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Editorial

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Original Research Article

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Letter to Editors

Social stigma towards nurses: Time to refocus on what matters most
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Launched in December 2015, Belitung Nursing Journal (BNJ) is a refereed international publication that provides a venue for the nursing scholarship with an Asian focus and perspectives from the region. We aim to highlight research on nursing science, nursing management, policy, education, and practice in the Asia-Pacific region and Asian communities worldwide to a broad international audience.

BNJ welcomes submissions of original research articles, review articles, concept analysis, perspectives, letter to editors, research methodology papers, study protocol, case studies, and guest editorials on various clinical and professional topics.

We also welcome “negative” results (i.e., studies which do not support a hypothesized difference or association) provided that the design was robust. Discussion papers that elaborate issues and challenges facing health care in one country are welcomed, provided the discussion is grounded in research-based evidence. The authors are addressing a global audience and a local one.

Nurses and midwives write most papers in BNJ, but there are no constraints on authorship as long as articles fit with the expressed aims and scope. BNJ's intended readership includes practicing nurses and midwives in all spheres and at all levels who are committed to advancing practice and professional development based on new knowledge and evidence; managers and senior members of the nursing and midwifery professions; nurse educators and nursing students; and researchers in other disciplines with interest in common issues and inter-disciplinary collaboration.

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Nurse education today: Between teaching and publication focus

Joko Gunawan1,2*, Yupin Aungusuroch3*, and Mary L Fisher3,4

Abstract
“Publish or Perish” is no longer an imagination. On the contrary, it is considered a new reality in nursing education today. All nurse scholars, researchers, faculty members, and students are eager and compete with each other to publish their research works in academic journals. Success in this challenge brings personal benefits, especially for academic reputation and promotion, as well as organizational benefits, such as university ranking and sponsorship. However, despite the advantages of faculty publication, the pros and cons of this topic are on the rise. Therefore, this article aims to discuss the publication-related phenomenon in nursing education, followed by concerns and recommendations for consideration.

Keywords
nursing; education; publication; quality; sustainable development goals

Undoubtedly, in today’s digital era, almost all aspects of our lives are affected by technology. In the majority of cases, this digital technology makes our lives easier or more efficient (Gunn, 2020). For example, in the educational aspect, we can learn online from anywhere. We will no longer be left uninformed for updated knowledge as long as we are connected to the Internet. In addition, it connects students and faculty members around the globe with new opportunities and collaborations. Like the publishing world, theses or dissertations that we could only read in a campus library in the past now can be easily accessed with just one click through Electronic Theses and Dissertations (ETDs) (Gunawan, 2018). Also, electronic newspapers, magazines, and journal articles are available with interactive designs and attractive reading formats. In other words, the technology brings benefits to the readers (with easy access), writers or authors (with broader reach), and publishers (with effective and efficient publishing cost).

But, despite all the benefits of the technology, we certainly need to be able to deal with its consequences, particularly related to data security, cybercrime, privacy, digital media population, work overload, etc. (Gunn, 2020). However, in this very article, we only focus on the impact of digital technology in nursing education, especially regarding “publish-or-perish.”

“Publish or Perish” is not a new concept. It was initially coined by Coolidge (1932) as an attitude or practice existing within academic institutions, whereby researchers are put under pressure to produce journal publications (Rawat & Meena, 2014; Moosa, 2018). This issue is primarily relevant to those working in educational institutions (faculty members, academics, academic researchers, or just researchers) to retain their positions or be deemed successful (Rawat & Meena, 2014; Moosa, 2018).

However, the term under pressure or the notion of “Publish or Perish” creates pros and cons among scholars, and there does not seem to be a consensus. Therefore, this article aims to discuss journal publication, its benefits, and its related concerns and recommendations for consideration.

Publication Benefits
In this section, we describe publication advantages seen from the university level and individual level.

University level
Indeed, faculty and student publications in academic journals bring many benefits to the university. The number

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of publications is a measure of the institution’s research activity and its capability in producing research publications at the international level (Moosa, 2018). Also, it has a significant impact on university rankings, such as QS and Times Higher Education (THE) Rankings. These rankings bring visibility to the university. The rankings are also used for the governments to measure the research excellence of the institution, for a company to select a university as a partner, and for a funding body’s decision to invest in research at a university (Elsevier, 2021). In addition, the university ranking is mostly used as a criterion by parents and students (national and international students) when choosing a university (Elsevier, 2021). Therefore, each university provides tremendous efforts for its faculties to publish more articles to get higher rankings and become a world-class university. They do this mainly by their criteria for promotion and tenure.

Individual level
The impacts of publication on individuals can be seen at the faculty member level and student level. Unquestionably, the academic reputation of a faculty member is highly influenced by their publications today (Rawat & Meena, 2014). Without publication, no one knows our expertise because it is a way of communication among scientists. Publication, however, helps us become known as an expert in our field of the study.

In addition, the quantity and quality of published articles play a major role in faculty academic reputation. The number of articles is used when a tenure track is applied. The faculty member is required, for example, to publish two articles in two years of working experience to get promoted from lecturer to assistant professor position. And the quality of the article is seen from the citation number and the rank of the journal. Usually, to be a professor, each associate professor is required to publish two articles annually in the highest-rank journals. Some may require publications in Q1 Tier 1 journals, a textbook publication, and a number of citations on average, for example, more than 1000 references. Each university has its own criteria.

For students who would like to pursue higher education, the publication is one of the criteria to apply for a PhD program. Publications also help connect the students with scholars worldwide or partners to collaborate in research projects, seminars, conferences, and other educational events (Moosa, 2018). Moreover, many students who have a high number of publications before they graduate can make a working contract with a university or a company. Or, after they graduate, it is easy for them to find a teaching or researcher position. In other words, publishing is a new way of life among faculty members and students nowadays.

Publication Concerns
In this section, we discuss the disadvantages and concerns in the publication.

Publish or Perish
In spite of all the benefits of publication, there are still many universities, including their faculty members, who struggle to follow this requirement. For the university where the “publish or perish” culture does exist, it is not so hard for each faculty to go along because they have the same goal or a sense of purpose towards the university ranking. Publication rewards, mostly in terms of financial bonuses/incentives, are also available for each published article in exchange for the time and efforts the faculty members spend in academic writing and publishing.

In contrast, if a university is just about to begin creating the publication culture, it will be very challenging to compete with others. Many universities are under pressure, and they have been trying to encourage their faculties to conduct research and publish articles. Some universities provide a lot of financial supports and incentives received in the first place to motivate their employees and even offer non-money awards, such as traveling overseas and other rewards. Most public universities usually have funding support from their governments. For example, in Indonesia, the faculty members who publish an article in a Q1 journal will get approximately 3,500 USD or more. Those who get their papers published in Q2-Q4 journals get less than that (Ministry of Research and Technology of the Republic of Indonesia, 2017). Yet, the outcomes are not that significant; some faculties are still stuck and stop writing and publishing. Financial or non-financial awards may not be served as a basis to support faculties to publish articles. This situation also differs in each department or faculty of a university. Some departments have no problem and enjoy extensive financial bonuses because their faculty members support each other to work and publish more articles, while some departments are still trying to publish articles.

In order to reach others’ achievements, many universities, or many departments/faculties try to do other publishing strategies, such as conducting research and publication training, hiring scholars or researchers that focus on research and publication, collaborating with conferences in which submitted articles will be published in indexed proceedings or journals, and using publishing services. Tier-one universities often hire English language editors to assist faculty in their publications. These strategies may be effective in some ways. But the publication passion and culture may not exist among the faculty members.

In the worst scenarios, if those efforts do not bring good outcomes, many just publish articles in “predatory” or “poor quality” journals to reach a certain number of papers required by the university without further investigation as long as the article is published easily and quickly. Some may be aware but not even care, considering the “predatory” journal is defined differently (Grudniewicz et al., 2019). In the end, they are upset after they know that the journals that their articles get published are discontinued from Scopus or Web of Science. Based on data from Elsevier, Indonesian authors publishing in discontinued
journals happens across all subject areas, with a total of 27,082 documents during 2011-2020 (Chen, 2021).

**The Increased Number of Academic Journals**

No doubt, the number of academic journals is highly increased. Between August 2019 and August 2020, Scopus added 3.29 million new records (+4.15%). The current total number of records per August 2020 is 79.8 million (Aileen, 2020). In addition, there are more than 21,894 journals in the Web of Science Core Collection as of August 3, 2021 (Clarivate, 2021). This is a significant number of journals that influence the scientific movement worldwide. However, this number keeps increasing each year.

We notice some reasons why the number of journals or publishers increased. First, the number of journals in a specific field may be limited. Second, the Article Processing Charge (APC) for open access journals may be too high for students, around 1,000 to 4,000 USD or more. Although there are many free journals, they mostly use subscription models (no open access for the public), and the time from submission to publication may be too long (one to three years). Third, a business purpose. Some may see an opportunity to get more money from the APC of each article without considering the quality of the articles. It is noted that APC, in line with high quality and service (following publication ethics), is highly acceptable.

Additionally, in order to improve the visibility of the universities, many create their own journals, which also bring pros and cons. Positively, suppose a university has an academic journal. In that case, they can encourage and help their faculty members and students to publish in their journals, which may be considered one step of the academic publishing exercise. Many journals are also published in local languages. Once the articles are published, at least they have the visibility in Google Scholar, respectively. It may have national and international impacts. In addition, to improve the quality of the journals, each country has its criteria. For example, in Indonesia, they have an accreditation body from the government to evaluate every year. However, each journal is competitively developing its quality for being indexed in reputable databases, such as Scopus, Web of Science, PubMed, Ovid, DOAJ, and others.

Negatively, the publication has an impact on the quality of higher education, especially for nursing education. To our knowledge, one university can create many journals, or each faculty develops one journal, and even in one faculty, each nursing program creates one. For instance, a pediatric nursing program creates a pediatric journal; a critical care nursing program makes a critical care nursing journal. It is a double burden for the faculty members. Instead of teaching, they are under pressure to spend their life conducting research, writing articles for promotion, and managing academic journals. There is a transition of the quality focus between teaching and publishing. This single-minded focus may cause faculty to neglect or be unable to perform some other responsibilities (Rawat & Meena, 2014).

**Misconduct Among Nursing Students**

The negative impact of the notion of “publish or perish” can be seen from the cases of plagiarism, double publication, retraction, and other misconduct behaviors among students (Rawat & Meena, 2014; Gunawan, 2018). It is because many nursing students are now required to publish their works in international journals for graduation. At one point, it is an excellent step for publishing instead of only putting a thesis or a dissertation in a library. But, unfortunately, not all students could do it. The transformation of a 200-page thesis to be a 10-page article is not easy; it needs writing skills and passion. Many masters or doctoral nursing students are graduated late because of waiting for publication. In the majority of cases, they still need to pay tuition fees until the article is published online.

Besides, this is not the only case. Many diploma and bachelor nursing students, for example in Indonesia, are now demanded to go for publication too. This is another step of the misleading direction of the nursing institutions. Diploma nursing students mostly focus on clinical practice, while Bachelor nursing students may conduct mini-research for exercise, which most studies have low quality. Imagine if they are demanded to publish their works, the low-quality articles will be published and may negatively influence the credibility of the faculties and universities.

