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Reddit and Nursing During Covid-19: A Summative Content Analysis

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Abstract

Purpose: The purpose of this thesis was to explore what self-identified nurses discussed on the nursing SubReddit during the Covid-19 pandemic between March 2020 to May 2020.

Methods: The Hsieh and Shannon (2005) summative content analysis with emergent categorical development was used to categorize the naturalistic data.

Findings: Through analysis, six content categories were identified from the nursing SubReddit: (a) employers' approaches to the pandemic; (b) emergency preparedness in response to the pandemic; (c) shared experiences; (d) nursing students and new graduate nurses; (e) coping; and, (f) gratitude to nurses.

Implications: (a) Leadership that is communication-focused will improve the quality of nursing management; (b) social media can be used on an ongoing basis to learn more about the profession; and, (c) future pandemic and disaster planning for the nursing profession can take insight from the findings of this work.

Keywords

Keywords - Reddit, nurses, online, summative content analysis, Covid-19, social media

Summary for Lay Audience

The Covid-19 pandemic caused a significant strain on healthcare systems worldwide. As a result, nurses felt fear, confusion, and uncertainty during this time. Nurses posted to the internet social media website called Reddit to share anecdotes and insights about the pandemic. It is important that we learn about what nurses shared online, as nurses have a unique perspective of the challenges brought by Covid-19. Studies have explored nurses' online interactions on other social media websites, however no studies explored content shared by nurses on Reddit during the pandemic.

The current research project explored what self-identified nurses discussed on the nursing SubReddit during the Covid-19 pandemic. Online posts published between March 2020 to May 2020 were included. Information came from self-identified nurses and nursing students' posts. The researcher organized the posts to identify categories and subcategories of topics discussed to address the research aims. The researcher found that nurses spoke about how their employers managed and prepared for the pandemic. Nurses also used Reddit to share experiences and coping strategies. Nursing students used Reddit to discuss their education and future employment.

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CHAPTER ONE

On March 11th, 2020, the World Health Organization (WHO) announced that the SARS-CoV-2 virus had reached pandemic proportions (World Health Organization, 2020). Initial reports suggested that the SARS-CoV-2 virus (later referred to as Covid-19) spread from person-to-person through direct contact or exposure to an infected person (The Centre for Disease Control and Prevention, 2020). During the early months of the pandemic in spring 2020, healthcare systems worldwide were overwhelmed. Emergent policy was implemented to reduce the spread of disease. For example, in March 2020 Ontario issued the closure of non-essential work and banned social gatherings. Ontario issued an emergency order under the Emergency Management and Civil Protection Act to cease operation of recreational amenities. These recommendations were provided by supported by the Chief Medical Officer of Health (Yelich & Chazan, 2020). The resulting fear, confusion, and uncertainty during this time resulted in nurses posting to internet social media sites to share concerns, insights, and cope. One social media site, Reddit, was found to be a popular avenue for self-identified nurses to post anonymous messages regarding their activities as nurses during the onset of the pandemic. Due to the richness of the messages posted to Reddit by self-identified nurses, this data source was deemed to be both an important historical narrative record of nursing experiences during the early phases of the Covid-19 pandemic. Thus, Reddit was a data source worthy of deeper analysis from which to emerge practice, policy, education, and research implications for the nursing profession. Therefore, the purpose of this thesis was to explore what self-identified nurses discussed on the nursing SubReddit during the early phases of the Covid-19 pandemic between March 2020 to May 2020.

To do this, this thesis is comprised of three chapters. In chapter one, the writer sets the foreground of this dissertation by breaking down the multifaceted virtual world of Reddit and how self-identified nurses interacted with this social media site in the early phases of the Covid-19 pandemic. Chapter two provides the findings of a content analysis informed by Hsieh and Shannon (2005), which explored Reddit posts by self-identified nurses between March 2020 to May 2020. Finally, chapter three provides a discussion related to the implications and limitations of the research study.

Reddit

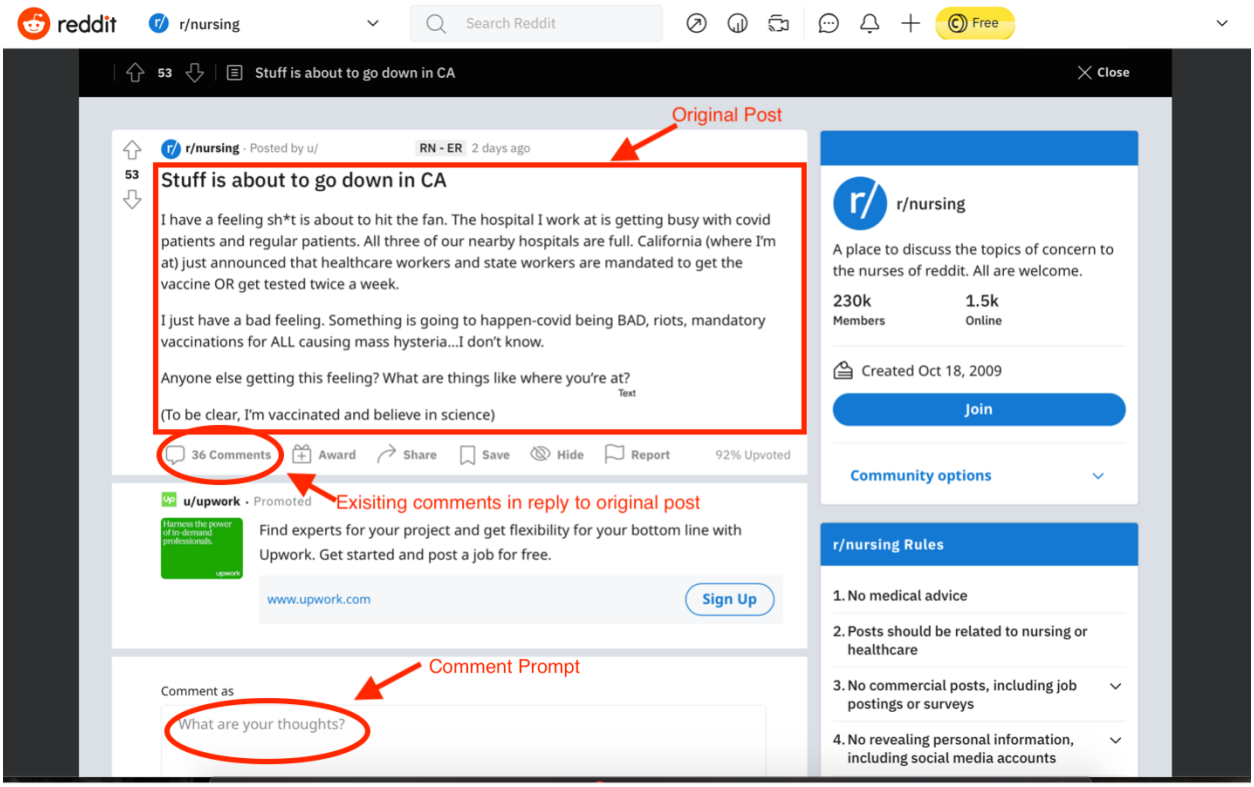
Reddit is the sixth most publicly used website worldwide (Record et al., 2018). In March 2020, the total number of users taking part in a subreddit community with the word "coronavirus" or "covid" was over 1.6 million (Eghtesadi & Florea, 2020). It is a publicly available aggregator social media platform used to share multimedia and stimulate discussion from participants (Reddit, 2016, p.125). Reddit can be used by any person in the world with access to the internet and an electronic device. Multimedia (e.g., text, images, videos, hyperlinks, etc.) are shared by participants in topic specific sections, named SubReddits, of the participants' choice. Any participant can view posts within conversation threads and choose to (a) respond; (b) *upvote* or *downvote*; or, (c) ignore the posts (Record et al., 2018; Reddit, 2016, p.299). A visualization of the structure of a Reddit thread is presented in Figure 1. The *upvote* or *downvote* feature generally indicates a respective vote of agreement or disagreement with the multimedia shared (Record et al., 2018). All posts can be upvoted or downvoted by any participant and each participant can cast only one vote per post. Comments with a larger number of votes indicate increased engagement by individual participants. Reddit possesses the programming power to

detect the comments with the most engagement and organize posts by most engagement to least engagement. The organization of data based on maximum engagement displayed at the top of the webpage organically draws participants to view the content with the most participation (Anderson, 2015).

Karpeh and Bryczkowski (2017) describe that prior to the Covid-19 pandemic, digital platforms such as Reddit were heavily used across the world for people to post about their experiences regarding a variety of situations, news, interests, and as a means to communicate information to colleagues and the public. O'Neill (2018) suggests that individuals discuss their experiences online to find a supportive community, seek advice, and share stories. The anonymity to individuals afforded by Reddit also plays a central role in strengthening the quality of conversations as people are not restrained by the fear that would come from aligning their opinions with their true identities (Marcon, Ravitsky, & Caulfield, 2021). Marcon, Ravitsky, and Caulfield (2021) presents Reddit as an opportune website that allows participants to anonymously solicit information and freely converse online. Hence, Reddit is a well-positioned platform to host emergent dialogue about the Covid-19 pandemic.

Figure 1

An Example of an Expanded Reddit Thread



Note. Displayed is the primary post which initiated the thread. Note the ability for a participant to comment, with the prompt: *what are your thoughts?*, and the 36 existing comments.

SubReddit

Reddit contains over one million self-regulating online communities called *SubReddits* which focus on niche topics. SubReddits are named by the topic of interest, starting with *r/* (Jhaver et al., 2019) and are topic specific discussion forums which form virtual communities founded in common interests (Marcon, Ravitsky, & Caulfield, 2021). Each SubReddit contains rules and conditions of joining and contributing to the SubReddit called *reddiquette*. Users can post submissions, comment on others' submissions as well as *upvote* or *downvote* submissions (Marcon, Ravitsky, & Caulfield, 2021). Most SubReddits can be viewed by any internet

participant without an account unless it has been closed to the public and is only accessible to the subscribers of the SubReddit (Marcon, Ravitsky, & Caulfield, 2021).

