Student demographic information (age, gender, language, education, race, marital status, CAM use, allergies). The Westside Test Anxiety Scale (WTAS) was selected to measure participants' pre- and postintervention test anxiety. The General Self- Efficacy Scale (GSES) was chosen to measure pre and post-intervention self-efficacy	14, undergraduate nursing students, from a large urban university in the midwestern United States with a convenience sample of senior-level students enrolled in an accelerated baccalaureate nursing program was selected from a critical care nursing course. Participants were randomized to receive lavender aromatherapy hand massage (AHM), unscented HM, or no intervention (C) 60 minutes before	No significant differences were found, but analysis of the percentage change from the means demonstrated the largest decrease in test anxiety in the AHM group (AHM = -12.4% , HM = -8.63% , C = -1.76%). Self-efficacy trends followed a similar pattern (AHM = 5.93% , HM = -3.03% , C = 0.52%).	
Effects of Aroma Inhalation on Anxiety and Vital Signs of Nursing Students during Their First Blood Drawing Practice (2017) Çevik, K., Ince, S. Ayceman, N. & Ergini, E. Turkey	RCT	Determine effects of orange and lavender oil on anxiety & vital signs before performance of first blood draw on a person.	Student Demographic Information Form Visual Analogue Scale (VAS) State-Trait Anxiety Inventory (STAI) Vital Signs Follow- up Form	72, 1st grade {year} nursing students- equally assigned to control or treatment groups	The results indicate that aroma inhalation did not lead to a difference between the groups in terms of their mean VAS scores (p> 0.05)	

https://ananewyork.nursingnetwork.com/page/95242-summer-2021

Journal of the American Nurses Association - New York

The Effect of Lavender Aromatherapy to Junior Nursing Students' Anxiety, Concentration and Memory Retention (2018) Fernandez, M., Ferrer, M., Flores, K., Florido, A., Foronda, K., & Lazalita, L. Philippines	Quasi- Exp	Determine the effects of Lavender aromatherapy on junior nursing students' anxiety, concentration and memory retention	State-Trait Anxiety Intervention (STAI) Stroop Effect Tool to test concentration Return demonstration assessment tool to test memory retention	55 Junior nursing students enrolled in the first semester of school year 2017- 2018 scheduled for a return demonstration in the nursing lab.	Paired t-test in the 3 measures were significant (p<0.000).
Effectiveness of Aromatherapy in Reducing Test Anxiety Among Nursing Students (2015) Kavurmacı, M., Küçüko-lu, S., & Tan, M. Turkey	RCT	To identify the effectiveness of aromatherapy in decreasing test anxiety levels in nursing students.	Personal demographic information (age and gender) State-Trait Anxiety Inventory (STAI)	91, 2nd year nursing students at Faculty of Health Sciences, Ataturk University, during the 2013- 2014 academic years assigned to experimental or control groups 15 minutes prior to an exam.	No statistically significant difference was found between mean final exam scores of the students in the experimental group (66.90 ± 10.65) and the mean final exam scores of the students in the control group (66.51 ± 11.31) (p>0.05) State-Trait Anxiety Inventory mean scores of the students in the experimental group (39.45 ± 3.88) was lower than the mean scores of the students in the control group (41.44 ± 4.69), and the difference between the groups was statistically significant (p<0.05)
Effect of Aromatherapy on Cognitive Test Anxiety Among Nursing Students (2014) Johnson, C. E. United States	RCT, pre-test- post test	To assess the effect of aromatherapy (Citrus limon [lemon] essential oil) on cognitive test anxiety among nursing students,	Cognitive Test Anxiety Survey (CTAS)	39, Sophomore nursing students: control group in classroom without aromatherapy and intervention group in a classroom with citrus lemon essential oil	There were no significant differences between the control and study groups in relation to preintervention cognitive anxiety scores (mean [μ] = 78.17 and μ = 73.62), respectively. In the control group, there was a 3-point decrease in cognitive test anxiety scores between pretest and post-test. However, there was a significant decrease in cognitive test anxiety scores in the students who received aromatherapy, compared to those who did not (p= 0.10). Age and gender were not moderating variables in this study.

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The effects of Lavender and Rosemary Essential Oils on Test-Taking Anxiety Among Graduate Nursing Students (2009) McCaffrey. R., Thomas, D. J. & Kinzelman, A. United States	RCT	This study evaluated the ability of aromatherapy to reduce test- taking stress and anxiety during nursing school examinations.	Test Anxiety Scale (TAS) Vital signs (blood pressure and pulse) Focus group discussions	40 graduate nursing students in their final year of their FNP program prior to 3 exams.	There was no significant difference between pre- and posttest mean scores on test 1 where no aromatherapy was used. A significant difference between pre- and posttest means was noted during test 2 when lavender essential oil was used ($t = 3.45$, p = .003). A significant difference was also noted between means of pre- and posttests on test 3 where rosemary essential oil was used ($t = 2.01$, p = 0.01). There was a significant decrease in test anxiety as evidenced by scores on the Test Anxiety Measure on posttest measures for both test 2 (lavender) and test 3 (rosemary).	
Using Aromatherapy to Reduce Nursing Students Stress: a Pilot Study (2008) McCaffrey R. United States	RCT	To examine the ability of lavender and rosemary, used as aromatherapy, to reduce test-taking anxiety and stress.	Perceived Stress Scale (PSS) Vital signs (blood pressure and pulse) Focus group discussions	34, graduate nursing students in their last clinical course of their FNP program prior to 3 exams.	Paired <i>t</i> tests: Showed no significance with blood pressure measurements pre-or-posttest. Showed significant difference in pulse measurement; pulse was lower on post-test than pre-test. Showed no difference in PSS results for exam 1, but showed significant differences for exam 2 using lavender and exam 3 using rosemary. Focus group data indicated students preferred using rosemary and felt it was effective, whereas Lavender relaxed them too much and felt it negatively hindered their focus during the exam.	
Effects of Aroma Inhalation on Examination Anxiety (2008) Kutlu A.K., Yilmaz E., & Çeçen, D. Turkey	RCT	To determine the effect of aromatherapy on test anxiety.	State-Trait Anxiety Intervention (STAI) Blood pressure Pulse Sociodemographic questionnaire (student department, nursing/ midwifery/ health official), gender, age, education, place of residence (with family, alone, in hostel), and working vs not working.	50 students in study group and 45 students in control group. All students were from departments of nursing, midwifery, and health official at Manisa Health Science College, Celal Bayar University. The study was carried out in the surgical diseases examination.	The mean anxiety score of the study group (42.76 ± 12.48) was lower than that of the control group (51.51 ± 12.21), and the difference between the groups was statistically significant (p = 0.002). This study shows that aroma inhalation decreases examination anxiety.	

Results

The number of publications included in this review indicates research on aromatherapy for nursing students with test anxiety is limited. To examine the included research studies, these are organized in categories such as study population (specifically nursing students), the performance/testing conditions, the essential oil intervention used, and the anxiety and test anxiety and sleep measures.