**Predatory Journals**

There is no golden standard to define a “predatory” journal. Although Jeffrey Beall was first coined the term “predatory” in 2010 (Beall, 2012) and has provided lists of publishers and journals in the past years; however, the way he evaluated the publishers and journals creates pros and cons because the decisions were not systematically explained (Chen, 2021). To our knowledge, it is somehow challenging to evaluate a publisher or a journal. A critical analysis is needed.

Understandably, a journal or a publisher may not perform excellent editorial management in the first year, as they are looking for a certain number of articles to meet the criteria for indexing. Many journals email and call prospective authors for submission and offer fast-track reviews (mostly only editorial review and single-blind review) or even fast-track publication, which is inappropriate in terms of publication ethics. Therefore, to be indexed in reputable databases, such as Scopus, Web of Science, PubMed, and DOAJ, one or two years minimum criteria of a journal publication history is required (Elsevier, n.d.), and their evaluation takes one to two years to complete.

Besides, although a journal has been indexed in those databases, it does not guarantee its quality. Many journals, after being included in Scopus and Web of Science or being a member of COPE (the Committee of Publication Ethics), their behaviors are very deviant. For example, as far as we know, a journal that usually publishes ten or 20 articles in
one issue is changed to publish 100 to 500 articles per issue, or from 60 to 1000 articles per year, with questionable peer review.

There are common red flags to identify “predatory” journals. Red flags are clues, not necessarily evidence, of predatory activity (Chen, 2021). The typical red flags include fake impact factors, incorrect addresses, misrepresentations of the editorial board, false claims of indexing or membership of associations and misleading, little or no information about editorial and peer review process, absent contact information, no details about article processing charges, and editors and editorial board members are often unverifiable (Grudniewicz et al., 2019; Chen, 2021). An unprofessional-looking web page – with irrelevant text is also considered a red flag (Grudniewicz et al., 2019; Chen, 2021). Repeated emails sending an invitation for submission, which the journal scopes are out of areas of authors’ expertise (Grudniewicz et al., 2019; Chen, 2021). Also, many journals publish articles faster within one to two weeks as long as the authors pay a certain amount of money or article processing charge. Therefore, we need to be careful with this kind of journal behavior and regularly check the discontinued Scopus lists to ensure that the journals are still included, and importantly, the contents of the published articles should be evaluated. “Predatory” journals are a global threat (Grudniewicz et al., 2019), and they keep growing and continually changing their names and journals (Chawla, 2021), as they have found ways to be indexed in reputable databases (Grudniewicz et al., 2019).

Recommendations

Our position to honor the “publish or perish” culture is valid, but it should be done differently. In this section, we provide four recommendations considering the push to publications’ concerns and disadvantages.

First, there should be no conflict between teaching and publishing focus. The faculty members have a huge responsibility to teach nursing students in order to be competent registered nurses, especially in the bachelor and diploma nursing programs. Research and publication should not be their focus; instead, clinical skills should be a priority. For the master nursing program, each student only has two years of education (with four semesters); therefore, conducting promising research and publishing their work is challenging. It is because they spend one year on coursework and another year on the thesis. From our experience, mostly the students pass the proposal in the third and fourth semesters, but only a few complete it on time. Imagine if the university is required to publish their works in an international journal; indeed, they will spend at least one more year waiting for the publishing process. It is rare to find the Scopus or Web of Science journals publish an article within a month unless it is a “predatory” journal without peer review.

Besides, it is different from a doctoral program or PhD, in which its program is a research focus. Although some institutions provide one year of course works and two years of research, the students can publish any parts of their research development, from concept development, literature review, instrument development/modification/translation, and main results of their study. However, not all students can do that; dealing with a qualifying exam and proposal defense makes them stressful enough. Another challenge is that a publication in a Scopus or Web of Science indexed journal is mandatory for graduation. Some universities have specific criteria of journals for publication to avoid “predatory” journals. The ranking of journals for students varies depending on their funding supports or scholarships. Some require Q1 journals, some only Scopus-indexed journals, regardless of the journal ranking. Also, some require one article, some need two or three articles. There is no universal standard for this issue, and it needs further exploration.

However, it is also challenging for the students to manage their time critically. Most of them are not possible to finish their study in three years, on average in four to six years. In addition, it leads to another issue, a tuition fee. Some universities still require the students to pay the fees (we are unable to provide the names of the universities, but it happens). However, in this case, the students should not pay any tuition fees because they are just waiting for the publication, and mostly they do not attend university and are back to work already.

Second, creating many journals in a university is not a necessity. We will not turn a university position into a publisher position; both have different purposes. Establishing many journals should not be a shortcut for increasing article production for a specific university or country. Our position on this point is not to forbid any universities to develop an academic journal, as long as they could balance between the quality of education (including the quality of teaching among faculty members) and the publication management. Many universities have the same human resources to teach, research, write and publish articles, as well as manage the journals. Adding other human resources to focus on journal publishing would be helpful without obstructing the teaching performance.

Third, publication ethics should be emphasized among faculty members and nursing students. To our knowledge, many nursing students, due to running with the time, often do double submission—submitting the same article at the same time to two or three journals (Gunawan, 2018). This unethical behavior may occur because they do not know, or they may be aware, but time is up. Unfortunately, this often results in a double publication, which leads to retraction and influences the university’s reputation and threat to be blacklisted in some journals.

In addition, many students or faculty members try to contact and negotiate with the editors about fast-track reviews and publications, resulting in immediate rejections. Instead of asking, the students could check the turn-around time (from submission to publication) average in the journal info or the published articles. Also, the publication ethics
related to plagiarism, self-citations, and other unethical behaviors should be highly emphasized.

Fourth, the notion of “publish or perish” should not be described as “under pressure,” but rather as culture, passion, encouragement, empowerment, motivation, and invitation of individuals to publish their works. However, it should be applied on many levels. For example, beginners or junior faculty members may need a collaborating team and a longer time to write or rework an article to be ready for publication. In addition, they may need some time to balance their works. In contrast, experts, or senior faculty members, may have some targets per year, either work individually or in a team. They also need to spare their time to empower the young generation to create the publication “passion” culture.

Conclusion
The discussion related to publication benefits, concerns, and recommendations in this article are authentically based on the author’s perspectives. However, the quality of nursing education should be highly prioritized. Teaching, research, and publication should align in harmony in order to reach the goals, either to be a world-class university or to produce competent and professional nurses. We should learn to trust every process; there is no shortcut by neglecting other responsibilities and focusing only on publishing. This applies to all elements, university level, faculty member, and students. We had better run slowly but with the proper process, rather than running faster but breaking all principles and goals. Lastly, we expect all nursing education worldwide to focus on good quality education to achieve sustainable development goals and ensure professional nurses are produced to serve communities.

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Coping style, anxiety level, organizational support, and work commitment of educators during the COVID-19 pandemic in the Philippines: A mixed-methods study

Norhidayah A. Aragasi and Hamdoni K. Pangandaman*

Abstract

Background: The emergence of the COVID-19 pandemic has distorted the education system, which greatly challenged educators in the pursuit of the continuity and quality of education. Commitment to perform duties and responsibilities are bounded in coping with the situation, emotional state, and the support from the organization.

Objective: To analyze and understand the presumed interrelationship of modeled variables, such as the coping style, anxiety level, organizational support, and work commitment of educators during the COVID-19 pandemic.

Methods: It is a mixed-methods study through an explanatory sequential approach. The path analysis technique was applied for quantitative with 116 educators as sample respondents guided by selection criteria. Digital immigrant educators with extreme responses were identified and asked permission for an interview. Open-access adapted questionnaires used were Simplified Coping Style Questionnaire (SCSQ), Beck Anxiety Inventory (BAI), Perceived Organizational Support (POS), Allen and Meyer's Organizational Commitment Questionnaire (OCQ). Data were processed and analyzed using SPSS and AMOS for descriptive and inferential statistics. A four-domain semi-structured questionnaire served as a guide in interviewing participants in the context of coping, anxiety, support, and work commitment. Thematic analysis was performed to generate themes.

Results: This study shown that educators often used coping style (1.87 ± 0.84; Mean ± SD), have a low level of anxiety (0.58 ± 0.69; Mean ± SD), have perceived uncertainty related to organizational support (4.03 ± 1.37; Mean ± SD), and neither agree nor disagree in terms of their work commitment (3.02 ± 0.93; Mean ± SD). The presumed model through path analysis has significantly predicted 28% plausibility (R² = 0.28) with only organizational support that shown significant influence towards educators’ work commitment (β = 0.22). The themes that emerged are challenging adjustment, predestined situation, fear of getting infected, difficulty teaching effectively, technologically challenged, psychosocial assistance, uncertainty, and willingness to explore.

Conclusion: Educators during the COVID-19 pandemic were able to cope and control their anxiety through the test of time, seamless work commitment, and presence of support. This study can be considered a framework for situational analysis of nurse educators in the academic realm in times of emergency and disaster.

Keywords
COVID-19; coping; anxiety; organizational support; work commitment; educators; nursing; Philippines
The pandemic has brought about a stressful event for almost all people worldwide (Daniel, 2020; Mertens, Gerritsen, Duijndam, Salemink, & Engelhard, 2020). Affecting a large number of populations, this pandemic has even brought an evident change in many academic institutions, which includes a new mode of instruction and a new method of learning and teaching, and has somehow believed to impact and overwhelm both the educators and the students (Ali, 2020; Donohue & Miller, 2020; Talidong & Toquero, 2020).

Accordingly, 88% of workers reported experiencing moderate to extreme stress over the past 4 to 6 weeks related to the COVID-19 pandemic after its spread. Among those reporting stress, 62% noted losing at least one hour a day in productivity, and 32% lost at least two hours a day due to COVID-19-related stress (Labrague & de Los Santos, 2021; Reimers, Schleicher, Saavedra, & Tuominen, 2020). Researchers also highlighted that prescriptions filled per week for antidepressant, antianxiety, and anti-insomnia medications increased by 21% (Daniel, 2020). The rise in new cases may indicate a troubling association with COVID-19-related stress. Prior to the pandemic, the use of antianxiety and anti-insomnia medications were both on the decline from 2015 to 2019. However, in the time frame examined in the study, new prescriptions for antianxiety medications exhibited a 37.7% increase, stressing the vital need for therapeutic intervention (Hamouce, 2020).

This scenario has somehow brought the education system into a total drastic change. From normal face-to-face classes, the instruction inside the four corners of the room has turned into virtual learning, making all institutions challenged and unprepared (Daniel, 2020; Talidong & Toquero, 2020). Hence, in the field of academic institutions, the dilemma of educators to adhere to this new mode of instruction, amid the pandemic, at the same time imparting the quality education the learners deserve remains under progress and unanswered. This somehow will account for the fact that educators may face unprecedented anxieties and stresses during this drastic academic change, let alone the mental stress brought by the pandemic. Also, some educators, as part of an organization, may alter their willingness to serve, which can influence their individual coping in the situation and the level of support from the organization to sustain and commit to their work (Flores & Swennen, 2020; Yu et al., 2020). Unstable coping of educators may significantly affect their sound functioning and their atmosphere inside the organization, specifically their work commitment and the knowledge they impart (Adedoyin & Soykan, 2020; Flores & Swennen, 2020). Such is the reason why mental health should always be prioritized (Hamouce, 2020).