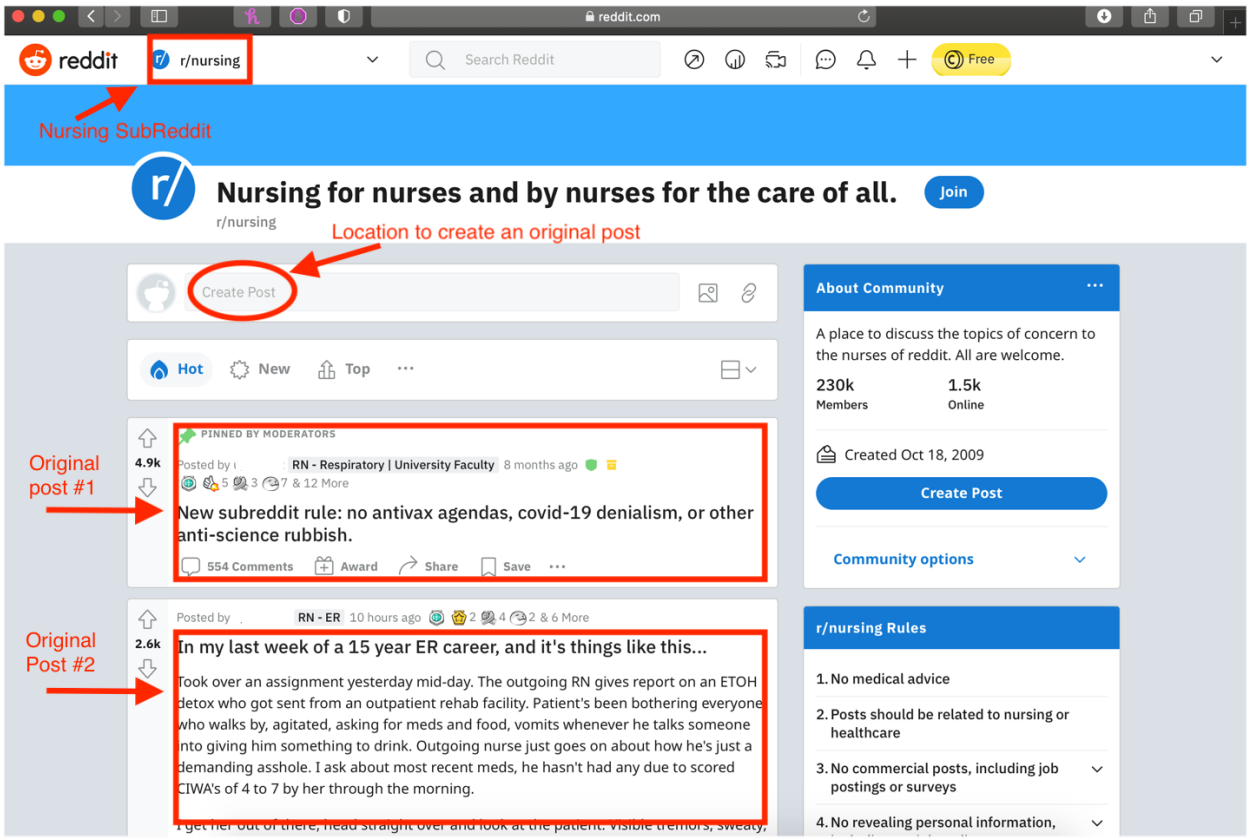
R/Nursing.

The nursing SubReddit (r/nursing) is an openly accessible online forum that allows participants such as nurses to discuss topics of concern. It is a community for nurses and other participants to share ideas about the nursing profession. The SubReddit contains over 150,000 subscribers which enables members to be notified of posts and updates within the forum. Subscribers voluntarily submit their contact information to be notified of SubReddit activity. The rules of the SubReddit include: (a) no [posting of] medical advice; (b) posts should be related to nursing or healthcare; (c) no commercial posts including job postings or surveys; (d) no revealing personal information, including social media accounts; (e) no sharing of identifiable patient information; (f) no personal insults; (g) do not advocate unsafe practice; (h) no

electioneering; (i) no selling of PPE; and, (j) no racism. A visualization of the nursing SubReddit is presented in Figure 2.

Figure 2

An Example of a User's View of the r/nursing SubReddit Webpage



Note. Displayed is the r/nursing subreddit which displays other users' conversation threads. Note the option to create a new post

Privacy and Data Sharing

Reddit is a publicly available social media platform where individuals can create their own posts within a variety of forum categories. The discussion threads and comments from Reddit are publicly available. Reddit participants are anonymous in that they create aliases online

with usernames and other participants are unable to obtain their personal information. Furthermore, all Reddit content can be accessed without an account, by anyone with an internet connection. The Reddit end user licence agreement (EULA) states that the license includes the right for Reddit to make participant content available for distribution or publication by other individuals external to Reddit (*Reddit Privacy Policy*, 2021). Therefore, participants of Reddit voluntarily enter an agreement that all information or content shared online is publicly available for use. Essentially, the EULA stipulates that Reddit has the license and therefore autonomy to utilize information on the website in the present and future (*Reddit Privacy Policy*, 2021). Reddit does not take responsibility or oversee any use or the actions of any third-party users of publicly available Reddit content. The Reddit Privacy Policy states that information submitted by participants through a post or comment is shared with all visitors of the website (*Reddit Privacy Policy*, 2021). Reddit also permits third party websites to have full access to embed public Reddit content (*Reddit Privacy Policy*, 2021). Overall, Reddit fully discloses to its participants that website content may become public at any time.

Chapter Summary

The first chapter of this dissertation presented the introduction and objective of the research supported by a background of the data collection medium, Reddit, as well as the definition and utility of a nursing SubReddit. The privacy and data sharing licensing agreements of the Reddit website were also explored in relation to the application of data to research. The next chapter will provide the primary findings of the study central to the research purpose of exploring what self-identified nurses discussed on the nursing SubReddit (r/nursing) during the early phases of the Covid-19 pandemic between March 2020 to May 2020.

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CHAPTER TWO

Introduction

In early 2020, the SARS-CoV-2 virus became the world's most prominent health crisis (Rothan & Byrareddy, 2020) because of the rapid person-to-person transmission (Battista et al., 2020) and illness severity. Due to the ubiquity of social media in 2020 (Badell-Grau et al., 2020), many of these internet-based platforms captured real-time data of the evolution of discourse about Covid-19, especially when face-to-face communication became heavily restricted due to public health recommendations to isolate and socially distance (Khatoonabadi et al., 2020; Lades et al., 2020).

Reddit is a publicly available and anonymous social media platform for participants to share their opinions on a multitude of topics (Pandrekar et al., 2018), which is done through posting multimedia (e.g., text, images, videos, hyperlinks, etc.) on topic specific subsections of Reddit (i.e., SubReddits). Thus, participants identify the SubReddits of their interest and engage with other participants with the same interests (e.g., nurses could interact on the nursing SubReddit, r/nursing). During the initial waves of the SARS-CoV-2 pandemic (March to May 2020), the nursing SubReddit captured significant dialogue posted by self-identified nurses regarding the unprecedented work environments, mortality, and limited medical resources available to front-line workers during this time. Due to the richness of data captured on the nursing SubReddit during this period, exploration of the content posted by self-identified nurses was deemed worthy for deeper exploration. Subsequently, the purpose of this study was to explore what self-identified nurses on the nursing SubReddit (r/nursing) discussed during the early phases of the Covid-19 pandemic between March and May 2020.

Background

Due to the emergent and contemporary nature of the Covid-19 pandemic, increasing amounts of research exploring the use of social media by nurses have been completed to date. For instance, published exploration of the motivations behind nurses' use of social media to share information to other nurses during the pandemic currently exists in the literature (Aly et al., 2021, Arasli et al., 2020; Bennett et al., 2020; Bergman et al., 2021; Cho et al., 2021; Fontanini et al., 2021; Halcomb et al., 2020; Hammond et al., 2021; Wahlster et al., 2021; White et al., 2021). Topically, studies examining nurses' posting to social media include reports of their experiences during the pandemic; various exacerbations of trauma, burden, and inequality recognized within health care structures (i.e., psychological trauma, burnout, emotional burden, ethical stress) (Bennett et al., 2020; Bergman et al., 2021; Fontanini et al., 2021; White et al., 2021). Several studies also identified that short staffing and poor communication from supervisors contributed to feelings of burnout (i.e., anxiety, depression) in frontline healthcare workers (Aly et al., 2021; Hammond et al., 2021; Wahlster et al., 2021). Other examinations of nurses' experiences drawn from social media posts have focused on evaluating nurse's knowledge of infection control (Bashir et al., 2021) and fear for personal safety (e.g., patients, exhaustion, family, PPE, uncertainty) (Arasli et al., 2020; Cho et al., 2021; Halcomb et al., 2020). Finally, critical examination of *hero discourse* related to the nursing role during the pandemic, and its potential detrimental effects upon the well-being of the profession has also been undertaken (Mohammed et al., 2021; White et al., 2021).

Several studies examined how nurses currently interact with the online environment and provided recommendations as to how their activity could be made meaningful and reflected in legislation relevant to the profession (Anders, 2021; Carvalho et al., 2021; Newby et al., 2020).

For example, Newby et al. (2020) completed a reflective study on nursing ingenuity during the Covid-19 pandemic that aimed to: (a) provide insight toward nursing innovations to reduce personal protective equipment waste for nurses taking care of Covid-19 patients; and, (b) capitalize on recent advances in mass electronic communication through social media to encourage nurses from across the globe to share knowledge and expertise. Anders' (2021) analysis of nurses' engagement in health policy provided an overview of some of the barriers front-line nurses faced in participating in the development or refinement of Covid-19 policy, such as a lack of political perceptiveness, personal and professional commitments, and a lack of self-confidence. A secondary aim of Anders' (2021) study was to present social media guidelines that nurses can use to guide them in participating in effective health policy planning. Finally, an exploratory study of videos posted to YouTube between March 11 and April 11, 2020 found that some of the YouTube content generated by nurses contained targeted criticisms and demands to improve nursing working conditions (Carvalho et al., 2021). Carvalho et al. (2021) concluded that health care protocol and policy development in pandemic-related management and planning would benefit from nursing involvement, due to the profession's central position in many health care processes. Other studies echoed the findings that nurses felt the need to seek information online to complement perceived knowledge gaps in practice and pandemic protocols (Elhadi et al., 2020; Qadah, 2020; Wicke & Bolognesi, 2020). Qadah (2020) conducted a cross-sectional study to evaluate the healthcare workers' knowledge and attitudes toward Covid-19. This study found that social media was one of the main sources of information for healthcare workers seeking information about the pandemic (Qadah, 2020).

Finally, only a few exemplars of research exploring nursing students' use or interaction with social media as related to the Covid-19 pandemic have been published to date. Albaqawi et

al., (2020) used a convenience sample of 1,226 nursing students to examine their knowledge, opinions, and preventive behaviours towards Covid-19. Their research found that all students were acutely aware of the pandemic and that a majority of the student participants in the study relied on social media as a principal source of information related to Covid-19 (Albaqawi et al., 2020). Another study conducted by De Gagne et al. (2021) found that self-identified nursing students who actively used Twitter shared concerns about the impact of the Covid-19 on their education (e.g., role as a student, experience as nursing student, daily lives, information sharing), impacts upon social connections (e.g., mental health considerations), and various sociopolitical issues considerations highlighted by the pandemic (e.g., government handling of the pandemic; political movements).

Study Purpose and Research Question

The purpose of this study was to explore what self-identified nurses on the nursing SubReddit (r/nursing) discussed during the early phases of the Covid-19 pandemic between March 2020 and May 2020. Subsequently, the following research question was posed: what do self-identified nurses who contribute to the online SubReddit (r/nursing) between March 2020 and May 2020 discuss regarding the nursing profession in relation to the Covid-19 pandemic?

Methods

The *Naturalistic Inquiry* method described by Lincoln and Guba in Naturalistic Inquiry (1985) was used to examine what was shared on the nursing subreddit by self-identified nurses about the Covid-19 pandemic. The aim was to gather sufficient thick description (Lincoln & Guba, 1985) from the secondary data obtained online. In this research study, the naturalistic

inquiry axioms described by Guba and Lincoln (1985) were employed. Parallels were drawn between the naturalistic axioms listed by Guba and Lincoln (1985) and the axioms observed in the data of nurses' experiences during the pandemic. The axioms of naturalistic inquiry are as follows: (a) realities are multiple, constructed, and holistic; (b) knower and known are interactive; (c) only time and context bound hypotheses are possible; (d) all entities are in a state of mutual simultaneous shaping; and, (e) inquiry is value-bound (Lincoln & Guba, 1985). Research of nurses' conversations during a health disaster helped develop a perspective that assumes multiple, yet shared, experiences with co-constructed meanings.