Study Population

The samples of nursing students included undergraduate and graduate students enrolled in traditional 4 year and accelerated baccalaureate and advanced practice nursing programs, at various stages in the curricula - beginning, second year and final semester. Public and private institutions in three countries, the United States, the Philippines and Turkey were represented. Kutlu (2008) did not report data on the students' placement in the curriculum. The sampling technique used was convenience, with sample numbers that ranged from a low of 14 to a high of 91 subjects. The samples were predominantly composed of Caucasian, females and ranged in age from 18 - 55 years of age. Ethnicity was omitted in the reports of six studies (Cevik et al., 2017; Fernandez et al., 2018; Johnson, 2014; Kavurmaci et al., 2014; Kutlu et al., 2008; McCaffrey, 2008; McCaffrey et al., 2009) while age was omitted in three studies (Fernandez et al., 2018; McCaffrey, 2008; McCaffrey et al., 2009). Fernandez et al. (2018) gave no report of gender. These studies focused on nursing students as the sample, but did not report complete demographic data that might affect study design, results, and implications. None of the studies examined associate degree students in their sample.

Performance and Testing Conditions

Testing conditions included written classroom examinations (Johnson, 2014; Johnson, 2019; McCaffrey 2008; McCaffrey et al., 2009), laboratory skill performance, such as return demonstration (Fernandez et al., 2018), and venous blood draws on human subjects (Çevik et al., 2017). Various performance conditions were used to test aromatherapy effects on anxiety and test anxiety. The range of performance conditions were important for nursing education since they can be helpful in pinpointing triggers to test anxiety that faculty may not be sensitive to.

Essential Oil Interventions

The essential oils used in the studies were lavender, rosemary and lemon. Three of the nine studies reported the manufacturer and country of origin of the oil. The most commonly used essential oil delivery methods were nasal inhalation using a handheld personal inhaler (Johnson, 2019; McCaffrey, 2008; McCaffrey et al., 2009) and whole room environmental mechanical diffusers (Cevik et al., 2017; Fernandez et al., 2018; Johnson, 2014). Oil impregnated cotton cloths placed 15-20 cm from the nose (Kavurmaci et al., 2014), incense placed around a classroom (Kutlu et al., 2008) and aromatherapy hand massage (Farner et al., 2019) were each used once. The essential oil treatment began prior to beginning the exam (McCaffrey et al., 2009), 15 minutes before the exam (Johnson, 2014; Kavurmaci et al., 2014; Kutlu et al., 2008), 30 minutes prior (Fernandez et al., 2018), within 60 minutes of the exam (Farner et al., 2019) and during the exam (Cevik et al., 2017; Johnson 2019; McCaffrey et al., 2009). The amount of essential oil used in the personal inhalers varied from 3 – 9 drops. Dilution of the essential oil (EO) in 50 - 100 ml. of water in mechanical diffusers was reported in two studies but concentration properties were not discussed in the reports. Six of the nine studies screened the participants for allergies and respiratory issues such as asthma pre-intervention. Sensitivity to essential oils is a known side effect of aromatherapy and it is common to see fragrance free policies in place in health care agencies and other workplaces. McCaffrey (2008) and McCaffrey et al. (2009) reported information from focus groups post intervention regarding the lavender and rosemary aromas and their effect on test taking. The subjects reported that lavender was alternately too relaxing or caused them agitation as they were fighting to stay alert. On the other hand, rosemary cleared their heads and provided clarity of thought.

Sleep, Anxiety, Test Anxiety Measures

None of the located evidence explored sleep quality and sleep disturbance. Two of the studies used the Test Anxiety Scale (TAS) (McCaffrey 2008; McCaffrey et al., 2009), four used the State Trait Anxiety Inventory (STAI) (Cevik et al., 2017; Fernandez et al., 2018; Kavurmaci et al., 2014; Kutlu et al., 2008), and two used the Cognitive Test Anxiety Scale (CTAS) (Johnson 2014; Johnson 2019). The Westside Test Anxiety Inventory (WTAS) and the General Self Efficacy Scale (GSES) was used once (Farner et al., 2019), as was the Stroop Effect assessment tool (Fernandez et al., 2018). These measures of anxiety and test anxiety are traditionally used to assess the study variables and have been found to be valid and reliable for use in the study populations (Farner, 2019; Johnson, 2014; McCaffrey et al., 2009). Three studies measured vital signs - blood pressure and pulse (Kutlu et al., 2008; McCaffrey 2008; McCaffrey et al., 2009). Kutlu et al. (2008) measured anxiety using a Visual Analogue Scale (VAS). Measurement of vital signs and use of a VAS are common measures of anxiety and stress and are suggested tools that are low cost and simply measured. Pulse was more sensitive to change than blood pressure in the studies that measured vital signs but the location of the pulse was only discussed by Cevik et al. (2017). Only five studies reported significant effects on test anxiety from aromatherapy. Kutlu, Yilmaz, and Çeçen (2008) found that the mean anxiety score of the study group (42.76 ± 12.48) was lower than that of the control group (51.51 ± 12.21) , and the difference between the groups was statistically significant (p = 0.002). McCaffrey et al. (2009) found that there was a significant decrease in test anxiety as evidenced by scores on the Test Anxiety Measure on posttest measures for both test 2 (lavender) (t = 3.45, p = 0.003) and on test 3 (rosemary) (t = 2.01, p = 0.01). Johnson (2014) reported a significant decrease in cognitive test anxiety scores among students who received aromatherapy compared to those who did not (p=0.10). Kavurmacı et al. (2015) found that State-Trait Anxiety Inventory mean scores of students in the experimental group (39.45±3.88) was lower than the mean scores of students in the control group (41.44±4.69), and the difference between the groups was statistically significant (p<0.05). Fernandez et al. (2018) found that paired t-test in the 3 measures were significant (p<0.000).

Discussion

The purpose of this scoping review was to identify, summarize, and synthesize current evidence relevant to aromatherapy use in nursing education for nursing students to help reduce test and performance anxiety, and improve sleep quality. This review included studies that presented interventions used by nurse educators to manage performance and testing anxiety.

Evidence on aromatherapy in nursing education is characterized by predominately small samples with methodology and reporting that is incomplete. None of the studies in this review presented a complete picture of their methodology in the full text report to the extent that another researcher could replicate their study.

Only three of the studies reported information on the manufacturer and country of origin of the oil used in the study. The manufacture and extraction methodology used to obtain essential oils are not standardized between manufacturers or countries, thus the purity and safety of the resulting oil can be suspect. Commercially available oils may be adulterated. Product integrity verification of the essential oils through Gas Chromatography/Mass Spectrometry (GC/MS) analysis identifies all of the constituents within a specific essential oil and the percentage of each constituent. If the information is not provided, it may cast doubt on the results (Lillehei et al., 2015). Essential oil is produced by steam distillation of the flowering heads and leaves of the plant; or in the case of most citrus, by cold pressing the rinds. Many essential oils are manufactured with a solvent that can produce allergic or sensitivity reactions (Buckle, 2016). Three studies did not report pre-screening the subjects for allergy or sensitivity to the essential oils during the informed consent process and prior to the intervention (Farner et al., 2019; McCaffrey, 2008; McCaffrey et al., 2009). This may be a failure to report rather than a failure to address potential health issues. Nonetheless, it is an apparent gap in practice and research procedures.