It is of important significance to establish the connection of nurse educators work commitment with the ways on how they cope and manage their anxiety with the support at hand from the organization during the pandemic that springboards strategic management in the continuity of promoting quality education and a step forward towards 4th industrial revolution (Pangandaman, Ali, Lambayong, & Ergas, 2019a). This research has centered its inquiry on the commitment of educators at work that subjected to a state of disequilibrium during the COVID-19 pandemic in which, based on literature, could be influenced by the interplay of educators’ anxiety, coping in the situation, and the support from the organization (Hamouche, 2020; Mertens et al., 2020; Talidong & Toquero, 2020). The lack of assessment of such a situation has led to the closure of schools in the Philippines (Reimers et al., 2020), which consequently contributed to the loss of jobs (Liu, Lithopoulos, Zhang, Garcia-Barrera, & Rhodes, 2021; Talidong & Toquero, 2020), devastated hopes and dreams of students (Adedoyin & Soykan, 2020; Ali, 2020), and the likelihood of a famine in the future. This study aimed to analyze and understand the presumed interrelationship of modeled variables such as the coping style, anxiety level, organizational support, and work commitment of educators during the COVID-19 pandemic. A mixed-methods approach through explanatory sequential phase of path analysis of studied variables to establish its interconnectedness followed by interviews to clarify, understand and explain extreme situations experienced by educators. It can serve as a framework for situational analysis of nurse educators in the academic realm in times of emergency and disaster, such as the COVID-19 pandemic.

Methods

Study Design

This study utilized a mixed-methods design, particularly an explanatory sequential approach through a follow-up explanations model. According to Ivankova, Creswell, and Stick (2006), this approach focuses on specific quantitative results that require further explanation, such as extreme or unpredicted findings with highly statistical differences between or among groups or individuals. As such, a qualitative approach is needed to best help explain quantitative results. As applied in this study, the quantitative strand was primarily established through path analysis followed by the qualitative strand through interview. A path analysis approach was conducted to analyze the presumed interrelationship of modeled variables between coping style, anxiety level, organizational support, and work commitment of educators during the outbreak of COVID-19 in Mindanao, Philippines. The qualitative strand was instituted through interviews with the digital immigrant health educators since they are the most challenged in adopting flexible learning as technology-driven pedagogy. They have been interviewed to verify their responses on the research instrument and provided enrichment in understanding the studied phenomenon.

Participants and Study Setting

Quantitative Strand

A non-health and health-related faculty members were selected from the 17 colleges of Mindanao State University (MSU), Philippines, through stratified simple random
sampling in which the yielded sample size \( n = 116 \) was calculated through the Raosoft online sample size calculator website upon inputting 165 total population under 95% confidence level and 0.05 margin of error (Omair, 2014). Respondents were selected based on criteria that (1) they have been working as faculty in the university for more than one academic year regardless of the employment status, (2) not holding middle managerial position or higher, and (3) have regular or at least 18 units teaching load. Exclusion criteria were faculty not willing to be part of the study and could not be able to reach.

**Qualitative Strand**

In the quantitative sample size \( n = 116 \) who participated in the quantitative strand, 31 digital immigrant educators (born before 1985) were identified. They have been chosen as participants for the interview in the qualitative strand, aside from being presumed as technologically challenged educators (Salazar-Márquez, 2017) was also to follow-up their extreme responses in the quantitative data. They were notified and invited to participate in the study through their institutional email and social media accounts like Facebook. Unfortunately, only five expressed interest and assured commitment for an interview due to myriad personal and professional responsibilities.

**Instruments**

There were five parts of the questionnaire in this study. The first to fourth part is an adapted self-scoring Likert-scale type questionnaire accessed from an open access journal with permission asked and granted from respective authors. The fifth is a researcher’s made open-ended question format, which was validated by five experts in the field of nursing education. The default language used is English since the respondents/participants are professional educators and so not needed for vernacular language translation. Brief description of the questionnaire are as follows:

The Simplified Coping Style Questionnaire (SCSQ) is composed of 2 dimensions of coping: active (item 1 to 12) and passive (item 13 to 20), which response in each item is being measured through a four-point Likert scale (0 = never; 3 = very often). Active and passive coping is the usual response of an individual when stress has encountered. The higher the total SCSQ scores, the more possibility of adopting a relevant coping style. It has good validity and reliability measures (Cronbach’s α = 0.90 and 0.92) (Yu et al., 2020).

Beck Anxiety Inventory (BAI) is used to a self-report level of anxiety through the calculated summed score of its 21 items. Response in each item is being measured through a four-point Likert scale (0 = not at all; 3 = severely – it bothered me a lot). Scores of the level of anxiety are categorized as follows: low anxiety = 0 to 21 score; moderate anxiety = 22 to 35 score; high anxiety = 36 and above. BAI questionnaire has proven good history of validity and reliability (Cronbach’s α = 0.92), has been moderately correlated with the revised Hamilton Anxiety Rating Scale (.51) and mildly correlated with the Hamilton Depression Rating Scale (0.25) (Beck, Epstein, Brown, & Steer, 1988).

Perceived Organizational Support (POS) questionnaire is based on the perception of employees towards the extent to which their organization puts value on their contribution and well-being. It has 36 items, and each is being measured through a seven-point Likert scale (1 = strongly disagree; 7 = strongly agree). It has reported good validity and reliability and has been used by school teachers in Malaysia to assess the level of support being given to them (Rozdi, Othman, Ahmad, & Mohamed, 2017).

Then, Allen and Meyer’s Organizational Commitment Questionnaire (OCQ) is comprised of 3 dimensions: affective (6 items), continuance (6 items), and normative (6 items). Each is measured through a 5-point Likert scale (0 = strongly disagree; 4 = strongly agree) with proven validity and reliability. It has been used to assess the commitment of academicians in a university (Wilson, Bakkabulindi, & Ssempebwa, 2016).

Lastly, the fifth part of the questionnaire is an open-ended type. It has statements in a declarative format that inquires on the respondent’s phenomenon related to their coping, anxiety, support of the organization, and work commitment despite the COVID-19 pandemic. The content of the declarative statement items was selectively patterned from the adapted questionnaire (i.e., coping, anxiety, organizational support, and work commitment) with extreme responses needing clarification. The construction of the declarative statement items designed for interview has been subjected to face validity through consulting expert validators. They were five nursing educators with more than ten years of experience as an educator in an institution offering a nursing program, at least master’s degree holder, and are active in instruction during COVID-19 pandemic. Validators unanimously agreed that all declarative statement items are valid to use for the interview.

**Data Collection**

**Quantitative Strand**

Researchers abided by the standard process and protocol of data gathering in the university as the locale of the study. The key officials, administrators, and middle managers have been communicated for permission and assistance to gather data. Respondents of the study have reached by the researchers through the institutional e-mail address in which an attached link for Google form version of the questionnaire. Social media, particularly Facebook Messenger and Instagram, were also used as a platform in reaching out to the respondents. A site visit has been done, and administered the questionnaire to available respondents who preferred the printed type of questionnaire. Standard health protocol has been observed throughout, such as wearing of facemask, face shield, social distancing, and handwashing. Quantitative data gathering happened from 7 September to 2 November 2020, in which the educators have already experienced at...
least a semester of academic-related challenges in the midst of the COVID-19 pandemic.

Qualitative Strand
An interview has conducted in agreed available time online with the five digital immigrant faculty of the institution through the most preferred online platform of communication such as Zoom conferencing application, Google Meet, and Facebook Messenger video room. Prior to a formal interview, participants were formally asked for consent in recording the interview. It has been managed from 23 November 2020 to 26 February 2021.

Data Analysis
Quantitative Strand
Quantitative data gathered through Google form has been tabulated and coded in Microsoft Excel and extracted to SPSS version 21 application software to compute for the descriptive statistics (score, mean, and standard deviation). Then data from SPSS has been extended to AMOS software to perform path analysis using statistical regression technique to establish the predictive relationship of the variables and the path analysis model.

Qualitative Strand
Qualitative data then were manually transcribed and matched with the corresponding variable to perform thematic analysis. The processes included transcribing the recorded data, getting to know the data, producing initial codes, searching for themes, reviewing themes, and defining and labeling themes (Vaismoradi, Turunen, & Bondas, 2013). The researchers counter-checked together closely and verified the truthfulness and accuracy of data through follow-up interviews with the participants.

Ethical Considerations
An ethics clearance has been secured from the College of Health Sciences Ethics Review Committee (CHS-REC) prior to data gathering and interview. Researchers explained the purpose of the study to the respondents and highlighted their rights, such as the right to withdraw or refuse to participate, the confidentiality of data or information gathered, and the possible risk and benefits. Detailed information of rights in the consent form was provided and signed by respondents.

Results
Quantitative Results
Based on Table 1, the educators as participants often used coping style (1.87 ± 0.84; Mean ± SD) for both active (2.03 ± 0.81; Mean ± SD) and passive (1.64 ± 0.89; Mean ± SD) coping during COVID-19 pandemic. Based on the summed scores (12.18) in the inventory of anxiety, it is shown that educators had a low level of anxiety (0.58 ± 0.69; Mean ± SD), and they had perceived uncertainty or undecided towards support from their organization or institution (4.03 ± 1.37; Mean ± SD). In terms of educators’ work commitment, they could neither agree nor disagree in terms of their affective work commitment (3.02 ± 0.93; Mean ± SD), and they agreed on both continuance (3.47 ± 1.09; Mean ± SD) and normative (3.71 ± 0.392; Mean ± SD).

Table 1 Descriptive statistics of the study variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Score</th>
<th>Mean</th>
<th>SD</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coping Style</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active Coping</td>
<td>24.41</td>
<td>2.03</td>
<td>0.81</td>
<td>Often</td>
</tr>
<tr>
<td>Passive Coping</td>
<td>13.13</td>
<td>1.64</td>
<td>0.89</td>
<td>Often</td>
</tr>
<tr>
<td>Overall:</td>
<td>37.54</td>
<td>1.87</td>
<td>0.84</td>
<td>Often</td>
</tr>
<tr>
<td>Anxiety Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall:</td>
<td>12.18</td>
<td>0.58</td>
<td>0.69</td>
<td>Low anxiety</td>
</tr>
<tr>
<td>Organization Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall:</td>
<td>14.32</td>
<td>4.03</td>
<td>1.37</td>
<td>Undecided</td>
</tr>
<tr>
<td>Work Commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affective</td>
<td>18.14</td>
<td>3.02</td>
<td>0.93</td>
<td>Neither Agree nor Disagree</td>
</tr>
<tr>
<td>Continuance</td>
<td>20.87</td>
<td>3.47</td>
<td>1.09</td>
<td>Agree</td>
</tr>
<tr>
<td>Normative</td>
<td>22.27</td>
<td>3.71</td>
<td>0.92</td>
<td>Agree</td>
</tr>
<tr>
<td>Overall:</td>
<td>61.28</td>
<td>3.40</td>
<td>0.98</td>
<td>Neither Agree nor Disagree</td>
</tr>
</tbody>
</table>