Furthermore, the naturalistic paradigm attempts to understand truth from multiple realities. Lincoln and Guba (1985) describe a series of concepts to ensure trustworthiness of naturalistic research. *Credibility* ensures confidence in the truth of the findings (Lincoln & Guba, 1985). Credibility was maintained through transparency of methods and project oversight from impartial supervisors. *Transferability* is the ability to apply research to other contexts (Lincoln & Guba, 1985). In this research study, transferability was developed through the presentation of rich findings that may have interpretive applicability within other digital contexts and online settings where nurses discuss important nursing concepts and practice considerations. *Dependability* is described as findings that are consistent and could be replicated (Lincoln & Guba, 1985). While the purpose of the research was not to generate a study that could be replicated in a post-positivist sense, the work completed was dependable in terms of capturing and analyzing a significant moment-in-time, as related to the Covid-19 pandemic descriptions on Reddit. Finally, *neutrality* was maintained through self-reflection and hermeneutic reflexivity throughout multiple points of the research process and associated analysis of data.

Sampling and Data Collection

Using a purposive, systematic qualitative data collection method, the researcher examined a subset of available posts, comments, and questions on the nursing SubReddit published between March 2020 to May 2020. Each post or comment was a unit of qualitative analysis.

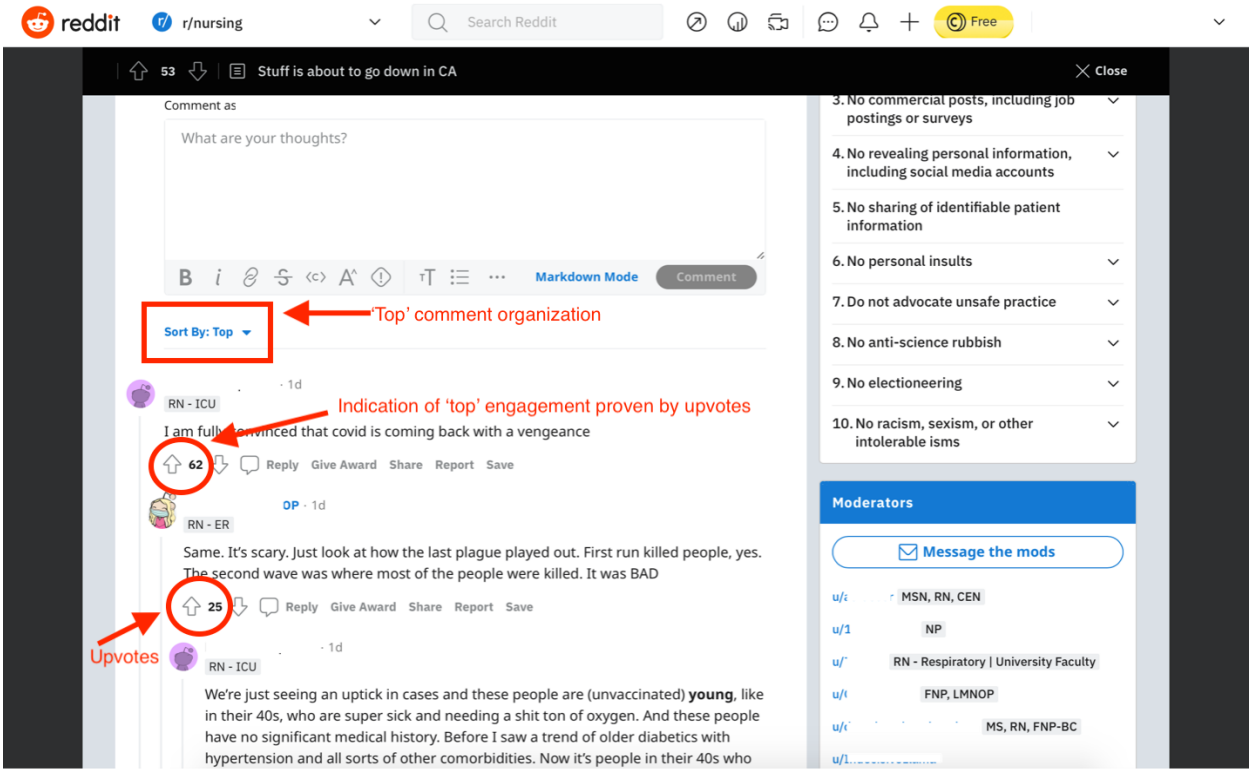
To extract data from the nursing SubReddit, a web scraper platform (i.e., PRAW) was used to download conversation threads from the website. The conversation threads were managed using NVivo 12. NVivo 12 is a qualitative software utilized to import data and manage, organize, and meaningfully display concepts (Woolf & Silver, 2017).

The web scrape produced a singular excel document which contained all the content ever posted on the nursing SubReddit, resulting in a total of roughly 100,000 individual discussion topics and responses. The excel file contained four data columns: (a) the date of publication of each post; (b) the post title; (c) a hyperlink for each primary post; and, (d) a hyperlink for the comments section of the primary post. Discussion threads made between March 2020 and May 2020 were imported to the qualitative analytical software NVivo 12. All data from each thread included the date of post, username of the poster, comments, upvotes and downvotes. To reduce the size of the data file into a manageable volume for analysis, the NVivo's search query functionality was used to create three search queries to select discussion threads containing terms sensitive to the research question of the study: (a) *coronavirus* (233 results); (b) *covid* (1037 results), and (c) *pandemic* (214 results). The results of each of these three specific search queries provided enough data for analysis and acted as the data inclusion criteria for this study.
Given the narrative and hierarchical structure of Reddit posts, further organization of the data was required prior to data analysis. Conversation threads resulting from the three search queries

were organized using the *Top* comments sorting hierarchy functionality, to show comments left by participants which had been interacted with by other Reddit participants the most, through both upvoting and downvoting. A visualization of the Top comment hierarchy is presented in Figure 3. Spam threads with zero comments or removed by auto moderators were removed from the data pool. The writer used an interpretive and analytical approach to purposefully select threads with rich and thick narratives within the Reddit corpus. Threads selected were information-rich comments or conversations for study. Participants' attitudes and experiences were the basis of thick descriptions. The objective was to identify consistency in discussion topics as a portrayal of self-identified nurses in the context of the pandemic. Hermeneutic reflexivity was used to continually reflect upon interpretations of narratives' implicit meanings (Shaw, 2010, p. 240). The conversation threads were then manually copied and pasted into word documents. After all data had been extracted, the conversation threads were imported into NVivo 12 for content analysis.

Figure 3

An Example of the Top Comments Within a Reddit Thread



Note the *Sort by: Top* hierarchy and upvotes.

Data Analysis

As described by Hsieh and Shannon (2005), a content analysis is an acceptable method for analyzing text data. Research using a qualitative content analysis approach focuses on the language used and the context and meaning ascribed to the text by looking deeper than the face value of the text. The criterion for data is open-ended and can be obtained from physical, verbal, or virtual datasets. The goal of a content analysis is to categorize large quantities of text into concise groupings with shared meanings. Further, this approach is a subjective research method which allows researchers to share logical interpretations of the content, is unobtrusive to the participants and explores the data of interest in its natural state. Credibility in this research

method is maintained through transparency and consistency of the text and its subsequent interpretations.

Hsieh and Shannon (2005) described three distinctive approaches to qualitative content analysis inquiry (i.e., conventional, directed, and summative). These approaches share the common goal in that they align with a primarily naturalistic paradigm and are used to ascribe meaning from the context of text data (Hsieh & Shannon, 2005). For the purposes of this study, a summative analysis was selected as the primary data analysis method to generate insights from the data.

Summative Content Analysis

A summative content analysis identifies key words to explore within the text dataset. These words contextualize and quantify the meanings within the data set. The quantification of the frequency of a keyword is a manifest content analysis. A manifest content analysis is deepened when the latent meanings of the words are analyzed which goes beyond the quantification of key words. A summative approach to qualitative content analysis focuses on discovering underlying meanings of the words or the content. Further, in summative qualitative content analysis the dataset is searched for the occurrences of identified words manually or by using technology such as a computer. Validation of the content can be checked with the participants producing the data to validate interpreted meaning by the researcher. This method of qualitative data analysis is advantageous in that it allows the data to be categorized without the influence of pre-conceived theory. In sum, a summative content analysis can be used to assist in addressing the question: how can data be subjectively interpreted through systematic coding and identifying themes? (Hsieh & Shannon, 2005).

To conduct the summative content analysis, the NVivo software was used to code content categories within the data, and to help link these patterns together in the text to make deeper level connections, using a transparent process. The qualitative content analysis begins after all units of analysis are collected and examined so they can be classified into categories that represent similar meanings (Hsieh & Shannon, 2005).

Data analysis in this study was initiated by reviewing the links within the three saved *search queries* to develop an understanding and familiarization with the data. A random sample analysis of 233 results of discussion threads from the search query *coronavirus* were used to develop a preliminary coding framework. The writer read and conceptualized the discussions while juxtaposing them against the research question: *what do self-identified nurses who contribute to the online SubReddit (r/nursing) between March 2020 and May 2020 discuss regarding the nursing profession in relation to the Covid-19 pandemic?* The writer purposefully selected threads that contained rich and thick narratives. Initial codes were emerged and documented in NVivo 12, based on meaningful groupings. The first questions or posts of each of the included Reddit threads were placed into categories or *nodes* based on common themes. For example, almost all the threads contained discussions about protective equipment and safety which led the writer to identify an emerging category about experiences regarding personal protection. The categories and methods were discussed amongst the research team and the decision was made to move forward with an in-depth analysis. Overall, the final database analyzed in this study contained a total of 94 conversation threads.

The categories were named as per their principal topic. The NVivo software allowed for the categories and content to be filed into *nodes*. The categories were deducted using an emergent thematic analysis method. The emergent thematic analysis consisted of the researcher

reading the Reddit threads and intuitively developing category names that best described their overall message. The writer broadly defined each Reddit thread by asking herself: *what is the message being discussed overall?* The researcher did this with all threads of data until all the data had been categorized. The researcher then proceeded to methodically re-read the categories. If the researcher found sub-conversations that aligned closer with another category, they were moved to those categories. If there were portions of the thread that did not fit in any of the existing categories, then they were placed in a new category. New categories were made only when juxtaposing them against the existing categories led to no logical placement. The researcher continued the process of refining the categories until each category contained data that logistically aligned with the central theme. The primary supervisor to the project performed audits to verify coding consistency and qualitative credibility.

Ethics

Before undertaking the research, the abstract and proposed research methods were submitted to Office of Human Research Ethics (OHRE), on behalf of Western University's Research Ethics Boards (REB). The OHRE determined that the data on Reddit was in the public domain and thus the individuals who submitted their information online had no reasonable expectation of privacy. Therefore, it was determined that Western University’s REB did not need to provide project oversight. Despite some participants volunteering personal information through their usernames and post details, all identities of participants and Reddit accounts were censored during study to preserve Reddit participant anonymity.

Findings

Through data analysis, six content categories were identified from the Reddit data sensitive to the study research question: (a) *employers' approaches to the pandemic*; (b) *emergency preparedness in response to the pandemic*; (c) *shared experiences*; (d) *nursing students and new graduate nurses*; (e) *coping*; and, (f) *gratitude to nurses*. These categories will be described below, including examples and thematic justification.