It is important to know the botanical name of a plant since the common name can include different species that have different chemistry and actions. For example, one lavender is soothing and calming (Lavandula angustifolia) while another is stimulating (Lavandula lactifolia). Lavandula is a native plant ranging from Southern Europe to the Mediterranean Sea with upward of 30 species, subspecies, and hybrids. Lavender's main components are 1,8-cineole B-ocimene, camphor, linalool, linalyl acetate, and terpinen-4-ol (Koulivand et al, 2013). Lavender's core constitutes linalyl acetate and linalool, and whole lavender essential oil is used in aromatherapy or inhalation (Setzer, 2009). Historically, lavender is believed to be relaxing, and utilized for its anxiolytic and calming effects. Several studies were conducted on lavender essential oil effect and mechanism of action on the human neuronal tissues and it is suggested that inhaled lavender oil affects the limbic system (amygdala and hippocampus) (Koulivan et al., 2013). Lavandula angustifolia essential oil is a demonstrated anxiolytic that improves sleep and reduces anxiety in animals and humans, without the potential for adverse reactions or side effects of conventional hypnotics and anxiolytics (Park & Lee, 2004; Son et al., 2019). Only three studies in this review reported the botanical names of the plant used to make the essential oil (Cevik et al., 2017; Johnson, 2014; Johnson, 2019).

Three studies used rosemary oil in the intervention. Rosmarinus officinalis L. is classified as a small, perennial shrub, part of the mint family (Sayorwan et al., 2013). Rosemary essential oil compounds include linalool and flavonoids (genkwanin, luteolin, and antiprostaglandin). Neurotransmitters, such as enkephalin and endorphins, are secreted by these components which cause sedative effects and therefore reduce anxiety and stress (Fayazi et al., 2011). Historically, rosemary has been credited to enhance memory strength. Research has determined it has antiinflammatory and antimicrobial properties, which are useful in decreasing cortisol and providing protection from oxidative stress (Atsumi & Tonosaki, 2007). It may also assist in test-taking anxiety through a sense of clarity, increased focus, and improved memory function. These main ethno-pharmacological uses of rosemary have been validated by neuro- pharmacological studies (Rahbardar & Hosseinzadeh, 2020).

Orange, lemon, lime and grapefruit extracts are under the citrus umbrella. The most commonly used citrus oil in aromatherapy is Citrus aurantium L. var. amara or neroli oil. It has similar effects on cognition just like rosemary. Orange oil was used by Cevik et al. (2017) with no apparent significant effect on anxiety. Johnson (2014; 2019) used lemon oil in her two intervention studies. Lemon oil (Citrus lemon) D-limoneneis is regarded as energizing and uplifting as reported by one study that showed subject's norepinephrine levels elevated, endocrine system stimulated and mood improved (Kiecolt-Glaser et al., 2007). Inhaling lemon essential oil (EO) causes anti-stress effects through modulating the 5-HT and dopamine (DA) activities in mice. Lemon EO also induced significant changes in neuronal circuits involved in anxiety and pain in rats after prolonged exposure (for 2 weeks), improved creativity and mood, and thought to have affected heart rhythm (Campêlo et al., 2011; Ceccarelli et al., 2004; Komiya et al., 2006; Ogeturk et al., 2010). Lime, Citrus aurantifolia, is used for its energizing aroma due to and Pinene and d-Limonene Linalool, which are known to increase mental alertness and cognitive function (Dososky & Setzer, 2018). Grapefruit, Citrus paradisis, energizes primarily via +/- Limonene and is recognized as a mood booster and stress relief providing an anxiolytic effect. None of the studies reported in this review used lime or grapefruit oils; both scents may be productive areas for future research. Generally, citrus essential oils are non-toxic, non-mutagenic, and are not hazardous in pregnancy (Dosoky & Setzer, 2018; Tisserand & Young, 2014)

There is a lack of robust statistically significant evidence from the review. Areas for future research in nursing education include studies with larger sample sizes and studies that include greater diversity in the student sample. Researchers should consider collaborative multi-site designs. Larger studies and those with inclusion of ethnic minorities are needed to improve the generalizability and validity of research outcomes. Greater diversity can address the cultural nuances surrounding scents. For example, lavender scent is associated with death in some cultures and age groups since lavender oil was historically used in embalming (Micozzi, 2018; Olpin & Hesson, 2019).

Future studies could address the appropriateness of the oil used for the intervention. Is lavender sufficient for an anxiolytic effect? Alternatively, is lemon oil conducive to clarity and improved memory? What is the titration or dosage of the essential oil administered? How many drops of the oil are sufficient for an anxiolytic or clarity effect? What is the efficacy of a nasal inhaler versus a sachet or a room diffuser? Research may also address the most efficacious delivery method. Lastly, studies should address the less studied citrus essential oils (lime, grapefruit, orange) since their chemical components are thought to be mood elevating, energizing, and invigorating and have potential beneficial effects on cognitive function.

Limitations

Study findings should be considered in the context of limitations, which inform future research directions. There is minimal published literature between 2000 and April 2021 on the use of aromatherapy within the nursing student population, particularly investigating the relationship between nursing students and test-taking anxiety. Thus, it was challenging to find current literature using relevant Medical Subject Heading (MeSH) terms. Accessing articles on this topic, including studies written in all other languages outside of English, and those that are mixed methods may increase the breadth of evidence located.

Conclusion

High stakes testing will likely increase for undergraduate students by 2023 in the United States as the licensing exam will be changing. and will test the candidates' clinical judgement and critical thinking in new ways. The change in the licensing testing will likely increase students' pre-existing anxiety. This review is useful in improving the general knowledge of the different, but positive effects that lavender, rosemary and citrus oils have on anxiety and test anxiety and cognitive test anxiety in nursing students. Although studies demonstrate that lavender, rosemary, and lemon essential oils have significant and effective alternative therapy with anxiolytic or cognitive improvement effects, there is minimal research conducted in this area. This may be due to the general methodological limitations in studying (inhalation) lavender therapy; including small sample sizes, differences or lack of research regarding proper dosage, short-term duration of lavender use, and variability in administration methods.