Table 2 shows that the variable coping style (CS) and organizational support (OS) had no significant influence on anxiety level (AL) (OS → AL, β = 0.06; OS → AL, β = -0.09). The variable coping style, organizational support, and anxiety level represented a weak predictive model (R² = 0.102). On the other hand, the path analyzed towards Educators Work Commitment (EWC) as predicted by coping style, organizational support, and anxiety level was a significant model (R² = 0.28; F = 2.82**; B = 39.11**) which predicted a 28% plausibility of the model (R² = 0.28). Standardized data showed that coping style and anxiety level did not have a significant influence or effect on educators’ work commitment (CS → EWC, β = 0.13; AL → EWC, β = -0.08). Only organizational support yielded a significant influence or effect on educators’ work commitment (OS → EWC, β = 0.22*). Figure 1 shows the final path analysis model of the study.
Table 2 Path analysis model

<table>
<thead>
<tr>
<th>Path Model</th>
<th>$R^2$</th>
<th>F</th>
<th>B</th>
<th>SE (B)</th>
<th>95% CI</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV: Path a &amp; Path $b$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV: AL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Path $a$ = CS</td>
<td>0.10</td>
<td>0.50</td>
<td>0.06</td>
<td>0.11</td>
<td>[-0.15, 0.29]</td>
<td>0.06</td>
</tr>
<tr>
<td>Path $b$ = OS</td>
<td></td>
<td></td>
<td>-0.06</td>
<td>0.07</td>
<td>[-0.20, 0.08]</td>
<td>-0.09</td>
</tr>
<tr>
<td>IV: Path $c$ to Path $e$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV: EWC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Path $c$ = CS</td>
<td>0.28</td>
<td>2.82*</td>
<td>0.11</td>
<td>0.05</td>
<td>[0.01, 0.22]</td>
<td>0.13</td>
</tr>
<tr>
<td>Path $d$ = OS</td>
<td></td>
<td></td>
<td>0.11</td>
<td>0.06</td>
<td>[-0.08, 0.21]</td>
<td>0.08</td>
</tr>
<tr>
<td>Path $e$ = AL</td>
<td></td>
<td></td>
<td>0.06</td>
<td>0.07</td>
<td>[-0.15, 0.29]</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Note: $n=116$; $B =$ unstandardized beta; $SE =$ standard error; $CI =$ confidence interval; $\beta =$ standardized data; $DV =$ dependent variable; $IV =$ independent variable; $CS =$ Coping Style; $OS =$ Organizational Support; $AL =$ Anxiety Level; $EWC =$ Educators Work Commitment; *$p$-value $=0.05$; **$p$-value $=0.01$

![Figure 1 Path analysis model](image)

Qualitative Results
An interview with digital immigrant educators as the most challenged in the sudden shifts of pedagogy due to the emergence of COVID-19 to gain a deeper understanding of their situation in the context of coping, anxiety, organizational support, and work commitment. Each dimension revealed two major themes. Challenging adjustment and predestined situation for coping; fear of getting infected and difficulty in teaching effectively in the dimension of anxiety; technologically challenged and psychosocial assistance in the context of organizational support; and uncertainty and willingness to explore for a work commitment.

Challenging Adjustment
Participants as an educator expressed challenges in adjusting to cope with the emergence of COVID-19. Part of their coping mechanism is to gradually adjust to the challenges they had experienced due to the necessary and sudden shift of pedagogy. In addition, participants stated that they need to adjust to the challenges of new normal life and at work to fulfill their responsibilities. The statement below described the experiences of the participants:

- “It is a sudden encounter, but I believe this is a big challenge for everyone” (p1)
- “It is a new life now that we have to dwell and adjust responsively to fulfill our responsibilities” (p5)
- “We should really find ways to have an adjustment” (p1)
- “As an educator, it is important to show to our students that we are coping in the new normal situation. It is challenging, and so we have to be a model to our students” (p3)
- “I am anxious about the unknown to come in thinking that it would get difficult to teach” (p2)

Other participants stated that they have difficulty adjusting because of the challenges in flexible learning as pedagogy in the new normal. There were institutional policies and requirements that they need to comply as an educator. These were described in statements below:

- “The institution prescribed flexible learning as a strategy in the new normal; It is challenging because I am not used to technology in teaching” (p2)
“I have always been watching a video in YouTube about flexible learning to deal with the complexities of teaching in this new normal” (p4)

“I asked to be mentored by my millennial daughter to gradually learn with the skills required in teaching in this new normal” (p5)

Predestined Situation
The COVID-19 pandemic situation has been viewed by educators as predestined. Therefore, they cope with the situation by rationalizing that it could not happen without the will of the above almighty. Participants stated that this perception has helped them cope with and adjust to the situation to perform daily functions and their faith as their strength.

“We need that to function routinely every day. And you know what, it is really a big help having those thoughts like this is predestined (Qadr) which we cannot take control of so we will be the one to adjust” (p1)

“The pandemic COVID-19 is a given challenge that everyone has to endure with faith” (p4)

“Our prayer is our hope that everything will be going back to normal” (p3)

“It’s not that I do not engage in coping, but I rarely think situations like this should shake me. Yes, this is a sudden encounter, but I believe this is a big challenge for everyone that we should not weaken ourselves, right?” (p1)

Fear of Getting Infected
The educators were anxious about the debut of COVID-19 in the country that they are afraid of getting infected. They are scared of going to the institution as the facilities, and the means of transportation may put them at risk of getting infected.

“What if I get infected? Maybe I won’t be able to bear it” (p2)

“Because if you’ll look at it, it’s like it is very hard to stop its spread, right? It is really terrifying to be infected” (p3)

“My fear in coming to the institution to attend an academic meeting is the thought that some could possibly and unknowingly have contact with the facility by an infected” (p5)

“I would definitely avail vaccine to decrease my fear of possibly acquiring the virus from others” (p4)

The participants also expressed their anxiety in commuting from home to work as they are possibly exposed to and infected by a virus carrier. In addition, they expressed concern about the type of vehicle they avail in commuting as the risk of getting infected could be highly possible in a closed air-conditioned vehicle.

“As an educator, I need to attend meetings in the university and comply in the skeleton scheduling assigned, so I have to commute through an open-space vehicle like jeepsneys” (p3)

“I am afraid to ride in a van vehicle going to school as the chance of getting infected is high because it is a close-spaced airconditioned vehicle” (p1)

“I am in favor of limiting the number of passengers in our college vehicle to minimize the risk” (p5)

“I have personal handy alcohol to religiously spray before and after entering in a car, the school, and at home as I am afraid to be infected as well as others especially my family” (p4)

Difficulty in Teaching Effectively
Educators amidst the COVID-19 pandemic had expressed their manageable level of anxiety in the sudden shift of pedagogy. They are anxious at the beginning of the pandemic due to uncertainty in the direction of the education system in the country. But, with the passing of time and the love for teaching, digital immigrant educators have earned some confidence and competence in flexible learning though they admitted that it had been a difficult time for them.

“To be honest, when it was the first week of the lockdown, the first thing I thought of was, how can I teach effectively for now?” (p3)

“Synchronous classes as a flexible type of learning is very easy to think of but difficult to actualize because of constraint in the internet connection and the technology itself” (p2)

“It has been difficult to teach in flexible learning because of eye strain, back pain and the unfamiliar features of gadgets in smartphone and laptop” (p4)

“It’s very hard to teach virtually than in face-to-face. I am afraid of being ineffective in the new pedagogy” (p1)

The participants expressed that they love their work as educators and willing to learn to overcome difficulties in teaching in the new normal. They had experienced difficulty in using various online educational platforms such as Zoom, Google Meet, Google Classroom, and social media like Facebook and Messenger.

“It difficult to teach in this new normal, but I am trying to learn how as I love teaching” (p3)

“There was a time that I was video conferencing in my lecture, and I realized that there were no virtual students present because I was disconnected” (p1)

“I can’t start my virtual class without the assistance of my millennial daughter to help me set up my computer and my presentation” (p5)

“My experience delivering successfully in online class has been dependent on someone to assist me, but I tried to learn although difficult at first. Now, I can operate basic features of the educational platform such as Zoom, Google Meet, Google Classroom” (p2)

“I have no social media account before, so I made one in Facebook and Messenger to facilitate my online classes. It has been difficult because I’m not used to it” (p4)

Technologically Challenged
Educators expressed their anxiety through having a fear of getting infected, yet they think of their responsibilities at work on how they can teach effectively despite difficulties. It relates to the challenging method of instruction as a technologically driven process. Educators who belong to the digital immigrant group have had to learn a new language and practice when it comes to digital technologies in which support from the institution to this matter has
relevance in the success of educators in the delivery of class instruction and so the students.

- "It is very challenging to teach. I appreciate the university administration in promoting technological support to the faculty through webinars and training" (p2)
- "The internet speed in the University must be upgraded. It is also challenging to look for strong internet reception somewhere" (p3)
- "I have bought laptop and gadgets for my classes. Yet, I don’t know how to operate unless someone assists me" (p4)
- "We have been required to attend training simulations on flexible learning. The experience was challenging but with more opportunities to learn about technology" (p5)
- "I am confused in some basic functions of computer like keyboard shortcuts and text instructions" (P1)

They also share that they mostly have challenging experiences using computers and their smartphones in terms of internet connectivity. They have been requesting assistance in registering to internet promos, accessing and inputting Wi-Fi passwords, and finding a place with a reliable internet connection.

- "Through staying at schools’ office was the only time to have reliable internet connection for me to have my online classes" (p5)
- "I conducted my classes sometimes in a coffee shop to access because of internet. It was a tough situation for me to have that set-up sometimes" (p3)
- "I have been always asking assistance from my millennial co-educators in availing internet promos" (p2)
- "The password needed to access a Wi-Fi or hotspot internet is confusing" (p1)

**Psychosocial Assistance**

The sudden shift of pedagogy being implemented in the new normal and the needed adjustment because of challenges in the quarantine measures being imposed has been mentally, socially, physically, and financially taxing. The situation of educators loaded with academic responsibilities seems to be mentally draining that needed psychosocial assistance. The statements presented below are the manifestation of the struggles of digital immigrant educators.

- "Occasional face-to-face academic meetings is socially beneficial and sometimes mentally refreshing" (p4)
- "The 1-week academic break allowed by the University paved mental break to us educators" (p3)
- "I admired a very responsive academic administration in responding to our queries related to academic concerns" (p5)
- "What is missing in this new normal is the socialization with co-workers and students. Virtual interactions can be boring, especially when you have a poor internet connection. I hope to have limited face-to-face classes or back to normal the soonest" (p1)

The educators also wished to have an outlet in the academe or organization to channel their psychosocial concerns. It seems to be meaningful for them to have something that they could socially and mentally rely on.

- "I need sometimes to talk to discuss about academic concerns" (p3)
- "I’d love to come in the institution to personally share my struggles whom an educator can relate to" (p1)
- "The kind of teaching amidst pandemic is so mentally draining. I love the kind of socialization in teaching" (p5)

**Feeling of Uncertainty**

Educators have shared a feeling of uncertainty on their commitment. It is because of the challenging teaching process in the new normal and the perception of the support that they need to withstand the unknown duration of the COVID-19 pandemic.