Employers' Approaches to the Pandemic

Within the discussion posted to the SubReddit of nursing, the actions undertaken by either the organization or employers of the self-identified nurses was described in detail. Three subcategories were identified as related to employers' approaches to the pandemic. These included: (a) *communication to nurses*; (b) *nursing administrators use of funds*; and, (c) *considerations for nurse's health and safety*.

Communication to Nurses

As described in the Reddit threads by self-identified nurses, information about the Covid-19 pandemic from the health administration teams and medical authorities was inconsistent. It is reported that nurses' employers did not communicate information in a timely manner. One participant reported the following experience: "Nothing, nothing has been done. Not even a quick email". Participants felt that their employers did not provide sufficient communication to nursing staff in response to healthcare challenges. The following explanation was shared in one discussion thread: "At least your hospital is communicating with you. There are confirmed cases near us, and I have heard nothing. Other than that, we are low on masks", with another

participant responding “we are the nearest hospital to a major international airport on the west coast. I haven’t heard anything from my management. I guess we are just waiting”. Some self-reported nurses did report that even though their hospital administration disseminated information to them, they initially found the information challenging to trust. This issue was echoed by one self-identified nurse affirming:

> No one knows what they’re doing. We too are getting daily emails filled with “updates” on policy, sprinkled with ass-pats about how we are “heroes” and that management is “so proud”. It’s so demeaning.

Many participants reported that pandemic related information was falsely relayed to nurses. One of the participants noted this issue by sharing, “I know, the authorities keep downplaying it [the coronavirus] and telling hospital admins [administration] the risk is low”. One self-identified nurse reported the dissemination of information as untrue and idealistic when describing her work meetings. For instance, a participant nurse suggested that despite the educational efforts, the value of the communication presented practicality challenges: “A bullshit in-service during huddle pretending were going to be able to differentiate between any generic URI [upper respiratory infection] and the Coronavirus”. Other participants similarly echoed: “we’re not being trained properly. It seems like to the management it’s not a big deal. Only now I heard a huddle about it after it’s been on the headlines”. Participants reported that information obtained from employers was offered late and provided no original value. In contrast, one participant reported a different experience in describing that the hospital where they were employed were providing accurate and timely educational updates:

> We have a National Laboratory on campus (and they are working on the vaccine so yay!), so we have a permanent biocontainment unit and protocols for everything under the sun.

> Not that you need anything special for Covid-19 so far as we can tell right now. They are updating us regularly and just sent out an updated screening process today as well as travel recommendations for all our employees and students (lots of international talent here). No one is worried yet, but we have all the PPE in stock and are as prepared as we can get right now. Our hospital is in regular contact with the local, state and fed health districts and is doing a good job relating significant info to us.

The communication efforts and diligence were expressed by several self-reported nurse participants, including one participant reporting:

> My hospital has a stock of appropriate PPE [personal protective equipment], and they've been going over PPE instructions in huddle every day. Every pt [patient] checking in to triage is screened by the CDC's [centre for disease control] standards immediately. If any pt [patient] screens positive, they are to be put in an isolation room and on airborne precautions. Still waiting on first Covid-19 positive screen.

Nursing Administrators Use of Funds

The funding for adequate staffing and salaries of nurses were consistently mentioned as a central issue. For most participants, feelings of mistreatment, stress, and trustworthiness of hospital administrators was deficient. One self-reported nurse commented on how her place of employment in an area with poverty and her observations of an understaffed hospital would not fare well with the Covid-19 virus:

> If the coronavirus hits my local area, my hospital is done for. My hospital was taken over by corporate greed that could care less about people. Nurses are consistently verbally abused by patients for excessive wait times that isn't their fault. It can take as much as 12

> hours or more to see a doctor … The CEOs [chief executive officer] misuse funds and treat us like garbage. The place is PACKED with patients during flu season and it's impossible to move fast enough when there isn't enough staff or beds. Homeless people sleep in the waiting rooms because it's cold out. This hospital cannot handle a pandemic, it can't handle anything. Areas in high poverty like mine will be hit hardest should this become as big as it already has elsewhere. And nurses will be on the front lines, with little thanks, like always.

The following quotation also condenses the essence of the sentiment held during the infancy of the pandemic. One of the self-identified nurses stated: "rest assured, however, that the suits are still earning their ungodly high salary and sleeping soundly in their penthouses". Another participant working in a hospital described the allocation of incentives and actions of management as being somewhat inconsistent with their words. This was evidenced by the following statement:

> Our hospital has a big sign that says "Heroes work here" outside one of our entrances. But when it came time a few months ago to reward us for going a month without a fall, CAUTI [catheter-associated urinary tract infections] or CLABSI [central line-associated blood stream infections] with a pizza party, they ordered 4 medium pizzas for 25 people. That comes to 1.28 medium slices per person. When some people complained that not enough food was ordered, management responded "It's a pizza party, not a pizza meal." Actions speak louder than words. You can call us "heroes" all you want, but when you shit on us with your pathetic 4 pizzas for an entire staff of 25 when we meet our goals, we know how you really view us. We're not heroes to you. We're expendable pawns.

Considerations for Nurse's Health and Safety

The ability of hospitals and other health care organizations to protect nurses at the beginning of the pandemic were described in detail by self-identified nurses on the nursing SubReddit. One nurse commented: “since everyone is using masks, our hospital now requires us to use ONE MASK/day per isolation room... might as well not use one in the first place”. Another self-identified nurse explained the emergent policies about personal protective equipment preservation devised by hospital administrators, “the ones in their ivory tower”, in the following comment:

> Every day at work this week has been more and more depressing as they (the ones in their ivory tower) count each mask, gown, face shield, etc. And then they tell us to break infection control protocols and use the same set for the entire shift, going into different rooms. And when we ask about bringing in our own supplies they tell us at this point we are not permitted to … They cut some new peoples orientation short to have more bodies on the floor. They have made it blatantly obvious that they DO NOT care about our health and safety…

Participants shared their insights that the decisions made by management were ultimately a reflection of unethical plans affecting the nurses’ health and safety. Another self-identified nurse indicated that they were concerned of the outcomes of inadequate personal protection if the nurses were exposed to Covid-19:

> … it’s a direct reflection of their ability to protect their workers and they haven’t done a great job of that so far. They are killing us with their irresponsibility and unethical practices. Who will take care of the masses of sick people when all of the healthcare workers are too sick to work or dead? That’s a very terrifying reality most don’t want to think about…

Consistently throughout the SubReddit threads, respondents recounted that the standard of the infection prevention and control were not upheld by hospital officials. For instance, one participant nurse reported inconsistencies in staff awareness to infection control and the presence of defective negative pressure rooms:

> Daily e-mail updates on policies, multiple info sessions, disaster roster + [and] separate area for COV 19 patient triaging +/- [with or without] assessment during weekday 9-5 hrs. Whereas in ED - nothing's been done lol [laugh out loud] staff awareness is especially low...The negative pressure room is not even fixed. So we fuked fam.

Other self-identified nurses questioned their organization's level of credibility or commitment toward supporting the personal protection of frontline nurses, and institutional actions taken to reduce exposure to Covid-19. For instance, one nurse participant highlighted the exposure risk in their hospital in the face of their hospital's ambiguous infection control recommendations:

> We received some information on hospital policy. I work in the ER so I assume it's going to be like the flu where we don PPE when we can, but half the time we'll spend extended time alone in an enclosed room with someone in the ER for "fatigue" and they're going to finally say "oh, and btw I'm pretty sure I have coronavirus," or "can my non-patient visitor here have a blanket, now that they've been in here 2 hours with no mask after walking past all the warning signs they probably have coronavirus and are cold".

Participants often shared disapproving and often explicit expressions of emotion about hospital administration by using profanity. One nurse indicated they were put in a position where they may need to become a "whistle-blower" due to the lack of emergency preparedness and preparations undertaken by their respective employer:

> There is no transparency. I work for one of the largest hospital systems in the country and a top 10 hospital and it's a disgrace how they are handling this. Part of me honestly wouldn't mind being a whistleblower if shit really hits the fan … I didn't sign up for this. I will do my part, as long I have proper PPE, but fuck management for refusing to hire more nurses to line their salaries. Fuck hospital CEOs for not having a disaster plan in place. Fuck the American public for buying out all the masks and shorting the hospitals. Fuck the US government for not capping what the general public is buying. Fuck for-profit healthcare and fuck the coronavirus.

A self-identified Canadian nurse shared similar sentiments in response to the post above, stating: "wow. This is pathetic. We in Canada aren't much better off either. We call ourselves a first-world nation and bail out massive industries with billions of dollars, yet can't get actually protective equipment to front line staff? Fuck off...".

Emergency Preparedness in Response to the Pandemic

Three subcategories were identified as related to emergency preparedness during Covid-19. These included: (a) PPE reserves and distribution; (b) storage of personal protective equipment; and, (c) hospital infrastructure and patient capacity.

PPE Reserves and Distribution

Throughout the data, self-identified nurses verbalized beliefs that health care and hospitals administrators lacked the adequate knowledge of emergency preparedness and safety procedures to fully support nursing practice at the outset of the Covid-19 pandemic. Concerns

regarding the lack of sufficient safety protocols and protective equipment was mentioned throughout the data. One nurse participant denoted:

> …Perhaps supply will still be an issue but hopefully guidelines will motivate our admin to work harder to advocate for supplies since they will be legally liable and not just following dumbed downed unsafe recommendations…

Stockpiling and distributing protective equipment was commonly an identified deficiency. For example, one participant nurse shared:

> I have to fire off an email to my manager/our materials peeps cause they haven't stocked the N95s I'm fitted for in our ER (had to steal a few from ICU to use). It was a struggle to even get the Latex free sterile gloves in my size so I'm sure this will be fun.

Further, participants described emergent and reactive policy development, which was sometimes contradictory to past instructions or presented as an afterthought:

> First they say everything is fine. No rationing needed. Then they say we should lock masks and gloves up. Next they want us to reuse masks. Two visitors max, then one now none. Now we have to document what, when, where, why and how many of the PPE [personal protective equipment] we use for each PT [patient]. Cafeteria is closed and you can only enter through one door. All of these came out within 3 days of each other. It seems so uncontrolled and reactionary. I don’t know if this is just my hospital or what but honestly I expected a far better response than this.

Some participants also referenced the past 2003 SARS pandemic and highlighted their frustration that organizations did not learn from these experiences regarding the importance of stockpiling PPE for future events:

> Hospitals have been cutting corners for years, and when they should have been listening to calls for action. There have been warnings about the potential for a pandemic since SARS. Supplies clearly weren't stockpiled in the necessary volumes, especially when you consider China as an integral player in the supply chain. It's not going to be good for the RN.

Storage of Personal Protective Equipment

Nurse participants stated a variety of experiences regarding the storage of PPE, especially as supplies became rationed or contested. One participant described their manager locking up PPE to prevent its theft, but unintentionally increasing the difficulty of the nursing role due to the restricted access to this equipment:

> Anyone else's hospital locking up the masks while people panic over the Coronavirus? Our management has locked up all masks, we now need to contact stores when we need them. People (not clear if it was family members, patients, or staff) were stealing masks from our storage areas last week, so now they've made it a pain for us to safely do our jobs.

Several other nurse participants also mirrored comments regarding the physical securing of PPE by managers, commonly within their offices:

> My ED is locking masks d/t shortage and coronavirus shenanigans We can only give them out to people with a fever and cough. They're not letting staff wear masks at all now. Masks will be locked up in the manager's office…Refusal to supply necessary PPE is a serious offense.