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ORIGINAL RESEARCH

Analysis of Intergenerational Programs Among Alzheimer's Dementia Patients

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Abstract

Purpose: The purpose of this review is to synthesize evidence regarding the implementation of intergenerational programs with a specific emphasis on toddler age groups of children and their direct interaction and outcomes measurement with individuals residing in long term care facilities with progressive advancing dementia. **Methods:** Articles chosen for this review were examined for the effects of intergenerational therapy programs for elderly patients with dementia and children from infancy up until kindergarten. Eligibility criteria included research published in the English language, between 1980 to the present, nursing home-based elderly population, and children up to five years of age. **Results:** Positive themes included improved cognition, relationships, and positive affect. Gratification, improved cognitive functioning and relationships, and overall improvement in psychosocial status were also identified across studies included feelings of fatigue, frustration, and an unwillingness to participate for unidentified reasons. **Conclusion:** Advancing life expectancy predisposes our population for a heightened occurrence of dementia diagnoses, with concerns for both physical and mental illnesses. Continued research in this population to include novel methodologies to prevent many of these fatal comorbidities is critically indicated. Emerging trends appear to be moving away from traditional pharmacotherapeutic measures, with a shift toward safer, most cost-effective cognitive and behavioral approaches. Intergenerational programs could potentially serve as an alternative therapy which could provide improvements on quality of life among our elderly residents with dementia residing in long term care facilities.

Keywords: Intergenerational program, Alzheimer's Dementia, Children, Long-term care

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Analysis of Intergenerational Programs Among Alzheimer's Dementia Patients

Dementia is an insidious disease which results in a progressive decline in cognition among one or more cognitive domains of learning, language, executive functioning, attention, motor, and social cognition (Larson, 2021). Deficits manifest as a noticeable decline in function which inhibits the ability of the individual to carry out activities of daily living safely and independently (American Psychiatric Association, 2013). This loss of function not only becomes detrimental to the affected individual, but to caregivers and family members directly and indirectly involved in their care and management. As a result of functional and emotional loss, social isolation may ensue, resulting in further cognitive impairments (Galbraith et al., 2015).

The rapid prevalence of this disease is also concerning. About 6.8 million Americans have been diagnosed with Alzheimer's, with this number projected to double by 2050 (Alzheimer's Association, 2021). Since the COVID-19 pandemic, this disease has increased at an alarming rate by 16%, costing roughly \$355 billion in medical expenditures (Alzheimer's Association, 2021). Opportunities for improvement among this population include alleviation of stigmatization, polypharmacy, inappropriate segregation, and exclusion from many activities of society, which may help to improve socialization and meaningful relationships among others (McNair & Moore, 2010).

Modern medicine has advanced the life expectancy of older individuals, widening the gap of disconnect between the elderly and younger generation (Lin et al., 2017). The development of intergenerational programs, defined as combining health promotion programs between these two age groups, allows the younger generation an opportunity to directly interact and socialize with older individuals with childhood educator oversight. On the other hand, older generations can potentially improve their creativity in various ways to promote health and facilitate positive aging perceptions while improving interpersonal relationships (Lin et al., 2017). Intergenerational program research has been shown to remove perceived communication barriers, with the initiative of encouraging a cost-effective strategy to promote safety and improve quality of life among patients with dementia (Lin et al., 2017). Alternatively, toddlers and preschool age children can benefit greatly from these interventions, as thought processes such as positive generalizations can begin during their earliest stages of development (Galbraith et al., 2015).

Few researches has been conducted identifying the effect of intergenerational programs on health outcomes among people with advanced dementia residing in long term care facilities (Black, 2011; David et al., 2011; Low et al., 2015). In 2015, Galbraith et al. performed a scoping review on the use of intergenerational programs and the positive impact that this intervention can have on quality of life and well-being across individuals with dementia. The inclusion criteria included both inpatient and outpatient individuals with dementia, although was not specific to those residing in long term care (Galbraith et al., 2015). This scoping review was also conducted prior to the recent COVID-19 pandemic, with facility-wide changes and newly emerging research interventions requiring more up to date review of the current literature (Galbraith et al., 2015).

The importance of improving health outcomes among this specific population is pertinent for the present and future of today's health care quality measures to improve overall quality of care as well as decrease the costs of unnecessary hospitalizations among those residing in long term care with progressive advancing dementia (Lin et al., 2017). The purpose of this review is to analyze intergenerational programs among individuals residing in the long-term care facility with progressive advancing dementia.

Methods

Eligibility Criteria

Article screening for this literature review was conducted by two authors and a doctoral-prepared professor. Characteristics which were examined included evaluation of intergenerational therapy programs for elderly patients with dementia and children from infancy up until kindergarten. Data collection methods included in-person and telephone interviews, on-site observations, surveys, evaluation forms, debriefs, and video recording analysis. Length of follow up and treatment were not considered for inclusion criteria due to limited number of articles on this specific topic. Articles selected for review included those published in the English language, from year 1980 to present, nursing homebased elderly population, and children up to five years of age. All included studies focused on individuals with a diagnosis of dementia, with the majority of articles focusing on individuals with moderate to severe cases. An electronic search of published articles and grey literature was conducted.

Information Sources/ Databases

The search strategies were organized with the assistance of an experienced healthcare librarian. An online literature search was conducted May 1, 2021. A final count of 12 articles were collected from the following Electronic Databases and hard print: CINAHL, PubMed, Cochrane, Web of Sciences, Psychinfo, Embase, Nuring Reference Center, and ERIC. The following journals were hand searched for relevant articles: *BMC Geriatrics, BMC Family Practice, BMC Neurology, BMC Complementary and Alternative Medicine, BMC Nursing, Cleveland Clinical Journal of Medicine, Neurology: Neuroimmunology and Neuroinflammation, Systematic Reviews, BMC Clinical Pharmacology, and Journal of Gerontological Social Work.*

Search Strategy

Boolean Operators were used for each database throughout the literature search in order for the search process to be repeated. These included: "Alzheimer's Disease" OR "Alzheimer's Dementia" OR "Cognitive Decline" OR "Dementia" OR "Cognitive Impairment" OR "Alzheimer's" AND "Intergenerational Care" OR "Intergenerational Relations" OR "Intergenerational Program" OR "Adult-Child Care" OR "Adult-Child Relations" OR "Adult-Child Programs" OR "Intergenerational Therapy" AND "Long term care" OR "Nursing Home."

Study Selection

Articles were first screened with the use of the above-mentioned Boolean operators. The PRISMA Flow Diagram is shown in Appendix A (Page et al., 2020). Titles and Abstract review excluded duplicates, articles including children greater than kindergartenage, residents without a diagnosis of dementia, or family members as the intervention group, with a total of 14 articles remaining. Full-Text review excluded publications of residents not residing in long-term care and residents diagnosed with dementia, resulting in 12 articles included within this literature review.

Figure 1

PRISMA Flow Diagram



*Page, M., McKenzie, J., Bossuyt, P., Boutron, I. Hoffmann, T., Mulrow, C., Shamseer, L., Tetzlaff, J., Akl, E., Brennan, S., Chou, R., Glanville, J., Grimshaw, J., Hróbjartsson, A., Lalu, M., Li, T., Loder, E., Mayo-Wilson, E., McDonald, S. ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BM*, 372(71). doi:10.1136/bmj.n71

Data Collection Process

Data extraction from reports were collected by an independent peer-review researcher. Risk of bias was assessed using independent peer-review of a second researcher following completion of this literature review for critical comparative analysis and identification of any potential unidentified sources of bias. The search process was replicated with the same number of articles collected from the first review. Once compared, any disagreements were resolved by a third reviewer (doctoral-prepared professor). Melnyk criteria was utilized to assess quality for all identified articles within this review (Mazurek-Melnyk & Fineout-Overholt, 2005). Risk of bias across studies may have been a factor due to many studies not being published with negative or insignificant findings with regards to the intervention application to the specified population.