- "I don’t know if I could still work and teach in this new normal" (p1)
- "Pandemic may last longer, and I am not sure with my commitment because of the need to balance between competence and support" (p4)
- "I am certain with my work commitment before the pandemic, but now, I could not say" (p3)
- "There could be instances wherein you will be just wanting to stop, but of course, that isn’t a permanent decision. Just human nature to feel hopeless. So that’s it, I can’t be hundred percent sure for now if I can say whether or not I am committed (in my organization)” (p5)
- "It’s not appropriate to discuss work commitment” (p3)
- "All of a sudden, academic realm, the process…we need more time and so to think of commitment” (p1)
- "Commitment is a big word. Since I was just hired around 2018, it would be too early for me to conclude to myself whether or not I am committed to staying. But part of me is actually willing to find that commitment because, from the very first place, I wanted to enter this university very badly” (p5)

**Willingness to Explore**

Despite the uncertainty, educators share their feelings and willingness to explore and learn new strategies to adopt the new normal in the academic realm. Participants stated that they have been attending online webinars, and with the assistance, they are willing to always watch videos at YouTube and do research at Google to learn more ideas and to enrich the visual content of their lecture presentation online.

- "Always eager to attend webinars because you would learn a lot and explore” (p4)
- "My partner directs me to the right content to watch in YouTube for instructional strategies… I like the process” (4)
- "In Google, you would explore everything… just type the word/s” (p2)
- "Sometimes I spent about 4 to 5 hours screen time. More to research for work and I am always into it now” (p1)
- "You can search more pictures in google to enrich visuals of lecture presentation online” (p3)
- "I have to explore in this kind of work today. I am committed to doing it” (p1)
Discussion

This study aimed to analyze the presumed model, particularly the interrelationship between coping style, organizational support, anxiety level, and work commitment of educators in a university during the COVID-19 pandemic. It has shown that educators were able to apply both active and passive coping styles during the pandemic as the provision of the situation becomes part of their daily routine that made them find ways to adjust. The participants expressed that the adjustment period was challenging and presumed it was predestined as part of their coping. They described a positive remark in accepting the reality and being strong enough to adjust to such situations to function well. These imply that it is the responsibility of an individual to deal with things that can affect one’s emotions, and it depends on a person to use certain coping styles. Educators’ acknowledgment of the global crisis, challenges, and understanding of the essential role and responsibilities in the trying times of pandemic are able to adjust and cope (Flores & Swennen, 2020).

Educators have shared a low level of anxiety in the pandemic situation, but they have reservations over the fear of possibly getting infected. Also, with the sudden shift of pedagogy as responsive to the situation, the educators have expressed their concern in difficulty to be an effective teacher in the new normal. However, the concept of possible terrific situations, fear of dying, a state of nervousness, and anxiety-related feelings do not bother them. Educators acknowledged that fear is normal during this pandemic but at a controllable condition. Though fear of COVID-19 is typical in the pandemic (Mertens et al., 2020), they expressed that there is nothing to be afraid of as long as health protocols are strictly practiced. It enjoin a study that Filipino teachers or educators adhere to health protocol requirements and has found purposeful activities in dealing with anxiety, such as spending time on social media and newly discovered hobbies during quarantine (Talidong & Toquero, 2020). However, they expressed important concerns on the effect of the pandemic in society and the directions of the system of education in the future, which also mentioned in other studies (Daniel, 2020; Flores & Swennen, 2020; Talidong & Toquero, 2020).

Moreover, educators have a different perception of the existing organizational support during the pandemic. Some claimed that providing a complete monthly salary is invaluable support that helps them survive and overcome challenges in the trying times of the pandemic. During this time being an educator, the digital immigrants have expressed support for their challenging situation in dealing with technology and psychosocial assistance. Accordingly, there is no playbook or appropriate guide in contextualizing support to educators in the quintessential adaptive and transformative challenge in the COVID-19 pandemic (Reimers et al., 2020). Institutions adapt and flex their resources based on the existing gaps and problems, which may be perceived as deficient or unsatisfactory. This can be attributed to the shifting of methods of instruction to online or distance learning, which competency differs among educators, especially that changing landscape of education is technologically driven along with innovative classroom pedagogy (Pangandaman et al., 2019b). Accordingly, digital immigrants reported various challenges than digital natives because the mode of navigation in pedagogy has suddenly changed that made them difficult to adapt due to time constraints (Adedoyin & Soykan, 2020; Ali, 2020).

With the unprecedented challenges of the COVID-19 pandemic in the system of education, educators’ work commitment has been shaken and put to the test of time. Educators had expressed uncertainty in sharing the insights about their work commitment and so willing to explore to find their confidence and purpose. However, there are times that they feel a sense of hopelessness and yet finding passion along the way. This could be related to the various aspect of challenges met by educators in the stringent response of the government to contain and prevent the spread of the virus during its debut in the country. The period of adjustment and adaptation in the situation could then make a renewal of commitment based on the proactive response of the institutional administrators or leaders (Donohue & Miller, 2020).

Based on the analysis of the variables of educators coping style, anxiety level, and organizational support during pandemic has found no significant relationship with each other nor coping style and organizational support can influence anxiety level of educators. It is consistent in another study revealed that coping, anxiety, and support have no clearly established significant relationship or associations between such variables (Mahmoud, 2011). However, in the model of the variables analyzed, organizational support has been found to significantly influence the work commitment of educators. It relates to a study that commitment is significantly influenced by their insights of organizational support they receive directly from the organization they work (Rahaman, 2012). It is also enjoined by studies that adequate organizational support, or the degree to which the organization recognizes employees and values their well-being, has been related to high levels of job performance and commitment, both of which are important when dealing with a disease outbreak (Labrague & De los Santos, 2020, 2021), as much as the pandemic is concerned.

This study has ramifications for nursing education and practice. Educators’ situation during the trying times of pandemic COVID-19 could be partially understood through the lens of their coping, anxiety, and support that may define directions of their work commitment and the quality of education. The study's analyzed concept could also serve as a springboard for academic strategic planning and educator preparation for education 4.0, or the fourth industrial revolution (Pangandaman et al., 2019a). As a result, quality education is promoted for students to experience, which may impact their practice. It presumes to have future implications for the quality of nursing practice as a result of changing circumstances.
Part of the study’s limitation is the number of participants in the qualitative strand due to the challenging set-up of the online interview as expected from digital immigrant participants. Also, the analyzed path of the study has centered on participants coping styles, organizational support, and anxiety level as predictors of educators’ work commitment. There could be outlier variables that are best predictors of the variable being predicted, which are interesting to be undertaken for further studies. As part of the weakness of the study is the presumed matching of data gathered in the qualitative with the quantitative strand. The variables examined through path analysis as statistically measured have a weak in-depth translation in the qualitative findings, which could be a focus for further studies.

Conclusion

The emergence of the COVID-19 pandemic has greatly challenged educators in the pursuit of the continuity of education. They are able to cope and control their anxiety with the test of time, which found then to have no significant influence on their work commitment. The perceived variations in the organizational support have significantly influenced the latter, which is also similarly highlighted in other studies. Organizational or institutional support is important to renew and sustain the commitment of educators to overcome the challenges and adapt to the situation in promoting and possibly providing quality education.

Declaration of Conflicting Interest

The authors have no conflict of interest to declare.

Acknowledgment

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Authors’ Contributions

NA and HP conceptualized the article, carted and reviewed literature, and decided on the methods. NA conducted the data gathering and interview of participants and analyzed the data with HP. Several revisions were made by the authors and agreed on its final version and for publication.

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Data Availability Statement

All data collected and analyzed during the conduct of this study are included in this published article. However, for the purpose of data privacy, data or information are not publicly accessible or available to avoid compromise to the research participants.

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Citizens’ health practices during the COVID-19 pandemic in Indonesia: Applying the health belief model

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Abstract

Background: Understanding the health practice of Indonesian residents and its related factors during the COVID-19 pandemic is crucial, but such association necessitates clarity.

Objective: To examine the health practices of the Indonesian citizens and their correlations with knowledge and health belief model (perceived susceptibility, barriers, benefits, severity, and self-efficacy) during the COVID-19 pandemic.

Methods: A community-based online cross-sectional design was employed. The study was conducted from 10 July to 30 August 2020 among 552 citizens selected using convenience sampling. Sociodemographic characteristics, knowledge, health belief model, and health practices, including wearing a mask, social distancing, and washing hands, were measured using validated questionnaires. Adjusted odds ratios (AORs) and logistic regression were employed for data analysis.

Results: The adjusted AORs (95% CIs) of a good level of health practices—wearing the mask, social distancing, and washing hands—were 3.24 (1.52~6.89), 2.54 (1.47~4.39), and 2.11 (1.19~3.75), respectively, in citizens with the high level of knowledge. Interestingly, respondents with positively perceived susceptibility exhibited significantly good practice in wearing the mask (4.91; 2.34~10.31), social distancing (1.95; 1.08~3.52), and washing hands (3.99; 2.26~7.05) compared to those with negatively perceived susceptibility. In addition, perceived barriers, benefits, severity, and self-efficacy also exhibited a significantly good all variables of health practice regarding COVID-19 pandemic after adjusting for confounding variables.

Conclusion: Citizens with high levels of knowledge and positive levels of the health belief model had good practice of wearing masks, social distancing, and washing hands. The outcomes of this survey could encourage health professionals, including nurses, through management practices of nursing intervention based on the health belief model during the pandemic.

Keywords

COVID-19; health belief model; health knowledge; Indonesia; nursing; practice

Coronavirus disease 2019 (COVID-19) has emerged as one of the deadly pandemics in recent history (Grech, 2020; Huang et al., 2020). According to the World Health Organization, a total of 163,312,429 infected with 3,386,825 fatalities by COVID-19 were confirmed globally as of 18 May 2021. In particular, this vulnerability has also...
emerged in Indonesia reached 1,744,045 with a case fatality of 2.77%, (World Health Organization, 2020). Particularly, 215,059 people were infected in East Java with 11,707 fatalities and obtained the 4th rank in Indonesia (Gugus Tugas Percepatan Penanganan COVID-19, 2021). This situation is in line with the previous literature established that inadequate health practices among Indonesian citizens (Rias et al., 2020) or low public behaviors of citizens regarding the COVID-19 pandemic (Jose et al., 2021), complicating efforts to prevent the spread of this pandemic. Consequently, the containment of the COVID-19 pandemic must continue to rely on personal health behaviors control to decline the exposure (Bechard et al., 2021; Jose et al., 2021).

Preventing and or reducing the spread of infection is accomplished by practical personal care measures, which involved washing hands, wearing a mask, and required standard social distancing that could mitigate the COVID-19 transmission (Rias et al., 2020; Bechard et al., 2021; Muslih et al., 2021). Notably, these activities should be encouraged and viewed as primary preventative measures targeting COVID-19 immediately to protect its transmission (Muslih et al., 2021). Analysis of an environmental protection study in several countries such as South Korea, China, Italy, Iran, and the U.S. reported that over 50 million incidents were prevented by implementing good health practices (Hsiang et al., 2020). A previous study conducted in Indonesia only explored the health practices regarding the COVID-19 pandemic with sociodemographic, knowledge, and attitude variables without involving other important health-related factors (Muslih et al., 2021). Furthermore, no empirical survey has explored the health practices involved wearing masks, social distancing, and washing hands with specific determinant health factors during the COVID-19 pandemic among Indonesian citizens. Thus, empirical research of the citizens' health practices regarding the COVID-19 pandemic in Indonesia should immediately be explored.