One nurse expressed a sense of incredulity by highlighting the perceived negative effect that restricted access to PPE would have on role performance and patient outcomes. The participant shared that constrained access to masks would produce interprofessional conflict and would be unsafe for emergent procedures in critical care settings:

> We couldn't function without easy access to surgical masks. Contact rooms, bedside surgeries, daily sterile procedures with two nurses on nearly every patient, etc. I'm also pretty sure our big-deal medical director would hit the fucking roof if he needed to do an arterial thrombectomy or something on an ECMO [extracorporeal membrane oxygenation] circuit and he didn't have instant access to his preferred mask. We often have minutes to prep for things like "okay, time to put in umbilical lines!" so this would not fly for us.

While restricted access and secured storage of PPE was commonly viewed in a negative light, one self-identified nurse suggested the use of a Pyxis-like solution (i.e., Pyxis is a commonly used automated medication dispensing system found in many health care organizations) to help securely store and track the distribution of protective equipment:

> I wonder if storing them in your Pyxis (or equivalent) would be a viable option. It would be easier to keep track of how many were used for care toward each patient and would keep them away from the public if that's their concern. They would also be able to track who took out what if they're countable.

Hospital Infrastructure and Patient Capacity

Throughout much of the discussion, participants analyzed the infrastructure of their respective health care organizations, commonly foreshadowing the lack of availability of suitable

isolation rooms (i.e., negative pressure room) to house the increasing volumes of infected patients. Further, some participants also forecast the potential for over-census patient flow, which they suggested would result in the inability to respond accordingly. The following excerpts highlight the emergent hospital infrastructure and patient capacity challenges from two self-identified nurses:

> I've been paying close attention now for a few weeks. Things have definitely shifted for the worse, we thought we could contain it at first and that ship has sailed. I think in addition to the high mortality rate, I'm mostly nervous about our hospitals not being able to keep up w the volume of hospitalized patients. The next few weeks will tell us a lot more.

> Can confirm, also work in ER. All I've been told is that we'll put them in one of the two or three negative air flow rooms, and anyone entering will wear a n95 and other PPE. But what happens when we get more patients than negative air flow rooms, which appears to be likely? …

Shared Experiences

Self-identified nurses on Reddit interacted with other self-identified nurses by discussing their shared experiences. Three subcategories were identified as related to the shared experience during Covid-19. The sub-categories discussed under the category of shared experiences are: (a) clinical management; (b) negation of duty; and, (c) challenges.

Clinical Management

The clinical management of patients infected with Covid-19 was a central topic of discussion amongst self-identified nurses. Nurses were compelled to seek experiential knowledge of aspects of Covid-19 nursing care online. The following quotation summarizes the feelings of uncertainty during the early phases of the pandemic:

> I've never seen our vents pull the stuff I've seen on the Covid-19 ICU [intensive care unit] I'm now on. I'll see patients on paralytics maxed out on all the sedatives doing absolutely fine all night and then suddenly the vent says the patient isn't pulling any volume at all but still saturating 100%. OR they'll be fine all night and then suddenly no volume + desaturation and we end up having to exchange the ETT [endotracheal tube]. Again they are paralyzed/heavily sedated and have not been turned or moved, just happens out of nowhere. Most of our patients that have been there have had their ETT changed out at least twice and just wondering if anyone has been having the same issue/has a rationale for this?

As nurses gained more experience caring for infected patients, one self-identified intensive care nurse provided their insights regarding the two potential case presentations of Covid-19 observed from practice: (a) asymptomatic progression; and, (b) rapid clinical deterioration:

> I have seen basically two clinical Covid-19 presentations: Scenario 1: T=99 [temperature] point nothing, we test, they come back positive, they move to the Covid-19 floor, have not further fevers, and complain ad infinitum about not feeling ill, this isn't fair, they're not sick, they want to smoke, this is violating their rights … Scenario 2: T=99 point nothing, then 97ish and totally stable, we test and wait, and then BAM the next morning T=102-104 … RR=40+ [respiratory rate], SPB<=90 [systolic blood pressure], diaphoretic, delirious, grey, septic, O2 [oxygen saturation] 88% on 15 LPM [litres per

> minute] NRB [non re-breather mask] (I have found this to be the magic number on NRB) and usually a massive coffee ground emesis on the side, after they get to the ED [emergency department] if they make it that far... have you had a similar experience?... Talk to me. This is so traumatic. I have never seen people get this sick so quickly in my career.

The severe clinical presentations of Covid-19 disease were presented. Participants commonly described the rapid deterioration of Covid-19 positive patients on mechanical ventilation as one of the primary challenges faced at work. Several discussions explored the insidious nature of the pandemic. For example, one self-identified intensive care nurse participant shared:

> I work in a cardiothoracic ICU and we had 4 patients with "the flu" in my unit that needed to be intubated the month prior to reports that Covid-19 is in the US… I work in a cardiac intensive care unit, and last year we had maybe 1-2 during the entire flu season. This struck me as super weird because two people came from the same living facility…my other patients have such severe onset of chills and fever, very sudden…this was early last month, so Covid wasn't even on our radar.

One participant inquired if other nurses had similar experiences of challenging clinical presentations related to ventilator care and how they managed it. This self-identified cardiac nurse inquired if other were frequently changing endo-tracheal tubes for Covid-19 positive patients on ventilators:

> …happened to me. also maxed on everything. was about to get into the room to clean when it occurred. patient was doing really good at the beginning of the shift just chilling and then 5 am hits... most of our patients also have had the tube exchanged at least twice. no rationale has been provided. they just said they need more sedation.

Open communication about the morbidity, mortality, and pharmacological and respiratory management were reported by nurse participants, commonly in both exacting and vivid fashions:

> We get sick ones. Our mortality is about 100% in ICU, about 60% on regular floor … people present, slight fever, no respiratory distress however 68-88% on room air. Neutropenia… Day 0 with us become hypotensive. If not, than day 10-14 on the floors hypotensive. Placed on levophed drip, after one day of that they get tubed, after been tubed 8-12 hours usually death. most go into mods [multiple organ dysfunction syndrome]. If extubated most are brain dead...

Related to the critical care of patients in intensive care units, nurses reported respiratory system findings, laboratory values, and cardiovascular management of critically ill Covid-19 patients. Many participants shared their experiences with ventilators, including their clinical indication and eventual related patient outcome:

> Lung sounds are pretty similar, just very diminished, x rays are like a whiteout.… elevated d dimers and coags, if WBC's [white blood cells] are also elevated they will give steroids to help with the cytokine storms. A lot of BP [blood pressure] issues requiring pressers but also a decent amount requiring paralytics when vented due to bucking the vents while coughing and some loss of plasticity. Then comes the multi organ failure usually starting with the kidneys. More lasix drips then I've seen in a while.

Discussions regarding the clinical presentation and progression of Covid-19 also resulted in the nurses sharing their personal recommendations to improve patient outcomes and reduce mortality. One self-reported ICU nurse offered directed advice others, as related ensuring patients were placed in a prone position to improve perfusion:

> …We get some out of the ICU but not many. Between the two Covid-19 ICU's we got 5 on ECMO [extracorporeal membrane oxygenation]. Those guys are a mess. CRRT is a pain as well due to the coagulation issues. Stay safe out there friends, it's a strange new world we are working in with a lot of upside down rules. Keep those drips going and don't forget to prone your patients…

Negation of Duty

Within the SubReddit discussion, participants commonly grappled with considerations related to negating and refusing their nursing duties. Discussion of taking sick leaves, unpaid vacations, and quitting were spread throughout many posts. One participant reinforced this sentiment by stating: “I have already given my notice and I'm leaving at the end of the month.” Another self-identified nurse openly debated the pros and cons of being absent for their shift, due to fears of infection and their personal immunocompromised health status:

> I’m already debating this [quitting] and I work med-psych, not even normal floor nursing. I’m immunocompromised and have a history of heart problems (thanks, genetics). I feel like I’m playing Russian Roulette.

Others were more direct in their future plans, advising that others considering "quit[ing]" take appropriate actions to avoid being accused of role or patient abandonment:

> Just quit, that’s what I’m planning to do. Just have to make sure it’s before you arrive to the unit or else you can get accused of abandonment.

Other less extreme measures were also discussed, including taking time off from the role to ensure personal health and wellbeing:

> Never feel bad for calling off. Ever. It is the hospital's job to staff appropriately, even in a pandemic. The workers at my hospital are sick and tired of floating to medical units as well and will often call off and I support them. It is bullshit and you're already doing more than enough to help out. Take care of yourself first.

While there were numerous comments from participants discussing resignation and other leave options, some participants described how they planned to continuing working due to either feelings of duty or personal protective factors:

> "No. It's literally our job. I wish people would stop fucking coughing on me tho [though]."
>
> "I'll continue to work. No children at home. No reason not to."
>
> "I'm young and healthy. I'm not gonna die from a respiratory virus. I'm more likely to get my clock cleaned by a psych patient on my next shift than I am to die of coronavirus."

Challenges

In this sub-category, self-identified nurses described various challenges associated with managing care during the initial phases of the pandemic, including two common experiences: (a) unrealistic patient expectations; and, (b) racism.

Unrealistic Patient Expectations

Participants faced challenges when providing face-to-face nursing care to patients under Covid-19 isolation precautions. Nurses said that these care expectations from patients created imperceptible tensions in the nurse-client relationship. One nurse participant reinforced this perspective by stating:

> Even during a worldwide pandemic of historical proportions, patients still think they're in a hotel. My floor is almost 100% Covid-19 positive or rule out now. We are doing the whole mask/gown/gloves/face shield thing. So every time you go in a room you have to take your assigned N95 and face shield out of your baggie, gown up, go in the room, then take everything off again and put it back in the baggie, including the Covid-19 + [positive] ones, are still hitting their call bells constantly for things like cold water and so on. You explain that we are bundling care and they just hit the bell five minutes later. Even during a worldwide crisis that may very well kill you, people still expect to be catered to.

Another nurse caring for the Covid-19 patients reported that they also struggled in keeping patients satisfied with delayed call bell responses for non-emergent care considerations:

> Tell them no. Nobody ever died from hearing the word no. Say “I’ll bring that to you the next time I come into your room. Because of the pandemic we have to keep everybody safe.” If it’s not an emergency it can wait.

One nurse participant reported that they faced the same struggle, and took this as an opportunity to educate patients about why delays were being experienced:

> We have been having patients call us and we've also been calling in and checking on them/their needs before we go in. We've made it a point to say, "for our safety and PPE stocks, we can't go in more than absolutely necessary, but we still want to make sure you're as comfortable… On the whole, they've been great and VERY patient with us and all our new rules and garb.

Racism

Participants share stories of race-based prejudice experienced when working during the early phases of the pandemic. Participants describe how they observed both subtle and overt anti-Asian sentiments from the public even before even before the Covid-19 had reached pandemic proportions in March 2020. As described by one participant:

> Wayyy beginning of Covid-19, like, not a single positive yet in my state or any state around me, a lady came in because she tried on a dress at a store with a "Made in China" tag. An hour later she coughed a single time. We confirmed multiple times that it was a single cough. Just the one. She signed in to be tested for Covid-19…

Nurses also describe how racism was unmasked by the pandemic. According to one participant, they observed racism in practice as evidenced by the following comment:

> Ahhhhahahah! A single cough. Similar experience in early Feb before national pandemic concerns were high: Lady brought in an asymptotic family of five for Covid testing cuz they “eat a lot of Chinese food”.