Results

Study Characteristics Article Publication

Ten (10) articles were initially selected for inclusion within this literature review and synthesis. A majority of the articles were written within the last ten years, 2 additional articles written in 2002 and 2005 were included due to rigor of the study and timeframe of the selected participants. A total count of 12 articles were included in the final review and synthesis.

Intervention Method

All articles included the use of intergenerational care as their method of choice for intervention with this subset of the population, with slight differences in variation between ways of

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encouraging interactions between the young population and the elderly. David et al. (2011) utilized an intergenerational music program, while George and Wagler (2014) created social learning and innovation with intergenerational reading programs. The majority of the other articles discussed non-structured playgroups (Janke et al., 2019; Low et al., 2015; Skropeta et al., 2014), while some articles failed to specify the child-adult interaction playgroup studies (Sloane et al., 2002).

Table 1

Data Matrix for Included Studies

Author	Title	Sample Size	Country	Timeframe	Design	Measurement Tool	Outcome (Elderly)
Black, K. (2011)	Combining the young and the young at heart: innovative, intergenerational programming throughout the continuum of long-term care	Adults: 276 Children: N/A(toddlers)	U.S.A.	30-45mins. daily	Observational	N/A	Positive: Memories, gratification and joy. <u>Negative:</u> Tiring, some prefer to not participate.
David, J., Yeung, M., Vu, John, Got, T. & Mackinnon, C. (2011)	Connecting the young and the young at heart: an intergenerational music program	Adults: 20 Children: N/A (3rd-6th grade)	Canada	6 visits within a 4-week timeframe	Qualitative	Debriefs from LTC staff, music teachers, elderly, students, and program facilitators.	Positive: cognitive function, meaningful relationship psychosocial status.
Galbraith, B., Larkin, H., Moorhouse, A. & Oomen, T. (2015).	Intergenerational programs for persons with dementia: A scoping review	Adults: 27 Children: NA (18 and younger)	Canada	4 weeks	Mixed Methods	N/A	Positive: Purpose, self-esteem, youthfulness, anxiety, positive affect, increased mobility, hand- holding, eye- contact, verbal interaction, agitation. Negative: Distrass during
							Distress during structured activities, less verbal interaction.

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George, D. (2011).	Intergenerational volunteering and quality of life: mixed methods evaluation of a randomized controlled trial involving persons with mild to moderate dementia.	Adults: 15 Children: 16 (5-6yrs.)	U.S.A.	1hr. for 5 months	Mixed Methods, RCT	MMSE, Beck Anxiety Inventory, Beck Depression Inventory, sense of purpose and usefulness (single-item questionnaires)	Positive: Stress levels, sense of purpose, usefulness, relief from "sick role", affectionate physical touch <u>Negative:</u> N/A
George, D. & Wagler, G. (2014).	Social learning and innovation: developing two shared-site intergenerational reading programs in Hershey, Pennsylvania.	Adults: 30 Children: 16	U.S.A.	4 days weekly for one hour	Observational	N/A	Positive: Social interaction, cognitive stimulation, QOL. <u>Negative:</u> N/A
George, D.R., & Whitehouse, P.J. (2010).	Intergenerational volunteering and quality of life for persons with mild-to-moderate dementia: results from a 5-month intervention study in the United States.	Adults: 8 Children: NA (5-14yrs)	U.S.A.	Every other week hour long visits x 1 hour for 5 months.	Mixed Methods	N/A	Positive: Enhanced mood, cognition, purposefulness, usefulness, meaningful relationships. <u>Negative:</u> N/A
Gigliotti, C., Morris, M., Smock, S., Jarrott, S. & Graham, B. (2005).	An intergenerational summer program involving persons with dementia and preschool children.	Adults: 14 Children: 10 (2-10yrs.)	U.S.A.	4 days a week x 10 weeks	Qualitative	Interviews, surveys, and evaluation forms.	Positive: Improved relationships, enhanced sense of self and QOL. <u>Negative:</u> Impatience, frustration.
Janke, M., Purnell, I., Watts, C. & Shores, K. (2019).	Associations between engagement types, outcome behaviors, and quality of life for adults with dementia participating in intergenerational programs.	Adults: 15 Children: (2mo6yrs).	U.S.A.	5 sessions, 25- 75mins. 2xday x 1 week.	Quantitative	Menorah Park Engagement Scale (MPES), Quality of Life in Dementia Scale (QUALID), Brief Interview for Mental Status (BIMS), Patient Health Questionnaire (PHQ9), Spearman's Rho Correlations	Positive: Pleasure, helping behaviors, QOL, productive, purpose, sense of self. <u>Negative:</u> Too frequent participation result in poorer QOL and pleasure.

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Low, L., Russell, F., McDonald, R. & Kauffman, A. (2015).	Grandfriends, an intergenerational program for nursing home residents and preschoolers: a randomized trial	Adults: 40 Children: 21 (4yrs.)	Australia	45mins. Weekly for 12 weeks.	Quantitative, RCT	Menorah Park Engagement Scale (MPES), Cohen- Mansfield Agitation Inventory (CMAI), Brief Sense of Community Scale (BSCS), Long Term Care Quality of Life Scale (LTC-QoL), SPSS.	Positive: Engagement, enjoyment. <u>Negative:</u> Refusal to participate, "children should be home with their mothers".
McNair, B.A., & Moore, K.S. (2010).	The effects of intergenerational programs on individuals with Alzheimer's disease or dementia.	Adults: 27 Children: 12 (Pre-K)	U.S.A.	15mins weekly x 6 weeks	Mixed Methods	Comprehensive Evaluation in recreation Therapy-Psych/ Behavioral (CERT) Scale	Positive: Affect, attitude, relationships, conversation, memory. <u>Negative:</u> N/A
Sloane, P., Zimmerman, S. Gruber- Baldini, A. & Barba, B. (2002).	Plants, animals, and children in long-term care: how common are they? Do they affect clinical outcomes?	Adults:3000 Children: N/A	U.S.A.	Weekly x 1 year	Longitudinal, Mixed Methods	Telephone interviews and one-site observations	<u>Positive:</u> N/A <u>Negative:</u> N/A
Skropeta, C.M., Colvin, A. & Sladen, S. (2014).	An evaluative study of the benefits of participating in intergenerational playgroups in aged care for older people.	Adults: 48 Children: 50 (0-4yrs)	Australia	15-30mins. 6 months	Mixed Methods	SF-36, Geriatric Depression Scale (GDS), interviews, SPSS	Positive: Meaningful engagement, dignity, sense of connectedness and friendships, make connections, enjoyment <u>Negative:</u>

Sample Size

Sample size for adult members with dementia residing in longterm care varied across the studies, from eight to three thousand participants. Participation size for the toddler to kindergartenaged children ranged from ten to fifty.