Knowledge is critical for modifying health practices to assess public awareness in recognizing gaps and recognizing prevention efforts, particularly during a pandemic (Abdulkareem et al., 2020). A previous study in China revealed that a higher score of COVID-19 knowledge score was positively significant with good practice-not going to a crowded place and wearing the mask (Zhong et al., 2020). Additionally, even though the majority of the Indian citizen demonstrated adequate knowledge and appropriate health practices regarding the COVID-19 pandemic; however, they still have an issue with base myths and evidence. Remarkably, this issue suggested that citizens still need to assess and improve their knowledge (Narayana et al., 2020). Indonesia remains currently suffering from the COVID-19 transmission and the continuing battle against this pandemic (Rias et al., 2020; World Health Organization, 2020; Muslih et al., 2021), an association between knowledge concerning COVID-19 transmission and also the level of COVID-19-linked health practices need to be conducted.

The health belief model (HBM) is one of the theoretical guidelines for healthy lifestyle practices in epidemiology and behavioral study. Moreover, the HBM is common and widely accepted due to its high prediction accuracy (Rosenstock et al., 1988; Barakat & Kasemy, 2020). The HBM has a strong correlation with how citizens assess the challenges and difficulties they could encounter when adopting new practices related to health (Barakat & Kasemy, 2020). In a previous study conducted in India, behavioral change was examined in 638 (93.8%) of the respondents, and variables in the HBM demonstrated a positive correlation with behavioral change (Jose et al., 2021). As the health practices of the Indonesian citizens, particularly in East Java, are still comprehensive explored. At the same time, the HBM constructs may explain behavior in response to the COVID-19 pandemic and the involvement of HBM constructs.

A previous study analyzed health practices, which focused on assuming that having adequate knowledge and positive HBM alters one’s behavior (Barakat & Kasemy, 2020; Jose et al., 2021). These conditions will assist in determining what individuals currently do and what they should do to regulate their behaviors successfully (Barakat & Kasemy, 2020; Jose et al., 2021). Notably, it may represent an effective nursing method for enhancing behavior management by using HBM procedures for optimal practices regarding the COVID-19 pandemic. Therefore, our research aimed to determine the relationship between health practices (wearing a mask, social distancing, and handwashing) and their factors during the COVID-19 pandemic among Indonesian citizens.

Methods

Study Design

Primary information was obtained from members of the citizens in East Java, Indonesia, using online a community-based with cross-sectional study design.

Setting and Sample

Participants were selected from East Java, Indonesia, including rural and urban areas. The requirement for inclusion in the Google form were as follows: aged 17 until 65, able to communicate in Bahasa Indonesia, and willing to complete the informed consent form. We received 527 responses via the Google form. Therefore, a total of 522 citizens in East Java were included in the final survey. To estimated sample size, we used ClinCal application-online with incidents of not useful perceived benefit 42.9% and useful perceived benefit 57.1% (Showasinad Yehualashet et al., 2021), and an Alpha level of .05, and a power value of .85, which calculated a sample size of 422 participants. Considering an estimated dropout rate of 25%, we increased our total sample size to 527 participants, but our sample was excluded five participants which total participant in our study was 522 citizens. The five participants were omitted because they did not agree to click the box consent form.
Instruments
The survey of self-administered evaluations was developed based on prior investigations, which explored determining factors for health practices toward COVID-19 transmission (Rias et al., 2020; Muslih et al., 2021). There were components of a sociodemographic questionnaire that involved personal profile and characteristics of gender, age, marital status, occupation, educational level, income, and urbanicity.

Three items attributable to behaviors were used to determine health practices along with the Zhong et al.’s items (Zhong et al., 2020) and already back-translation into Bahasa (Rias et al., 2020). The content validity was determined by three experts in nursing who asked participants whether they had visited crowded places or use a face mask while outside their home in the week preceding the survey. We also assessed whether participants reported washing their hands after returning home or coming into contact with another person (yes = 1; and no = 0).

The respondents’ knowledge related to COVID-19 tested levels of knowledge involved data information regarding clinical presentations, transmission paths, and COVID-19 prevention and control consisted of 12-item. Response choices were “true; wrong; and do not know”; a correct response was worth one point, while an incorrect or “do not know” response was worth zero points (Zhong et al., 2020). The total possible knowledge score was 0–12; high level (score ≥10) and low level (score <9), which indicated that a higher score suggests greater familiarity with knowledge of COVID-19. The Indonesian version of the knowledge questionnaire had good internal consistency, with Cronbach’s alpha value for the KAP-COVID-19 analysis was 0.71 (Rias et al., 2020). Furthermore, Cronbach’s alpha coefficient was 0.79 for our study.

The constructs for the HBM were a five-Likert scale item (one being extremely dissatisfied and five being extremely dissatisfied), and during the study, strongly dissatisfied and dissatisfied were merged to form negative, and strongly agree and agree were combined to form positive, with a total of 27 items. The content validity was 0.91, and reliability of perceived susceptibility was 0.91, severity was 0.85, benefit was 0.92, barrier was 0.75, and self-efficacy was 0.95. The questionnaire’s content validity was determined by three experts in nursing. The survey tool was modified in response to their endorsements.

Data Collection
Convenience sampling was used to distribute an online survey via a Google Form connection via WhatsApp, Facebook, and Instagram as Indonesia’s most famous and accessible social media networks. All through the 10 July–30 August 2020 data collection period, we used various techniques to recruit as many respondents as possible from across the country. This entails leveraging researchers’ strategic online and personal networks, as well as engaging and circulating the survey with social media influencers and group lenders.

Data Analysis
Descriptive analyses were used to assess sociodemographic data, knowledge, and HBM between groups. The outcomes are showed as percentages (%) and frequency (n). The differences significance of categorical variables was calculated using a Chi-square. The relation between the three outcomes and the predictor variables was determined using a logistic regression model (sociodemographic, knowledge, and the HBM constructs).

At a p-value of 0.05, statistical SPSS vers. 25 IBM (Armonk, NY, USA) significance was established. OR and 95% confidence intervals were used to express the direction and intensity of the association.

Ethical Considerations
Ethical consideration was approved by the Survey and Behaviors Research Ethics Committee of Chakra Brahmanda Lentera (reference no.: 010/09/VI/EC/Candle/2020). Written informed consent was obtained from each participant before participation in this study. The confidentiality of the data was protected during the report, and the data were collected anonymously.

Results
Characteristics of the Respondents
Of 522 citizens, almost half were in the age range of 25–39 years (236, 45.2%). The majority of respondents were female (346, 66.3%), and more than half were married (304, 58.2%). Most participants were degree holders with either a monthly income of 2.5–5.9 million rupiah, of which 325 (62.3 %) and 402 (64.0 %) participants, respectively. The majority of them lived in urban areas (372, 71.3%) and were health care workers (233, 44.6%). It is also shown that 54.6% of the participants had good knowledge, 70.5% wore the mask, 61.3% did social distancing, and 69.2% washed hands. Moreover, most perceived susceptibility, severity, benefit, barrier, and self-efficacy, were 67.0%, 69.7%, 68.6%, 67.6%, and 76.4%, respectively (Table 1).

Relationships Demographic and Determinates Factors with Practices COVID-19
The overall characteristics of the respondents are summarized in Table 2. No significant differences (p < 0.05) were noted in gender, age, marital status, occupation, income, and urbanicity between all group outcomes. However, a significant difference in educational levels was revealed between all groups (Table 2). Notably, Table 3 shows that there were significant differences (p < 0.001) levels in knowledge, perceived susceptibility, severity, benefit, barrier, and self-efficacy between all groups of practice variables.
Table 1 Characteristics data of the respondents (n = 522)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Category</th>
<th>Frequency (n)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>176</td>
<td>33.7</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>346</td>
<td>66.3</td>
</tr>
<tr>
<td>Age</td>
<td>17-24</td>
<td>156</td>
<td>29.9</td>
</tr>
<tr>
<td></td>
<td>25-39</td>
<td>236</td>
<td>45.2</td>
</tr>
<tr>
<td></td>
<td>≥ 40</td>
<td>130</td>
<td>24.9</td>
</tr>
<tr>
<td>Marital status</td>
<td>Married</td>
<td>304</td>
<td>58.2</td>
</tr>
<tr>
<td></td>
<td>Unmarried</td>
<td>218</td>
<td>41.8</td>
</tr>
<tr>
<td>Occupation</td>
<td>Unemployed</td>
<td>156</td>
<td>29.9</td>
</tr>
<tr>
<td></td>
<td>Non-health professional</td>
<td>133</td>
<td>25.5</td>
</tr>
<tr>
<td></td>
<td>Health professional</td>
<td>233</td>
<td>44.6</td>
</tr>
<tr>
<td>Income (IDR)</td>
<td>&lt;2.5 million</td>
<td>211</td>
<td>40.4</td>
</tr>
<tr>
<td></td>
<td>2.5~5 million</td>
<td>222</td>
<td>42.5</td>
</tr>
<tr>
<td></td>
<td>6~10 million</td>
<td>66</td>
<td>12.6</td>
</tr>
<tr>
<td></td>
<td>&gt;10 million</td>
<td>23</td>
<td>4.4</td>
</tr>
<tr>
<td>Urbanicity</td>
<td>Rural</td>
<td>150</td>
<td>28.7</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>372</td>
<td>71.3</td>
</tr>
<tr>
<td>Education</td>
<td>ISCED &lt;3</td>
<td>197</td>
<td>37.7</td>
</tr>
<tr>
<td></td>
<td>ISCED ≥3</td>
<td>325</td>
<td>62.3</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Low (score &lt;9)</td>
<td>237</td>
<td>45.4</td>
</tr>
<tr>
<td></td>
<td>High (score ≥10)</td>
<td>285</td>
<td>54.6</td>
</tr>
<tr>
<td>Perceived susceptibility</td>
<td>Negative</td>
<td>172</td>
<td>33.0</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td>350</td>
<td>67.0</td>
</tr>
<tr>
<td>Perceived barriers</td>
<td>Negative</td>
<td>169</td>
<td>31.4</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td>353</td>
<td>68.6</td>
</tr>
<tr>
<td>Perceived benefits</td>
<td>Negative</td>
<td>164</td>
<td>31.4</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td>358</td>
<td>68.6</td>
</tr>
<tr>
<td>Perceived severity</td>
<td>Negative</td>
<td>158</td>
<td>30.3</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td>364</td>
<td>69.7</td>
</tr>
<tr>
<td>Perceived self-efficacy</td>
<td>Negative</td>
<td>123</td>
<td>23.6</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td>399</td>
<td>76.4</td>
</tr>
<tr>
<td>Wearing a mask</td>
<td>No</td>
<td>154</td>
<td>29.5</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>368</td>
<td>70.5</td>
</tr>
<tr>
<td>Social distancing</td>
<td>No</td>
<td>202</td>
<td>38.7</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>320</td>
<td>61.3</td>
</tr>
<tr>
<td>Washing hands</td>
<td>No</td>
<td>161</td>
<td>30.8</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>361</td>
<td>69.2</td>
</tr>
</tbody>
</table>

Note: IDR = Indonesian Rupiah; ISCED ≥3 = International Standard Classification of Education with ≥ secondary education