Nursing Students and New Graduate Nurses

Two major categories emerged after analysis, including detailed discussions examining: (a) nursing students currently enrolled in education; and, (b) new graduate nurses.

Nursing Students Currently Enrolled in Education

Self-identified nursing students engaged in dialogue to discuss cancelled nursing clinicals and challenges they faced as a student. One self-identified student nurse voiced, “Ontario here, our placements just got shut down. I had 9 shifts left in my nursing education.... and since I’ve been in hospital my LTC [long term care] work won’t let me come back yet.”. Nursing student

participants had trouble gathering mandatory nursing clinical hours. This directly impacted their ability to graduate nursing school on time. A nursing student expressed:

> Our clinical rotations got shut down at 7pm tonight… we are supposed to be allowed to complete our precepting hours as scheduled … which would mean half my class would graduate and half wouldn't. I have 8.5 shifts left and we're being told they have no idea what's going to happen and it's frustrating…Best of luck to you brothers and sisters out there. We're really in it for the long haul it seems…

Nursing students in their senior or final-year placements described that the culmination of four years of academic work to achieve high-quality, consolidation placements, ended abruptly and in an anticlimactic fashion. For example, one participant acknowledged the discontentment from cancelled clinical:

> As a student who was supposed to graduate in May, I feel this. I busted my ass and got a coveted ED internship and after only completing 150 hours it was cancelled. I get why, but damn am I bummed…

Undergraduate nursing students almost unanimously expressed their feelings that they had been unfairly withheld or shortchanged from the clinical hours that would have prepared them to enter the nursing workforce:

> Definitely a struggle out here too. Been working part time. The program outlook is increasingly uncertain … Hope everything works out for the best…
>
> I feel you, I had 9 shifts left in my final semester … waiting to hear if there is some other way to complete my hours.

While many self-identified nursing students also expressed disappointment about missing clinical hours due to the pandemic, others described the loss of clinical hours and education time as leaving them unprepared to function as practicing nurses in the immediate future:

> if shit hits the fan they might fast track licensing for soon-to-be graduate nurses and that thought scares the shit out of me… I'd be less than 60 days from graduating and still wouldn't feel like I'm ready. Let alone now that we have no clue what's going on and are suddenly trying to shift everything online with new programs.

Other self-identified nursing student participants echoed counterparts' fears regarding the future, with statements such as: "I'm definitely freaked out" and "it freaks me out as a future RN".

New Graduate Nurses

New graduate nurses were also present within the thread conversations. One self-identified new graduate nurse declared their Covid-19 pandemic experience in the following quote:

> …Now we're in the middle of a pandemic, where we're getting an influx of patients in severe respiratory distress … I'm just worried I'm going to unintentionally hurt someone all the time. Just in general, I feel like I'm in way over my head. I'm not sure if feeling like this is normal; I know that I'm a new grad and still finding my niche and learning, but just wondering if anyone else feels as anxious and scared as me, or if I should consider working in a different setting for the sake of my mental health. Just wanna [want to] know if it'll get any better.

Commonly, new graduate nurse participants described they felt they were introduced into the profession rather abruptly, and experienced significant levels of uncertainty regarding their rapid transition from learner to autonomous nurse:

> Nothing like a nice new coronavirus to get you out of your training wheels quicker. I'm a new nurse working in a newly designated area for Covid-19 patients. I just don't know what to think when people thank me. I'm just going to work ….All of this happened so quickly- one day I was a new nurse training and the next I'm being shown how to wear a PAPR [powered air purifying respirators] and being told to conserve supplies due to the nations shortage. I'm just feeling overwhelmed working around it, hearing about it, being asked about it, reading about it. The unknown of the future of it all just gets me. What an odd time it is in the world right now. Wash your hands and stay safe everybody! We will get through this! new nurse who is out really out here y'all.

Another participant vividly described their experiences and fears as a new nurse, with reference to a deterioration of their mental health:

> New nurse during a pandemic on a step-down ICU. And I'm beyond done … I swear that this job is going to kill me. That it's shaving years off my life. I had a whole thing here explaining symptoms, objective proof, everything that's going on, but whatever. I called my Charge (god bless her soul for putting up with me during this time) having a total break. My mental state has gone so far off the rails that it's physically affecting me to the point of debilitation. Without even asking my manager gave me the 3 days off in a row I had scheduled. These days were supposed to be my first 3 days off orientation, so I'd be all on my own. I'm that new. I have no idea how to handle this stress. I cannot explain to anyone through text just how much this is tearing me apart, how haunting it is to deal

> with things that are being covered up or tossed to the side, getting ripped into by stressed out ICU nurses venting onto someone (god bless their overworked souls but it still sucks), or being in constant pain from an auto-immune condition that attacks when you're stressed. I'm ready to quit… I have no idea what to do. I am absolutely mortified because I have to go back Thursday and it'll be my first day off orientation. I'm going to get a full patient load when I could barely handle one WITH help. This Covid-19 mess has you going through an unnecessary 20+ steps for care and I HATE it. The point - How in the world am I supposed to cope with this job and return back to work without having a complete mental breakdown? …. My heart rate has shot as high as 140 just thinking about going back. Chest pain. No sleep. I can't deal. This job is going to kill me if I don't figure something out. I can't go back to work without a solution. I've lost all faith in myself being able to do this job even though all the veterans around me think I'm capable and ready.

Along with fears and uncertainty, new or soon-to-be graduated nurses seeking employment shared a common desire to obtain more information regarding employment opportunities and how employers were managing their Covid-19 safety protocols and staff onboarding:

> I'll be graduating from nursing school in May, and since this whole pandemic has turned the world upside down, I'm wondering how the job prospects look like, how the hiring process is, and orientation/on boarding process is under Covid-19 restrictions/precautions at your hospital. Would love any info/stories about what to expect starting as a new grad under these circumstances, thanks!

> So I have a decision to accept a RN [registered nurse] job position in a med/surg telemetry unit for night shift. Right now the unit is an inpatient Covid-19 unit and I would be trained for approximately 6 weeks. Is their any advice from someone working in a Covid-19 unit and some things I should be aware of before accepting this job?

Other new graduate nurse participants shared insights regarding asking about organizational Covid-19 safety protocols during interviews with potential employers:

> I wouldn't ask it formally [about Covid-19 protocols]. Try to work it I to the conversation to get the answer as many interviewers would let their guard down and talk about it openly. It's also good to read up on the news and be informed about regional policies (ie work that in too). Work something in about how your family is coping. Then ask about staffing. Example: "How are you guys doing with the coronavirus? I've been reading that people are trying to hoard the masks. My family and I are just washing our hands.

Another participant held an opposing view and encouraged new graduate nurses to directly ask the interviewer questions about Covid-19 safety protocols at the respective organization: "That is a totally reasonable question. You do want to know if the hospital is responding to the pandemic and if it is able to supply PPE for its staff".

Coping

Self-identified nurses on Reddit interacted with other self-identified nurses by discussing the coping strategies used during the Covid-19 pandemic:

> I woke my husband up laughing at this article. denied the presence of further magnets up his nose. This is the kind of stuff we need to read about right now, this is hilarious and I love it. Also the guy in the article responded to the post you linked. I'm so tired and

> socially distanced I can't tell if this is actually delightful and hilarious or if I just think it is because I haven't spoken to another human face to face in 3 weeks.

Participants also used humorous images called *memes*, sarcasm, satire and other various types of humor to garner the attention of other self-identified nurses. For example, one of the media images shared was of a popular meme of a female that conveyed displeasure and incredulousness with the corresponding caption: "Coronavirus looking at your Bath and Body Works band sanitizer that's 10% alcohol and 90% glitter." Other nurse participants responded to this initial prompt with: "ROFL" [rolling on the floor laughing].

Further, humor was also described as a method to cope with negative feelings and emotions brought about by the Covid-19 pandemic. As one self-identified nurse reinforced: "Just remember it's [pandemic] only temporary. Our famous dark sense of humor doesn't hurt, either". While humour was used by some participants to cope with the increasing stressors brought by the pandemic, other coping mechanisms were also described by participants, including the increased use of substances such as alcohol:

> Crying occasionally. Drinking more than I would like. I am a guy who works in an area that is not front line. I sent an email to the manager of ER and Medical ICU offering my services. I worked ICU many years ago and don't really want to go back but I feel like I have something to offer. I have been watching YouTube videos on vent management. I feel like it is important to do my part and I hope my children understand that I did what I felt was right.

Others described affixing on hobbies and exercise as viable coping mechanisms to combat their daily realities in practice and personal life during the pandemic:

> I am so glad that I get to go to work because I'd go crazy being locked up all day and quarantining. I'm even picking up extra shifts to a) make up for my losses in the stock market and b) get out of the house every day. Destressing by taking the dog on longer walks and riding my Peloton bike more doesn't hurt.

> Last week not so great. I cried like two times at home. Just general anxiety. Mostly simmering down to occasional bouts of it, more in the 'prepare for battle' stage. We'll get through this, one day at a time... The fact that our lives have been completely upturned…Humans are resilient.... And I've been attacking home improvement projects and hobbies with a vengeance.

Gratitude to Nurses

Commonly, self-identified, non-nurse participants joined conversations on the nursing SubReddit to express their gratitude to healthcare workers. For example, one participant voiced:

> It's not the coronavirus that people should be thanking us for... Many of us normies get the hard work you nurses put it trust me. I love nurses … I'd say that it is a job that … requires a lot of emotional strength as well physical endurance … the vast majority of People I know revere nurses, may even love them… Covid-19 is a societally wide issue. That's why you're seeing society showing this love... You're the heroes right now, enjoy it :) Love from everyone :).

Other non-nurse participants sought the opinions of nursing SubReddit participants on how they could help frontline providers during the pandemic. For example, one participant questioned:

> …I want to help out nurses/docs in this coronavirus issue. How do I do it? … What is something a stranger could do that would help the situation. Not that I could change anything. Just to thank you for your service?

Others shared stories and positive impacts nurses had made to them during their personal health care journeys:

> Just a "Thanks" for what you guys do … I was scared I had stomach cancer… The four nurses who took care of me kept talking to me. About subjects beyond the four hour lab tests, the vital checks, what have you. They told me about their families, their lives. They asked me about my life, gave me water, spoke so sweetly to me. They were an oasis in a desert of despair. Human contact was so important for my mental health. They basically kept my mind off of what was going on in my body. It was the sweetest, best feeling I had had in weeks. My nurses and I laughed about so much - and the stories I heard were not only inspiring, but palliative… I just want to thank you all for being a steadying force during a terrifying time in my life. We all say "our frontline workers deserve a raise" when we consider them in the context of Covid-19. I submit nurses should get a raise for being such a compassionate, loving, and *human* touch in a sea of terrifying news.

Finally, other members of the multidisciplinary team, such as medical students reported using the SubReddit for advice, insight, and to provide gratitude. One self-identified medical student posted:

> I'm a medical student …. r/Nursing is probably my favourite healthcare SubReddit. It is genuinely hilarious and also a source of excellent advice and insight. After reading about the ludicrous amount of bullshit you guys have to put up with, I now have tremendous respect for you guys and a better appreciation of the importance of your role in, to borrow

a phrase from the MBAs in administration, the healthcare ecosystem ... be safe out there! Can't wait for things to return to the closest to normal a nurse can experience!...