Intervention Timeframe

The articles also differed in terms of timeframe used in which the intervention was conducted. It varied from 15 minutes daily to one hour; and long term, from 1 week to one-year total across the study length.

Design

The majority of the studies indicated use of a mixed-methods approach (inclusion of both qualitative and quantitative data), although only one article discussed statistically significant results with the use of SPSS Software (MacDonald & Kauffman, 2015). Most outcomes were identified solely from observational data, such as surveys, interviews, and audio recordings.

Country of Origin

Aside from those written in English, all articles published globally were considered for this review. Eight articles included studies in the United States, two in Canada, and two nearby Sydney, Australia.

Positive Outcomes

A majority of the findings from the intergenerational design methods between young children and patients with Alzheimer's dementia appeared to have beneficial outcomes. The three most common themes identified across all studies were improved memory and cognition, relationships, and positive affect.

Feelings of gratification and joy, improved cognitive functioning, meaningful relationships, and overall improvement in psychosocial status were identified by Black (2011) and David et al. (2011). Feelings of purpose, self-esteem, youthfulness, decreased anxiety, positive affect, increased mobility, handholding, eye-contact, verbal interaction, and lowered levels of agitation were also identified (Galbraith et al., 2015). George (2011) also found improvement in stress levels, sense of purpose, usefulness, relief from the "sick role", and more displays of affectionate and physical touch among those who participated within the intergenerational groups within the facility. This was the only study which identified a statistical significance between an intervention used within their study. Their main finding showed that individuals with dementia, once exposed to children, showed a decrease in stress levels by 2.5 points on the Beck Anxiety Inventory (BAI), with a significance level of 0.01, p= < 0.01(George, 2011).

Improved social interaction, cognitive stimulation, improved quality of life indicators (health and personal safety, intellectual development, understanding, creativity, personal expression, and socializing), enhanced mood, purposefulness, usefulness, and meaningful relationships were common themes identified between studies from George and Wagler (2014) and George and Whitehouse (2010). The remaining studies all showed common themes following intergenerational interactions including: improved relationships, sense of self, quality of life, pleasure, productivity, purposeful engagement, enjoyment, positive affect and attitude, conversation, memory, dignity, and sense of connectedness (Gigliotti et al., 2005; Janke et al., 2019; Low et al., 2015; McNair & Moore, 2010; Skropeta et al., 2014). One article identified no positive results following the intervention (Sloane et al., 2002).

Negative outcomes

Although a majority of the adult-child interaction playgroups did elicit positive responses, several studies identified negative outcomes following their intervention (Black, 2011; Galbraith et al., 2015; Gigliotti et al., 2005; Janke et al., 2019; Low et al., 2015; Skropeta et al., 2014). The common themes present across the articles included feelings of fatigue, frustration, and an unwillingness to participate for unidentified reasons.

In one study, the adults described interactions with children as tiring, with several choosing not to participate (Black, 2011). Distress was also discovered among more structured activities, as well as less verbal interaction, as identified by Galbraith et al. (2015). When interviewed, participants also described feelings of frustration and impatience (Gigliotti et al., 2005). One study identified that too frequent participation in the program involving young children resulted in poor quality of life outcomes, as evidenced by lower activity of daily living indicator scores measuring perceived health and personal safety, intellectual development, understanding, creativity, personal expression, and socializing and lower levels of pleasure (Janke et al., 2019). Low et al. (2015) also found many adults unwilling to participate in the intergenerational program, with one adult with dementia even mentioning that "children should be at home with their mothers." Skropeta et al. (2014) mentioned periods of frustration within the intervention group.

Discussion

The aim of this study was to identify the effect of intergenerational programs on patients with Alzheimer's dementia residing in long-term nursing homes. Summary of the evidence leads to an overwhelming positive response to intergenerational programs for beneficial outcomes of those affected with dementia. A review of the literature identified that repeated exposure to elementary age children and younger resulted in improved relationships, positive affect, and improved memory and cognition among the elderly participants.

In reviewing the negative outcomes that were identified, frustration, fatigue, and uncooperative behavior were noted among a few of the participants. These outcomes may have been resolved by choosing appropriate times for the residents in which they were most awake (daytime), choosing more relaxing activities (cradling infants, singing, or listening to music), or shortening the length of some of the toddler-adult interaction groups from an hour to fifteen minutes, with greater frequency throughout the week. Alterations to these interventions may have resulted in different outcomes for several of these studies, making these groups more tolerable for many of the older individuals, more greatly affected by their diagnosis of Alzheimer's dementia.

Limitations

There appeared to be an inadequate sample representation size to account for any significant findings within any of the studies to achieve an adequate statistical significance. Although one article did include a sample size of 3,000 adults living in long-term care, this sample was also spread out for a research question seeking to answer effects of plants, animals, and children on those living in long-term care, with few participants subject to children exposure and interaction (Sloane et al., 2002). This study was also over ten years old, and resulted in no effects after exposure to children due to inadequate level of interaction.

A majority of the studies conducted were performed in the United States and Canada, although as previously mentioned, the studies from other countries appeared to be less rigorous with regards to their summary of the evidence and their data collection process. More studies conducted within the United States and Canada discussing this particular intervention would help to support the findings for this specific intervention among those with dementia living in long-term care facilities.

The measurement tools and designs varied across studies. Majority of the studies discussed a mixed-methods approach rather than a qualitative design, although after compiling data, Raciti

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there was quantitative evidence collected which proved to be statistically significant. The majority of articles based their findings solely on lower level qualitative evidence collected from surveys, interviews, and video recordings of those exposed to the intergenerational programs. In the future, more statistically significant quantitative data would need to be collected to fully support the role of intergenerational programs on impacting the depression, anxiety, and overall quality of life scores among those with dementia residing in long term care facilities.

Risk of Bias

Several areas may prove to be a source of bias within this literature. There was an overwhelming response to positive outcomes as opposed to negative outcomes following exposure to intergenerational studies. Stress was identified as the only statistically significant finding among the mixed-methods articles identified across all twelve studies (George, 2011). The majority of the evidence was a result of qualitative data collected from patients with Alzheimer's (who may be unreliable historians at times) or from decision makers, staff members, or family members, who indirectly play an influence on perceived notions of benefits or consequences as a result of these interventions.

Summary of Gaps

In order to consider the results of the review more relevant, use of the Cornell Scale for Depression (Alexopoulos et al., 1988) is an appropriate tool which could be applied to assess individuals with advanced Alzheimer's Dementia. There were also several inconsistences across studies, which failed to mention significant data which should be pertinent and useful in applying their findings to future research. Nearly half of the articles failed to discuss a measurement tool used within their study, while one article (Sloane et al., 2002) did not identify any effect, positive or negative, as a result of interaction with children on a routine, scheduled program.