Specific Health Factors associated with COVID-19 of Health Practices

Importantly, the values of the AORs and 95% CIs of knowledge, perceived susceptibility, severity, benefit, barrier, and self-efficacy for practices, including using a mask, social distancing, and washing hands, are summarized in Table 4. The citizens with high knowledge (score ≥10) had a 3.24-fold higher risk (95% CIs = 2.62~6.89) of wearing a mask, and social distancing (AORs 2.54; 95% CIs = 1.47~4.39), as well as washing hands (AORs 2.1; 95% CIs = 1.19~3.75), compared with low levels of knowledge after adjusting the confounder variables. Citizens with positively perceived susceptibility had a 4.91-fold higher risk (95% CIs = 2.34~10.31) of wearing a mask, and social distancing (AORs 1.95; 95% CIs = 1.08~3.52), as well as washing hands (AORs 3.99; 95% CIs = 2.26~7.05), compared with negatively perceived susceptibility. Individuals with a positive level of perceived barriers had a 0.21-fold higher risk (95% CIs = 0.08~0.56) of wearing a mask, and social distancing (AORs 0.13; 95% CIs = 0.06~0.26), as well as washing hands (AORs 0.29; 95% CIs = 0.14~0.60), compared with negative levels of perceived barriers after adjustment for confounders. Also, participants with positive perceived benefits had a 5.37-fold higher risk (95% CIs = 2.55~11.29) of wearing a mask, and social distancing (AORs 1.80; 95% CIs = 0.99~3.30), as well as washing hands (AORs 2.73; 95% CIs = 1.52~4.90), compared with negatively perceived benefits. Moreover, a significant association was observed between being positively severity and self-efficacy of all domains of health practices related to COVID-19 after confounding variables control (Table 4).
Table 2 Relationships of distributions of demographic with practice toward COVID-19 pandemic (n = 522)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Practice, n (%)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wearing a Mask when Leaving Home</td>
<td>Social Distancing</td>
<td>Washing Hands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td>p</td>
<td>No</td>
<td>Yes</td>
<td>p</td>
<td>No</td>
<td>Yes</td>
<td>p</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>57</td>
<td>119</td>
<td>0.303</td>
<td>78</td>
<td>98</td>
<td>0.060</td>
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<td>89</td>
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<td>51</td>
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<td>25-39</td>
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<td>174</td>
<td>0.356</td>
<td>84</td>
<td>152</td>
<td>0.464</td>
<td>67</td>
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<tr>
<td>&lt;2.5 million</td>
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<td>147</td>
<td>0.152</td>
<td>92</td>
<td>119</td>
<td>0.249</td>
<td>69</td>
<td>142</td>
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</tr>
<tr>
<td>2.5-5 million</td>
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<td>158</td>
<td>0.360</td>
<td>80</td>
<td>142</td>
<td>0.640</td>
<td>65</td>
<td>157</td>
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</tr>
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<td>51</td>
<td>0.318</td>
<td>45</td>
<td>68</td>
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<td>18</td>
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<td>&gt;10 million</td>
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<td>14</td>
<td>60</td>
<td>0.609</td>
<td>9</td>
<td>14</td>
<td>0.609</td>
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<td>Urbanity</td>
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<td>Rural</td>
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<td>0.427</td>
<td>63</td>
<td>87</td>
<td>0.325</td>
<td>51</td>
<td>99</td>
<td>0.321</td>
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<td>0.626</td>
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<td>ISCED &lt;3</td>
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<td>73</td>
<td>252</td>
<td>0.775</td>
<td>45</td>
<td>280</td>
<td>0.862</td>
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</table>

Note: p-values were calculated using the Chi-square test, or Fisher’s exact test, where appropriate. A p-value of <0.05 indicates statistical significance. IDR = Indonesian Rupiah; ISCED = International Standard Classification of Education.

Table 3 Comparisons of knowledge and HBM with practices toward COVID-19 pandemic (n = 522)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Practice, n (%)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wearing a Mask when Leaving Home</td>
<td>Social Distancing</td>
<td>Washing Hands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td>p</td>
<td>No</td>
<td>Yes</td>
<td>p</td>
<td>No</td>
<td>Yes</td>
<td>p</td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (score &lt;9)</td>
<td>119</td>
<td>118</td>
<td>0.001</td>
<td>138</td>
<td>99</td>
<td>0.001</td>
<td>117</td>
<td>120</td>
<td>0.001</td>
</tr>
<tr>
<td>High (score ≥10)</td>
<td>35</td>
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<td>64</td>
<td>221</td>
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<td>44</td>
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<td>0.001</td>
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<tr>
<td>Perceived susceptibility</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>109</td>
<td>63</td>
<td>0.001</td>
<td>116</td>
<td>56</td>
<td>0.001</td>
<td>110</td>
<td>62</td>
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<tr>
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<td>305</td>
<td>0.001</td>
<td>86</td>
<td>264</td>
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<td>51</td>
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<td>0.001</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>11</td>
<td>158</td>
<td>0.001</td>
<td>15</td>
<td>154</td>
<td>0.001</td>
<td>15</td>
<td>154</td>
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<tr>
<td>Positive</td>
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<td>207</td>
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<td>Perceived benefits</td>
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<td></td>
<td></td>
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<tr>
<td>Negative</td>
<td>105</td>
<td>59</td>
<td>0.001</td>
<td>108</td>
<td>56</td>
<td>0.001</td>
<td>99</td>
<td>65</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Positive</td>
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<td>263</td>
<td>0.001</td>
<td>62</td>
<td>296</td>
<td>0.001</td>
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<td>Perceived severity</td>
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<td></td>
</tr>
<tr>
<td>Negative</td>
<td>115</td>
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<td>0.001</td>
<td>130</td>
<td>28</td>
<td>0.001</td>
<td>107</td>
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<td>&lt;0.001</td>
</tr>
<tr>
<td>Positive</td>
<td>39</td>
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<td>0.001</td>
<td>72</td>
<td>292</td>
<td>0.001</td>
<td>54</td>
<td>310</td>
<td>0.001</td>
</tr>
<tr>
<td>Perceived self-efficacy</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Negative</td>
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<td>31</td>
<td>0.001</td>
<td>84</td>
<td>39</td>
<td>&lt;0.001</td>
</tr>
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<td>Positive</td>
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<td>289</td>
<td>0.001</td>
<td>77</td>
<td>322</td>
<td>&lt;0.001</td>
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</table>

Note: p-values were calculated using the Chi-square test, or Fisher’s exact test, where appropriate. A p-value of <0.05 indicates statistical significance.
Table 4 Adjusted beta-coefficients and 95% confidence intervals (CIs) of knowledge and HBM with participants’ practices toward COVID-19 pandemic (n = 522)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Wearing a Mask when Leaving Home</th>
<th>Social Distancing</th>
<th>Washing Hands</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unadjusted OR (95% CI)</td>
<td>AOR (95% CI)</td>
<td>Unadjusted OR (95% CI)</td>
</tr>
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<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (score &lt;9)</td>
<td>1.00 (1.00)</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>High (score ≥10)</td>
<td>7.20 (3.24)</td>
<td>4.81 (2.54)</td>
<td>5.34</td>
</tr>
<tr>
<td></td>
<td>(4.66–11.14)**</td>
<td>(3.29–7.04)**</td>
<td>(5.34–8.05)**</td>
</tr>
<tr>
<td>Perceived susceptibility</td>
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<td></td>
</tr>
<tr>
<td>Negative</td>
<td>1.00 (1.00)</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Positive</td>
<td>11.73 (4.91)</td>
<td>6.36 (1.95)</td>
<td>10.40</td>
</tr>
<tr>
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<td>(7.55–18.22)**</td>
<td>(4.26–9.50)**</td>
<td>(6.77–15.99)**</td>
</tr>
<tr>
<td>Perceived barriers</td>
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<tr>
<td>Negative</td>
<td>1.00 (1.00)</td>
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<td>1.00</td>
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<tr>
<td>Positive</td>
<td>0.10 (0.21)</td>
<td>0.09 (0.13)</td>
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<td>(0.05–0.20)**</td>
<td>(0.05–0.15)**</td>
<td>(0.08–0.24)**</td>
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<td>1.00 (1.00)</td>
<td>1.00</td>
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<tr>
<td>Positive</td>
<td>11.22 (5.37)</td>
<td>5.42 (1.80)</td>
<td>7.27</td>
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<tr>
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<td>(7.24–17.40)**</td>
<td>(3.63–8.08)**</td>
<td>(4.80–11.02)**</td>
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<td>Perceived severity</td>
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</tr>
<tr>
<td>Negative</td>
<td>1.00 (1.00)</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Positive</td>
<td>22.30 (10.94)</td>
<td>18.83 (10.21)</td>
<td>12.04</td>
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<tr>
<td></td>
<td>(13.75–36.12)**</td>
<td>(5.44–19.19)**</td>
<td>(7.74–18.73)**</td>
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<td>Perceived self-efficacy</td>
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<td></td>
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<tr>
<td>Negative</td>
<td>1.00 (1.00)</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Positive</td>
<td>15.17 (8.02)</td>
<td>7.80 (2.79)</td>
<td>9.01</td>
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<tr>
<td></td>
<td>(9.34–24.62)**</td>
<td>(1.43–5.45)**</td>
<td>(5.72–14.18)**</td>
</tr>
</tbody>
</table>

Note: Data were presented using OR and AOR. p-values were calculated using logistic regression. AOR adjusted for gender, age, marital status, occupation, income, education levels, and urbanicity. A p-value of < 0.05, ** p-value of < 0.01, *** p-value of < 0.001 indicates statistical significance.

Discussion

To our knowledge, no research has examined the determinants of health practices and their related factors in the East Java population during the COVID-19 pandemic, especially with an almost equal sample population from the healthcare and non-healthcare field. Although a previous study explored practices, it did not evaluate the perception of health belief toward the COVID-19 pandemic (Muslih et al., 2021). Our findings indicated that citizens who had high levels of knowledge and positive levels of all items of the health belief model of COVID-19 had good practice of wearing the mask, social distancing, and washing hands.

Prior cross-sectional reports revealed that good knowledge was significantly and positively correlated with practice against the COVID-19 transmission (Bechard et al., 2021; Muslih et al., 2021). It is in line with another study; approximately 52.9% of the individuals had positive knowledge regarding COVID-19 among Ethiopian citizens (Shewasinad Yehualashet et al., 2021). Moreover, the current study showed that citizens with good levels of knowledge have a 3.24-fold, 2.54-fold, and 2.11-fold higher risk of wearing a mask, social distancing, and washing hands compared with low levels of knowledge after adjusting the confounder variables, respectively. Another study reported that a high level of knowledge was significantly related to social distancing, wearing a mask (Zhong et al., 2020) in China, and washing hands (Bates et al., 2020) in Ecuador. Moreover, reports study in Malaysia showed that higher levels of knowledge were consistently positively using a mask and not going to a crowded place, but not significantly with washing hands or using the hand sanitizer. Inconsistent findings have several reasons, including this variance in knowledge levels may indicate the country’s current COVID-19 continuous updating.

Furthermore, though health authorities have regularly disseminated information since the disease was first discovered, there has also been an increase in false and inaccurate information. Remarkably, the information overload may have resulted in uncertainty and difficulty ascertaining accurate information (Azlan et al., 2020). Consequently, healthcare providers, including nurses, should be responsible for providing comprehensive health information through counseling programs for social distancing, wearing masks, and handwashing, to successfully boost the against COVID-19 transmission.