Discussion

While numerous content categories were generated in this study, some of the categories warrant deeper analysis and discussion due to their contemporary relevancy to the pandemic and nursing practice. To do this, a discussion of four salient content categories will be undertaken, including: (a) *employers' approaches to the pandemic*, (b) *emergency preparedness in response to the pandemic*, (c) *shared experiences*, and, (d) *nursing students and new graduate nurses*.

Employers' Approaches to The Pandemic

The study found that self-identified nurses did not feel that healthcare leaders provided timely and accurate information to nurses about the Covid-19 pandemic. The findings also acknowledged that nurses felt that their needs for education and policy clarification were ineffectually handled by management. The Canadian Nurses Association (CNA) (2007) provided a series of recommendations for the mitigation, preparation, response, and recovery during emergencies. The recommendations state that non-governmental organizations (NGOs) such as hospitals have the responsibility to communicate to groups such as nurses (CNA, 2007). Furthermore, the CNA (2007) believes that health organizations should communicate to healthcare providers their roles and responsibilities during emergencies. It is important to consider the pressures placed on hospital administration under extraneous circumstances such as a pandemic. However, organizational administrators have the responsibility to address crises and ensure the organizational communication enable nurses to reach their goals (Tagliacozzo,

Albrecht, & Ganapati, 2021). Competing messages from leadership during a crisis can disrupt collaborative communication (Tagliacozzo et al., 2021). Therefore, it is important that health professionals anticipate developing emergency plans and link these to provincial plans (CNA, 2007).

The findings of this study also provide naturalistic observations related to the perspectives of nurses during the initial phases of the Covid-19 pandemic, including interpretations of nurses' health and safety. Participants complained about how more attention should have been paid to providing nurses with PPE. Nurses reported that PPE misuse that made them feel unsafe at work. PPE misuse includes reusing masks and gloves and wearing masks for more than six hours (Battista et al., 2020). According to the CNA (2007), health organizations must protect the health of employees and their families by providing protective equipment. Providing protective equipment also includes implementing health and safety procedures that can handle increased demands for PPE (CNA, 2007). It is important to keep healthcare employees safe because the risk of infection creates emotional distress and fear. Ensuring safe working conditions and considering employee’s well-being directly leads to enhanced organization during emergencies (Battista et al., 2020).

Emergency Preparedness in Response to the Pandemic

PPE is a barrier used against the Covid-19 virus dissemination and improves occupational health and safety by promoting staff health (Vordos et al., 2020). Self-identified nurses in this study described a lack of PPE. This was echoed by Vordos et al. (2020), which found many healthcare professionals used social media to express the lack of PPE. To ensure safe work environments, a consistent supply of PPE services should be available. This can guide future

planning for PPE supply relating to the current experiences of nurses. When excessive stresses are placed on healthcare, material resources may be diminished placing nurses and other health-care providers at risk (CNA, 2017). The dialogue among nurses suggested that stockpiling and distributing protective equipment was an identified deficiency in the healthcare systems response to the Covid-19 pandemic. For example, Canada lacked preparedness in maintaining reserves of PPE under Canada's National Emergency Stockpile System (NESS), upon which healthcare organizations could fall back on when a sudden increase in demand occur (Laing & Westervelt, 2020). However, the NESS strategy (Laing & Westervelt, 2020) was challenging as emergency supplies were costly and generated material waste. A more effective approach could be to invest in primary PPE merchants to procure and distribute healthcare supplies while simultaneously maintaining a stockpile for potential emergency situations (Feinmann, 2020). Therefore, it can be suggested that healthcare funding could go towards investing and building resilience for global PPE suppliers (Feinmann, 2020). The value in investing in global suppliers is preferred over investing in less experienced and less stable domestic suppliers (Feinmann, 2020). Investing in PPE supply chains is supported by the CNA (2007) which encourages NGO's to adopt preventative policies even in the in the absence of scientific conviction to protect vulnerable groups. The CNA (2017) Code of Ethics reinforces this viewpoint, as it states that nurses' employers have the onus to protect and support nurses as well as provide the protective equipment and supplies to maximally decrease infection risk (CNA, 2017).

The findings of this study also provided insight toward health care organization's physical readiness for the Covid-19 pandemic. Participants shared skepticism about the availability of negative pressure rooms. This is important because effective hospital climate control systems prevent the spread of airborne particles (Al-Benna, 2021). Participants spoke at length about

their dissatisfaction with the emergency preparedness plan for patient capacity challenges. As a result, self-identified nurses reported feeling impacted in their ability to perform nursing duties safely. Conversely, self-reported nurses also shared feeling professionally obligated to continue working because it was their ethical duty to do so. Covid-19 heightened the importance that hospitals be prepared to handle emergency influxes of patients with communicable disease. This is important because healthcare providers such as nurses, as well as patients, are at a high risk of contracting airborne pathogens (Al-Benna, 2021).

Kim et al., (2021) found that reduced access to PPE was associated with both increased risk of contracting Covid-19 disease as well as prolonged and severe Covid-19 disease in health care workers, such as nurses. Self-identified nurses were acutely aware of these risks. As such, the directives to store PPE in administrators' offices may have impacted nurse participants' trust in the employer. Therefore, the discourse emerged from this study surrounding timely access to PPE reinforced the brittleness of emergency preparedness procedures and as well as the dire state of stockpiles of PPE in many clinical and practice areas where nurses work.

Shared Experiences

The findings in this category provided a description of nurses' experiences managing critically ill Covid-19 patients in intensive care settings. Participants sought experiential knowledge about mechanical ventilation, asymptomatic progression, and the rapid clinical deterioration of patients with Covid-19. Most self-identified nurse participants described the respiratory instability in detail, the sudden nature of oxygen desaturation, pyrexia, hypotension, and organ failure. Nurses also compared their head-to-toe assessment findings. Participants offered personal recommendations to improve patient outcomes, such as *proning*, the act of

placing a patient on their stomach. Nurses sought advice from others to further their knowledge of the diagnostic criteria of severe Covid-19 disease. It can be concluded that the participants were likely seeking diagnostic clarity from other healthcare workers for personal safety, curiosity, or medical management. This suggests that Covid-19 morbidity and mortality could have been reduced by facilitating formal educational opportunities for healthcare staff. Ion et al. (2021) explored how international nurse leaders directly responsible for faculty staff education and well-being described their educational development plan as crisis driven innovation. These leaders described that having the ability to plan for the pandemic ahead of time would have been extraordinary but unrealistic (Ion et al., 2021). In planning for future pandemics, nurse leaders must reflect on existing weaknesses in nursing education, practice, and research (Castro-Sánchez et al., 2021). Castro-Sánchez et al. (2021) suggest future education could focus on updated staffing models and redeployment models. Part of the redeployment model could be education focused on transferring and mobilizing nurses from various settings into acute care settings, thus education would be focused on principles of critical care. Other ideal educational opportunities for nursing staff could be multimodal initiatives improve infection control behaviour (Castro-Sánchez et al., 2021). Participants also required opportunities to voice clinical questions aloud to colleagues and discuss their concerns openly. This suggests that educational opportunities outlined above about could provide periods dedicated to discussion and moderated by critical care physicians and nurses. Opportunities to debate, share and discuss Covid-19 related queries could be supplemented with a national or organizational online forums with dedicated health experts to collaborate with. As highlighted by the Covid-19 pandemic, it is fundamental that nurses translate their clinical expertise into professional knowledge for future experiences

(Razieh et al., 2018) and have opportunity and appropriate platforms to share this knowledge with their colleagues.

The potential for negation of duty was an important finding that emerged from this study. The various narratives of nurses and their rationale for considering abandoning or pausing their nursing positions are important considerations for both policy and practice. As the CNA Code of Ethics (2017) states, nurses have the professional obligation or duty to provide ethical, safe and competent nursing care with limited exceptions (CNA, 2017). One of the exceptions to withdrawing or refusing nursing care are circumstances in which nurses are faced with unreasonable burden (CNA, 2017). The CNA (2017) defines an unreasonable burden of nursing care as a disruption in nurse's abilities to provide safe care when compromised by a lack of resources, threats to personal safety and family well-being and unreasonable expectations. Murat et al., (2021) has suggested that nurses were psychosocially affected by the intensity and uncertainty of the Covid-19 pandemic. Refusing unreasonable burdens of nursing care was observed when participants endorsed refusing patient assignments to protect their safety and well-being. Galanis et al. (2021) found that working in high-risk settings and heavy workloads were significant risk factors for nurse burnout. Participants define a central reason for negating their nursing duties was because of insufficiently staffed units. Nurse burnout and attrition in the nursing profession have been shown to contribute to a lack of organizational retention (Smith, Andrusyszyn, & Laschinger, 2010). The shortage of intensive care nurses before the Covid-19 pandemic was already reaching crisis proportions within Canada and globally (McDermid et al., 2020; Sawatzky, Enns, & Legare, 2015). Nurse retention in practice areas, including critical care, is a well-researched topic within the nursing literature (Lobo et al., 2012; McDermid et al., 2020; Schroyer, Zellers & Abraham, 2020). Lartey, Cummings, and Profetto-McGrath (2014) describe

a crucial need to increase retention of highly trained and experienced nurses in critical care settings. Nonetheless, research in this domain was generated during the pre-Covid era. Thus, challenges exacerbated by the Covid-19 pandemic for the nursing profession necessitates further research about nurse burnout in a post-Covid-19 workplace environment.

Nursing Students and New Graduate Nurses

The findings of this study demonstrated that both nursing students and new graduate nurses commonly voiced ideations of anxiety and uncertainty. This discussion is presupposed by the findings that nursing students were: (a) upset about the education system cancelling their nursing clinicals; (b) felt that minimal support was provided during the transition from school to work; and, (c) uncertainties about graduating into a pandemic and related fears.

First, nursing students describe feeling distressed that they had lost opportunities to complete their nursing clinicals and consolidation placements. Clinical placements are an important part of nursing education because they promote the integration of theoretical knowledge into various clinical experiences (Vatansever & Akansel, 2016). High quality nursing clinical experiences directly translate into nursing students' confidence as nurses (Vatansever, & Akansel, 2016). The confidence of novice and new graduate nurses is also an important pre-requisite to safe nursing care as they are the group of nurses that most commonly report feeling doubtful of their assessment, communication, and time management skills in practice (Norris, New, & Hinsberg, 2019). Insecurities regarding clinical competence, fear of making mistakes, and incongruencies with professional interpretations versus realities of nursing practice are all factors that increase the amount of stress that nursing students experience (Drach-Zahavy et al., 2021). Self-identified nursing students also expressed difficulty gathering mandatory nursing

clinical hours to graduate on time. Some of the personal stressors motivating these feelings could include financial and familial pressures (Drach-Zahavy et al., 2021). It is important to consider the disruption that the Covid-19 pandemic had on nursing students' education and acknowledge the impact of this disruption upon the nursing profession.

Secondly, nursing students felt that minimal support was provided during the transition from school to work. New graduate nurses described a desire to obtain more information regarding employment opportunities and how employers were managing their Covid-19 safety protocols. Using a descriptive correlation study, Kuru and Ozturk (2021) found that first and fourth year nursing students experienced the highest levels of anxiety due to factors such as cancellations of graduation ceremonies and finding nursing employment. There is an expectation that new graduate nurses rapidly acclimate to their role from student to registered nurse (Chappell & Richards, 2015). Support in the form of transition programs have been noted to benefit all graduate nurses (Chappell & Richards, 2015). This finding is contrary to the experiences of new graduate nurses included in this dissertation. Future research could explore the consistency of new graduate transition initiative and explore how to include these in future disaster management planning and pandemic preparations.