Conclusion

As healthcare continues to advance, and people continue to live longer, a growing concern is the increasing prevalence of Alzheimer's dementia among the aging population. It is inevitable that this disease will continue to become more prevalent, with a greater financial and emotional burden as numbers continue to rise. This diagnosis comes with a risk for increased cognitive and physical decline, but also greater occurrences of falls, polypharmacy complications, emergency departments visits, mental illness admissions, and end of life support services. Continued research among this population to include novel methodologies to prevent many of these fatal comorbities is critically indicated.

The emerging trend appears to be a departure away from traditional pharmacotherapeutic measures towards cognitive and behavioral strategies as more influential, relevant, and costeffective approaches. More research involving randomized controlled trials, significant sample sizes and conducted in multisite settings, will provide important evidence for our healthcare system to veer from the traditional, westernized, fee-for-service model, and more towards value-based healthcare, with an emphasis on safe, quality, and positive outcomes for all.

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CASE STUDY

Spontaneous Coronary Artery Dissection: A Case Study with Nursing Implications

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Abstract

Spontaneous coronary artery dissection (SCAD) is a nontraditional cause of acute myocardial infarction found typically in younger women who have little to no cardiac risk factors. Once thought to be a rare disease process, there is now an increase in the diagnosis of spontaneous coronary artery dissection because of improved awareness and education. Registered nurses play an important role in the identification and management of this young and otherwise healthy population. Through interdisciplinary collaboration, nurses can facilitate providing standardized care to these patients. This article presents a real-life case study of a patient who experienced the trajectory of diagnosis, treatment, and long-term management of SCAD and the related nursing care implications.

Keywords: SCAD, spontaneous coronary artery dissection

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Spontaneous Coronary Artery Dissection: A Case Study with Nursing Implications

Spontaneous Coronary Artery Dissection (SCAD) is a lifethreatening and often under-recognized cause of myocardial infarction among young, otherwise healthy women. Registered nurses are often the first point of contact for patients with cardiac symptoms, making it exceedingly important to be familiar with risk factors and pattern recognition of cardiac diseases. Providing adequate care to this population is paramount, including proper management, psychosocial support, and assistance in finding much needed resources in recovery. In addition, patients often seek knowledge of their new diagnosis and might lack access to specialists in their hometowns. Using a case study approach, this report will review some of the basics of SCAD and the aspects of patient care, including identification of risk factors, rehabilitation, and ongoing management. Nurses can help identify young patients who might otherwise be missed and ensure that they are provided with the support and resources they need after this life-threatening cardiac event.

Case Presentation

GR, a 39-year-old female, mother of four, started her day like any other, dropping her kids off at school. She then headed to her primary care office where she worked as a Family Nurse Practitioner. While walking back to her vehicle, she developed a sudden onset of substernal chest pain which radiated to her neck and left arm. Blowing off the pain as anxiety related to her upcoming birthday or possibly gastrointestinal origin, she continued to her office, with the pain subsiding shortly thereafter. She was able to complete her full day of seeing patients without any personal health concerns. It had been a typical day with a packed schedule and no time for a lunch break. After returning home from her day at the office, she started making dinner when the chest pain returned but was more intense than previously experienced in the morning. She continued to think of it as anxiety-related or perhaps an esophageal spasm. She was healthy, physically fit, of normal weight, exercised 5 days a week, had no significant medical history, non-smoker, and had no indicators for atherosclerotic cardiovascular disease. However, the pain continued, so she returned to her clinic, which was a short drive from her home, and an EKG was performed. She was shocked by the EKG findings, which showed apparent ST elevation. A co-worker contacted EMS services. On the way to the hospital, paramedics administered 324 mg. of chewable aspirin and 3 sublingual nitroglycerin with no alleviation or resolution of symptoms.

On arrival to the hospital, the physical exam was unremarkable, as well as her vital signs (blood pressure (BP) 117/66 mm Hg, heart rate 81/min, respirations 10/min, and temperature 97.9 F). She continued to complain of substernal pain radiating to the neck and left arm which had intensified. A repeat EKG showed ST elevation in leads II, III, and aVF, ST depression in leads aVL, V2, V3, V4, and V6 (Figure 1), which are all consistent with an inferior wall infarction with reciprocal changes. An ST elevation myocardial infarction (STEMI) code was called, paging the oncall cardiologist and the cardiac catheterization staff. As part of the facility's acute coronary syndrome protocol, she was given ticagrelor 180 mg., heparin 5000 units IV bolus, diphenhydramine 50 mg., and IV fluids in preparation for a cardiac angiogram and possible percutaneous coronary intervention. Morphine 2 mg. IV was administered to help relieve her pain, which caused her to become hypotensive (BP = 89/50), requiring an IV fluid bolus.

Figure 1

Initial EKG Findings



Initially, her troponin level was indeterminate at 0.044. However, it peaked at 46.00 over the next 6 hours. All other lab work was unremarkable at that time. Her chest x-ray showed no active disease. She had no risk factors for coronary artery disease, including obesity, smoking, previous drug use, hypertension, hyperlipidemia, diabetes, or cardiac family history.

GR was transferred to the cardiac catheterization lab for diagnostic cardiac angiogram. During the transport, she developed nausea and vomiting. Coronary angiogram showed a left dominant system, left anterior descending artery with severe tortuosity, left circumflex coronary artery stenosis starting proximally and extending the length of the artery, with 90% occlusion and faint collateral arteries (Figure 2). Imaging of the right coronary artery showed no obvious stenosis. The initial impression was that of vasospasm due to the exceptionally long segmental area of the circumflex artery. The physician administered multiple doses of intracoronary adenosine and nitroglycerin with no improvement. Angioplasty and stenting were initiated, and three drug-coated stents were placed in the distal, mid, and proximal aspects of the circumflex artery. Development of a brief run of ventricular fibrillation occurred, requiring defibrillation. The results of the intervention were good with zero residual stenoses and resolution of ST segment elevation on EKG.

Figure 2

Coronary Angiogram with Left Circumflex Coronary Artery Stenosis



Unfortunately, GR had a difficult recovery course because of findings consistent with hypoxemic respiratory failure, secondary to flash pulmonary edema, and severe hypotension (systolic BP between 60 and 80) requiring norepinephrine, which necessitated admission to the cardiovascular intensive care unit. Post-event echocardiogram showed moderate to severe mitral valve regurgitation, secondary to ischemia, with an ejection fraction of 35-40%, and moderate to severe inferior wall hypokinesis. After 6-days of recovery, she was able to be discharged in stable condition and to follow up with cardiology as an outpatient.

Spontaneous Coronary Artery Dissection

Spontaneous coronary artery dissection is a nontraditional cause of acute myocardial infarction found typically in younger women with little to no cardiac risk factors (Wagers et al., 2018). Often underdiagnosed, SCAD occurs when a tear or hematoma develops in the lumen of a coronary artery blocking the flow of blood to the heart, causing an acute myocardial infarction and cardiac ischemia (Wagers et al., 2018). Clinical presentation depends on the severity and location of dissection and the degree of blockage preventing blood flow. These patients can present from a range of being asymptomatic to becoming critically ill, with acute coronary syndrome, ventricular arrhythmias, or sudden cardiac death (Mokhberi et al., 2015). Cases are 2:1 female, with one-third of these occurring in women in the peripartum period (Tweet et al., 2011). In addition, inflammatory and connective disease disorders (Ehlers-Danlos, Marfan syndrome, and Fibromuscular Dysplasia), excessive exercise, and the use of hormone therapy are considered

risk factors (Eleid et al., 2014; MacDonald, 2020). Saw et al. (2017) reported that uncontrolled hypertension had been found to increase the risk of SCAD by exerting pressure on the vessel walls making them more susceptible to damage. Atherosclerotic changes seen in the traditional myocardial infarction are absent in SCAD patients, often leading to late diagnosis or mismanagement of the disease process (Adlam et al., 2019). Previous research shows that SCAD has high recurrence rates of up to 20% and a high incidence of major adverse cardiovascular events, including heart failure, ischemic cardiovascular events, stroke, or cardiac death (Adlam et al., 2019). Coronary artery tortuosity (Figure 3) is a common finding in the SCAD population and could be one of the best predictive indicators for recurrence (Eleid et al., 2014). Arterial tortuosity is defined by the number of curvatures present and the degree of each curvature within a vessel (Eleid et al., 2014).

Figure 3

Arterial Tortuosity on CT Cardiac Angiogram



Pathophysiology

Spontaneous coronary artery dissection continues to be poorly understood in terms of pathophysiology. Arterial walls, including the coronary arteries, contain three layers: the tunica adventitia (outer layer), tunica media (middle layer), and the tunica intima (inner layer). Spontaneous coronary artery dissection occurs when there is a separation between these layers or a rupture of the arterial wall creating a false lumen. As blood fills this lumen, an intramural hematoma develops, compressing the true vessel lumen, obstructing blood flow to parts of the myocardium (MacDonald, 2020).

In comparison, atherosclerotic coronary artery disease is typically seen in individuals with well-known risk factors such as obesity, smoking, high blood pressure, high cholesterol, diabetes, and family history. Atherosclerotic deposits build up on the inner arterial lumen over time and limit blood flow to the myocardium. These buildups can lead to plaque ruptures within the arterial lumen creating platelet aggregation, causing obstruction and cardiac ischemia.

Disease Management

In the past, general cardiologists could go a lifetime without seeing a SCAD patient in their practice. When they did have these patients, they were often treated by standard acute coronary syndrome guidelines, which do not always apply to the SCAD population. This led patients seeking SCAD specialists to endure considerable travel for appropriate management. However, many patients do not have the time or financial means to travel extensively for specialty care. Many patients voice frustrations in their providers for not having answers to complex questions.

The patient in the above case study received follow-up treatment at the SCAD Mayo Clinic in Minnesota and was medically managed on bisoprolol, lisinopril, clopidogrel, and aspirin. Atorvastatin was removed from her management, as her lipid profile was unremarkable, and statins are not recommended in SCAD patients without the presence of hypercholesterolemia.

Medical Management

Medical management is recommended as first-line treatment in SCAD, except in cases of ongoing ischemia, ventricular arrhythmias, dissection of the left main coronary artery, or hemodynamically unstable patients (Hassan et al., 2019). Percutaneous coronary intervention is controversial in this population. There are concerns of rupturing the already damaged vessel wall, further expansion of the dissection from angioplasty balloons, or accidental insertion of the guidewire into a false lumen (Hayes et al., 2018). Although randomized trials of SCAD patients do not currently exist, prospective data show that the use of beta-blockers appears to decrease recurrence rates in this population by reducing the stress and pressure exerted on the vessel's walls by the heart (Saw et al., 2017). Although standardized SCAD guidelines have yet to be established, the use of beta-blockers for treatment and recovery appears to have a strong agreement among SCAD specialists (Hayes et al., 2018; MacDonald, 2020; Tweet et al., 2018).

Cardiac Rehabilitation

Cardiac rehabilitation (CR) has been shown to reduce mortality after an acute myocardial infarction by up to 25% and has a national Class-1 indication, meaning it is strongly recommended (Grace et al., 2009; Krittanawong et al., 2016). Yet, women are less likely to attend CR, and when they do, they are less likely to complete the program than men (Krittanawong et al., 2016). Research involving SCAD and CR is limited, but Krittanawong et al. (2016) found that the lack of a referral from providers is the primary reason women did not attend CR. Women are also more likely to cite barriers that keep them from participating, such as children, household obligations, lack of insurance, and the lack of transportation (Grace et al., 2009).

Nursing Implications

Nurses are often the first point of contact for patients and their families when suffering medical emergencies. Nurses must identify evolving disease processes to initiate care pathways and notify providers of possible life-threatening conditions. It is critical to consider and identify SCAD as a cardiac phenomenon among young and healthy individuals with little to no cardiac risk factors. Nurses should provide much-needed education to patients and families to inform and provide support on the diagnosis of SCAD and its future repercussions to health. This includes discussing physical limitations, such as avoiding excessive physical exercise, weight restrictions, and lifestyle modifications.

Standard treatment guidelines do not exist for SCAD, and each patient is unique. Therefore, medications should be prescribed according to the patient's diagnosis and sequela. Nursing staff should advocate for the use of appropriate individualized medication management plans, such as the use of beta-blockers to reduce recurrence when appropriate. The use of angiotensin-converting enzyme inhibitors may be appropriate to minimize cardiac remodeling when faced with left ventricular systolic dysfunction (Martinez, 2012). Unlike atherosclerotic coronary artery disease, statins are not recommended routinely in SCAD patients and have been associated with higher recurrence rates (Hayes et al., 2018).

Spontaneous coronary artery dissection is a sudden and often traumatic event in the young female population, some of whom have recently delivered babies. Although SCAD is often seen in the post-partum population, it is not exclusive and can be found in any healthcare setting where nurses work.

Survivors express feelings of depression and anxiety after a SCAD event, and patients often lack understanding from their support systems. In the role of patient advocate, nurses can provide education to support systems, connect patients with counseling services and guide them to attend SCAD support groups. Through education and counseling, nurses offer support through the recovery period, including encouragement to participate in cardiac rehabilitation and not miss referrals to medical providers. Nurses must continue to act as patient advocates and support the delivery of quality and safe care, which will improve patient outcomes among SCAD patients.

Conclusion

Spontaneous coronary artery dissection was believed to be a rare disease in the past. Recently, however, there is an increase in diagnosis and recognition of SCAD through improved awareness and education. This medical condition has high mortality and recurrence rates, resulting in life-altering physical and psychosocial effects on patients. Registered nurses play an important role in the care of SCAD patients by providing much-needed support and education. In addition to encouraging appropriate management of the disease process, nurses must stress the importance of attending and completing cardiac rehabilitation, and directing patients to much-needed psychosocial support systems. Through increased education, continued research, establishing standardized guidelines, and interdisciplinary collaboration, nurses can pave the way to providing appropriate care to SCAD patients.

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