Third, nursing students discussed uncertainties about graduating into a pandemic and related fears. The new graduate nurse's transcripts analyzed in this study outlined feelings of fear, anxiety, and uncertainty about their ability to provide nursing care during the pandemic. Anxieties for first year students were related to feeling like they had insufficient knowledge, instruction, and support from their peers (Kuru & Ozturk, 2021). Past research conducted by Bahçecioğlu, Özer, and Çiftçi (2021) demonstrated that occupations reach specialist status when the members of the vocation possess strong professional identity. During the initial stages of the

Covid-19 pandemic, it was abundantly clear that nursing students and newly graduated nurses analyzed in this study held qualified feelings regarding the nursing profession, including aspects of their nursing identity and readiness. The educational experiences of nursing students should be explored in a post-Covid-19 world, to improve nursing education and to assist new graduate transition into practice.

Limitations

There are several limitations that need to be highlighted. First, the researcher was unable to identify the demographics of the Redditors. There was no way to definitively determine if participants that views and commented in the nursing SubReddit were, in fact, nurses or nursing students, or other non-nurse participants (beyond their self-disclosure). A second potential limitation of this study was cumbersome process of data coding and analysis method, necessitated due to the data type and structure afforded by Reddit. The coding of the data was complex, due to the inherent structure of Reddit and considerable amounts of data generated on the nursing SubReddit. Thus, the purposeful sampling of specific threads to analysis could be viewed as a limitation. A third key limitation of the study is that the findings are not generalizable beyond this study. Due to the interpretive nature of the study, the findings from this research study do not possess explicit external validity or generalizability to other populations, professions, or contexts. Finally, the researcher was unable to participate in member-checks to clarify if a comment was unclear. Member-checks would involve seeking participants reactions to interpreted findings and discussion (Polit & Beck, 2011, p. 268) to gain a better understanding of the underlying meaning of the text.

Conclusion

The Covid-19 pandemic brought about various challenges to healthcare systems globally. Challenges were met with personal, organizational, and political intervention to protect and support frontline nurses. The nursing SubReddit contained deeply personal and informative content as outlined by the following six principal content category findings: (a) *employers' approaches to the pandemic*; (b) *emergency preparedness in response to the pandemic*; (c) *shared experiences*; (d*) nursing students and new graduate nurses*; (e) *coping*; and, (f) *gratitude to nurses*. While the findings of this study are not generalizable to other contexts or professional situations, the insights generated through the content analysis provides rich descriptions of nurses and students experiences during the early phases of the Covid-19 pandemic, between March and May 2020.

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CHAPTER THREE

Implications and Recommendations

The purpose of this study was to explore what self-identified nurses discussed on the nursing SubReddit during the early phases of the Covid-19 pandemic between March 2020 to May 2020. This research study used a content analysis method to analysis data gathered from the nursing SubReddit (r/nursing) between March 2020 to May 2020. The data was obtained and analyzed in a naturalistic paradigm to capture an unobtrusive view of nurses' experiences during the early phases of the Covid-19 pandemic. Hsieh and Shannon's (2005) summative content analysis was used to subjectively interpret the data through systematic coding and identifying themes. Six content categories were emerged as findings from the data: (a) *employers' approaches to the pandemic*; (b) *emergency preparedness in response to the pandemi*c; (c) *shared experiences*; (d) *nursing students and new graduate nurses*; (e) *coping;* and, (f) *gratitude to nurses*. In this section, the implications arising from the findings of this study will be presented.

First, the findings of this study suggest that nurses felt that policies instituted by health care organizations failed to adequately consider or attend to elements of safety and well-being due to a lack of communication. The overarching deficit of the management-to-nurse response was a lack of consistent and accurate information about organizational emergency preparedness. The CNA (2007) suggests that employers can improve nurses' safety by providing education opportunities related to emergency management. It is also recommended that employers enhance work safety by communicating and disseminating information to nurses in a timely manner (CNA, 2007). It is imperative that healthcare sector employers reduce information inconsistencies with regular communication and updates. The rapid proliferation of

misinformation during Covid was impacted by social media, gaps in health literacy and politics (Russell, 2021; Teovanović et al., 2021). Teovanović et al. (2021) believe that nurse's distrust in institutions was related to variability in pandemic information. Thus, it is imperative that healthcare leaders establish a minimum communication standard for emergency preparedness situations to empower nurses to work safely, feel confident in the information provided, and establish trust. Employers are strategically positioned to combat misinformation using education and censorship of false information (Bronstein & Vinogradov, 2021). Health care professionals in leadership positions are responsible for using evidence to make decisions and develop policy. It is important to understand how health organization leaders can support and foster resilience in the nursing workforce. The findings from this study suggest that leadership focused on communication will improve the quality of management, unify the nursing workforce, and ultimately improve patients' outcomes. Health organizations should learn from the Covid-19 pandemic for future pandemic planning.

Second, data acquired from social media, particularly via Reddit, provided an opportunity to appreciate the stressors and strong emotional reactions felt by nurses throughout the crisis. In this study, self-identified nurses shared all ranges of insights, concerns, and reactions to the Covid-19 pandemic. This is important because Reddit was a useful online platform for self-identified nurses to discuss professional and personal reactions to the Covid-19 pandemic in terms of nursing practice (Cinelli et al., 2020). Information gained from the nursing SubReddit was focused on the pandemic. However, the Reddit platform also became an excellent tool to gain a situational awareness of the current state of nursing affairs and provided a summary of the issues plaguing the profession. As Reddit was used to gain insight into the nursing profession

within this dissertation, it can be potentially used in future research to learn more about the profession, its current insights, and how other nurses around the world react to health events.

Along with nurses sharing their insights, concerns, recommendations and anecdotes, this study also demonstrated the utility of using Reddit data to gain deeper insight into real-time and emergent global nursing considerations. Previously, Reddit data has been used by registered nurses to share ideas and their considerations for care in other contexts (Henninger, 2020; O'Donnell & Guidry, 2020; Thomas et al., 2019). However, this study is the first (of our knowledge) that targeted online nurse engagement in the context of the Covid-19 pandemic for analysis. Future research could be aimed at exploring the online activity of nurses on other related nursing or healthcare Reddit threads during the same time-period to corroborate or add to the existing findings.

Finally, this dissertation demonstrates how the nursing profession, locally and globally, was not prepared for an event such as the Covid-19 pandemic. The nursing professions' lack of preparedness for a major health event was clearly demonstrated in the transcripts. Taken as a collective, this dissertation shows that nurses used informal routes, such as Reddit, to share insights to ultimately influence aspects of patient care (Maben & Bridges, 2020). While the findings from this study are not generalizable, the insights provided from the work speak to a lack of formal digital platforms for nurses to discuss the management of Covid-19, especially in the early phases of the pandemic. The profession lacked robust information exchange and sharing platforms to quickly discuss nursing-sensitive information related to the care and management of Covid-19 patients. Currently, healthcare leaders can use the findings from this dissertation to embrace the technological direction that influences healthcare. Healthcare leadership should continue to acknowledge and incorporate the dominating presence of social

media in healthcare. Nurse leaders have previously acknowledged the power in social media (Moorley & Chinn, 2016). However, this dissertation shows that leaders have yet to streamline the implementation of an official online platform into practice and education. Further work exploring the potential of generating nursing-centric information exchange platforms to quickly share best practices and other nursing-sensitive information for future pandemic or other wide-scale emergent health scenarios should be considered by regional and provincial health authorities.

Conclusion

This dissertation provides the findings of a summative content analysis informed by Hsieh and Shannon (2005) exploring what self-identified nurses discussed on Reddit during the early phases of the Covid-19 pandemic between March 2020 to May 2020. This study and its findings provide insight into what was discussed by nurses and nursing students on the nursing SubReddit in the early months of the Covid-19 pandemic. The study also identified that the communication from nursing employers to nurses needs improvement, that nurses took to Reddit to share experiences and knowledge about Covid-19 clinical management, and how nursing used informal platforms to discuss the pandemic and that these findings could be used to improve future pandemic responses. Further research exploring the nursing role during the Covid-19 pandemic will be important to generate insights to inform policy and practice progression related to future emergency and pandemic responses by the profession. Evolution of the profession will be especially important as Covid-19 is projected to become an endemic illness (as of late 2021), and its true effects on all aspects of future nursing practice, research, and education have yet to be fully realized (Leach et al., 2021).

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Appendix A

Date: 25 August 2020

To: Dr. Richard Booth

Project ID: 116394

Study Title: Reddit and Nursing During Covid-19 Application Type: QA/QI/PE

Applicant Link: https://applywesternrem.uwo.ca/Project/Index/1029233

Dear Dr. Richard Booth,

Thank you for consulting with the Office of Human Research Ethics (OHRE) with regard to the nature of your project.

Based on the information that you have provided, the OHRE has determined that this study is not considered QA/QI but is in fact research. As this project is in the public domain and if individuals to whom the information refers have no reasonable expectation of privacy then REB oversight is NOT required. Privacy expectations may be outlined in the sites' terms of use (TCPS 2, article 2.2).

NOTE: As stated in TCPS2, article 2.2, "When accessing identifiable information in digital sites, such as online groups with restricted membership, the privacy expectation of contributors of these sites is much higher. Research involving information from these types of sources shall be submitted for REB review (article 10.3)."

Please note that in order to conduct your project you may need to seek permissions from other parties such as departmental leaders, your supervisor, the Privacy office, etc.

The OHRE recommends that you manage and mitigate ethical issues, privacy risks, or other concerns that relate to your project. Please note that there should be no references to Western University's REBs in regards to your project as no REB is providing oversight for this project.

If, during the course of this study, there are changes to the project or new information comes to light, which would affect the determination stipulated above, these should be brought to the immediate attention of the OHRE for re-assessment.

Best wishes for the successful completion of your project.

You can log in to WREM to view the history of this study at any time.

If you have any questions about the review of this application or the WesternREM system, please contact our office.

Sincerely,

Office of Human Research Ethics, on behalf of Western University's Research Ethics Boards.

Appendix B

List of Abbreviations

- BP – Blood pressure
- CAUTI – catheter-associated urinary tract infections
- CDC's- Centre For Disease Control
- C. Diff – Clostridium difficile
- CEO – chief executive officer
- CLABSI – central line-associated blood stream infections
- CMV – Cytomegalovirus
- CNA – Canadian Nurses Association
- Covid-19, coronavirus, corona, COVID, SARS-CoV-2 virus are used interchangeably in this dissertation
- ECMO - Extracorporeal membrane oxygenation
- ED/ER- Emergency department / room
- ETT – Endotracheal tube
- EULA – End user licence agreement
- Hep A – Hepatitis A
- HIV – Human immunodeficiency virus
- HSV – Herpes simplex virus
- ICU – Intensive care unit
- LTC – Long term care
- MRSA – Methicillin resistant staphylococcus aureus

- NCLEX – The National Council of State Boards of Nursing Exam
- NESS – Canada's National Emergency Stockpile System
- NGO – Non-governmental organization
- N95 mask – Mask that filters at least 95% of airborne particles
- OHRE – Office of Human Research Ethics
- PPE – Personal protective equipment
- PT – Patient
- REB – Research Ethics Boards
- RN – Registered nurse
- SARS – severe acute respiratory syndrome
- TB – Tuberculosis
- URI – Upper respiratory infection
- VRE – Vancomycin-resistant Enterococcus
- WBC – White blood cells

Curriculum Vitae

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