Interestingly, the citizens’ belief of COVID-19 transmission was formulated from HBM domains. A report indicated that the health practices of the Indonesian citizens, particularly in East Java, are still the gap on the
belief related to this pandemic. Since Indonesian citizens have low adherence to health practices with a prevalence of 12%-24%, which are now critical factors for COVID-19 transmission (Muslih et al., 2021), the communities need to ensure and apply HBM constructs on preventive measures of COVID-19 infections (Shewasniad Yehualashet et al., 2021). The HBM predicts that a greater perceived susceptibility increases the probability of engaging in health-promoting behaviors such as social distancing, proper face mask use, and hand hygiene. The perceived susceptibility refers to an individual’s subjective evaluation of the risk associated with COVID-19. Individuals who believe they are at low risk of contracting a disease are more likely to participate in unhealthy conduct. In comparison, anyone who thinks they are at risk of experiencing an infection is more likely to take steps to mitigate the risk (Onoruiza et al., 2015). Remarkably, perceived benefits contribute to an individual’s evaluation of the importance or effectiveness of participating in a health-promoting behavior to decline disease risk.

If a judge believes that a specific action can minimize vulnerability to or severity of a health condition, the citizen is likely to repeat the behavior regardless of empirical evidence about the action’s effectiveness. Linear with the previous research in India, most participants found it incredibly easy to prevent infection if they followed the health authorities’ advice (93.8%) and followed the same (Jose et al., 2021). Indeed, the HBM approach assumes that health-related practice is often affected by an individual’s perceived barrier and self-efficacy from healthy activities, specifically COVID-19 preventive behavior (Tadesse et al., 2020). Similar to our results, media barriers were primarily the perceived barriers, not disease prevention barriers. The rapid introduction of various media introduced public uncertainty about behavioral changes (Jose et al., 2021). Overall effective awareness about the disease information was imperative. There were the programs that the authorities trusted, activities and information that were offered, and media resources aimed at improving health care (Rosenstock et al., 1988; Carpenter, 2010; Jose et al., 2021). Consequently, these findings and periodic evaluations of public HBM domains can be used to make policy preparation and used in the nursing intervention in the event of subsequent epidemic waves, thus avoiding the spread of a new pandemic.

The study’s limitation is that data were collected via social media, which might have introduced bias due to the lack of certain target populations. Another constraint is that responses via Google’s online forms could not monitor internet protocols (IP) addresses (Sharma & Tikka, 2020). However, comparable surveys have been performed (Azlan et al., 2020; Rias et al., 2020; Jose et al., 2021; Muslih et al., 2021) due to the impossibility of conducting a population survey directly due to social distancing. Another limitation was the lack of volunteers from East Java, especially rural residents, whom future studies could attempt to recruit specifically, as this may impair the findings’ generalizability. However, we used multiple logistics regression analysis to predict a large population behavior with possible confounding variables, thus eliminating the consequence of unequal distribution.

Conclusion

Perceived self-efficacy, susceptibility, barrier, severity, and benefit were strongly related to health practices, including social distancing, washing hands, and wearing masks after adjusting the sociodemographic variables as confounding factors. The findings can be used for nurses and program managers to create successful baseline reference thresholds and establish goals in Indonesia. Also, this finding indicated that nurse educators and health professionals play critical roles in identifying and promoting treatment-targeted approaches, such as increasing knowledge and implementing the HBM constructs to improve individual practices regarding the COVID-19 pandemic among citizens in Indonesia.

Declaration of Conflicting Interest

All the authors declare that they have no competing interests.

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Authors’ Contributions

Conception: EW, CUW, YAR, YM, SS, DLW. Investigators: EW, CUW, DLW. Design: EW, CUW, YAR, YM. Acquisition: EW. Analysis: EW, CUW, YAR, YM. Interpretation: EW, CUW, YAR, YM, DLW. Drafted manuscript: EW, CUW, YAR, YM, SS, DLW. Critically revised manuscript: EW, CUW, YAR, YM, SS, DLW. Giving final approval: EW, CUW, YAR, YM, SS, DLW. All authors agreed to be fully responsible for ensuring the integrity and accuracy of the work and approved the final version of the article.

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Data Availability Statement
All data generated or analyzed during this study are included in this published article. The data sets are not publicly available due to the information that could compromise research participants’ privacy.

References


Willingness of university nursing students to volunteer during the COVID-19 pandemic in Brunei Darussalam

Amal Atiqah Hamizah Hj Abdul Aziz, Khadizah H. Abdul-Mumin*, and Hanif Abdul Rahman*

Abstract

Background: Volunteering among nursing students has become a valuable resource during an outbreak to help alleviate the strain in nursing staff shortages. However, evidence of willingness to volunteer is scarce, particularly in Asian countries.

Objective: To study Bruneian university nursing students’ willingness to volunteer during a pandemic in Brunei.

Methods: An online cross-sectional study was conducted at Universiti Brunei Darussalam from January to February 2021. A self-administered questionnaire was used to measure willingness factors, including motivational factors, barriers, enablers, and level of agreement to volunteer during the COVID-19 pandemic. Sub-group inferential analysis was applied.

Results: 72 participants were included in this study. 75.0% of whom were willing to volunteer during the COVID-19 pandemic. Factors that influenced the willingness of nursing students to volunteer were marital status (p <0.001), year of study (p <0.001), altruism (p <0.001), personal safety (p <0.001), and knowledge level (p <0.001).

Conclusion: Nursing students are an invaluable resource, and they are highly willing to be part of disaster management. Training and planning should prepare the nursing students for disaster or pandemic readiness and integrated them into the undergraduate nursing curriculum. Align with this, safety aspects of nursing students during volunteering should also be considered, including the provision of childcare assistance, sufficient personal protective equipment, vaccination, and prophylaxis to the volunteers.

Keywords

COVID-19; willingness; nursing; students; volunteerism; online survey; nursing; Brunei Darussalam

During COVID-19 (Coronavirus Disease 2019) pandemic, nursing students were given the option to volunteer by undertaking extended placements in hospitals to overcome the reduction in manpower and overwhelming patient demand (Hayter & Jackson, 2020; Swift et al., 2020). COVID-19 has quickly become a global pandemic, with 129,215,179 confirmed cases worldwide, as stated by the World Health Organization (2021). Although registered nurses are the largest workforce during the COVID-19 pandemic, diverse workforces have to temporarily halt their jobs to contain the virus; however, this did not apply to healthcare professionals as they were required to continue their jobs in fighting and prevent the spread of the virus (Pogoy & Cutamora, 2021). This was also applied to nurses as they form the largest sector in a healthcare system; thus, it was impertinent that their availability in the healthcare settings during the pandemic was ensured (Natan et al., 2015). Although registered nurses are important healthcare providers, given their ability to offer direct care and support services, there is usually a nursing shortage (Blackwood, 2017). Disasters such as disease pandemics make nursing shortages more critical as such disasters increase patient demand, often exceeding the operational capacity of...
healthcare facilities (Blackwood, 2017; McNeill et al., 2020).

Volunteering among nursing students has become a valuable resource during an outbreak. COVID-19 is a highly infectious disease that has quickly become a global pandemic. This pandemic has caused a strain in existing nursing staff shortages due to overwhelming patient demand. Evidence of willingness to volunteer is scarce, particularly in Asian countries. Therefore, this study aims to investigate the willingness of university nursing students to volunteer during the COVID-19 pandemic.

Factors influencing willingness of nursing students to volunteer: Literature review

Willingness to volunteer - From a Spanish study done on 102 Spanish medical and nursing students from 11 universities, 74.2% were willing to volunteer during a crisis (Cervera-Gasch et al., 2020). Furthermore, a survey in Ireland in the year 2019 also found that 59% of their survey participants were willing to volunteer during an infectious disease outbreak (O’Byrne et al., 2020). This statement is further supported by a cross-sectional study by Yu et al. (2020), in which 85.6% of their nursing and medical student participants would gladly volunteer during the COVID-19 outbreak. Similarly, all 40 Spanish nursing students from the Martin-Delgado et al. (2021) study stated that they were willing to volunteer during the COVID-19 pandemic. These claims are further evidenced by a study on 711 Denmark medical students, which within two weeks of COVID-19, all master students and 70% of their bachelor students volunteered to work in nine pandemic emergency departments as temporary residents, ventilator therapy assistants, or nursing assistants (Rasmussen et al., 2020).

Moreover, Astorp et al. (2020) also found that 81.6% of their sample of Danish medical students wanted to be a part of the healthcare workforce during the pandemic.

Sociodemographic - According to Yu et al. (2020), gender and year of study play a role in influencing willingness to volunteer during a pandemic among nursing students. In a study done in China, it was found that female nursing students were more likely to volunteer during a crisis as compared to male nursing students, and junior nursing students were more willing to volunteer compared to seniors (Yu et al., 2020).

Moral obligation - One of the most common factors that positively influence volunteering among healthcare students is a moral obligation. A study done in the United Kingdom by O’Byrne et al. (2020) reported that 81% of their participants agreed that healthcare professionals have a moral obligation to report for duty during a pandemic, and similarly, health students should be encouraged to volunteer as well. This finding is supported by Yu et al. (2020), which 348 out of 552 Chinese medical students agree that volunteering during a pandemic should be based on professional obligations. Another study that supports these findings is a cross-sectional study done by Huapaya et al. (2015) conducted in Peru, where 77% agree to such statements on moral obligations. Similarly, final-year Spanish nursing students also expressed their feelings of commitment and moral responsibility to society in combatting the COVID-19 pandemic (Gómez-Ibáñez et al., 2020). From these results, it can be said that moral obligations among healthcare students know no nationality, and moral obligation can be seen among these future healthcare professionals worldwide.

Safety - Another important factor influencing nursing students’ decision to volunteer is the provision of necessary personal protective equipment (Martin-Delgado et al., 2021). A Canadian study reported that 77.4% of their participants would volunteer if provided protective garments (Yonge et al., 2010). In addition, the majority of the nursing students in Yonge et al. (2010) agreed that volunteers should be given first access to vaccines and scarce health resources to ensure their safety (Yonge et al., 2010). The strong need that the volunteers expressed for the protective tools are due to the fear of contracting the virus, risking their safety and the safety of their families, and may potentially even lead to death (Astorp et al., 2020). This is supported by a study by Patel et al. (2020), in which British medical students expressed their concern for their safety, especially with the constant media reports of health workers dying due to the virus.

Tasks - In the act of volunteering during a pandemic, it was found that Chinese medical were more willing to volunteer if the tasks given to them were low hazard tasks such as feeding patients, doing administrative work, providing refreshments to staff, working in the community staffing phone lines, or doing volunteering services such as checking on neighbours or buying groceries for elders or those who are ill (Yu et al., 2020). In contrast, 83% of 846 medical students in Spain asserted that the roles given to them while volunteering during a pandemic should still be hospital-related (Huapaya et al., 2015).

Preparedness - One factor that negatively influences willingness to volunteer during a pandemic is the lack of preparedness. 65.3% of the sample from Cervera-Gasch et al. (2020) study felt like they were unprepared to attend to patients during an outbreak. Similarly, Spanish nursing students also raised doubts about their preparedness to care for patients during the COVID-19 pandemic (Martin-Delgado et al., 2021). Furthermore, a study on medical students in the United States showed that before completing their disaster preparedness elective, 70% of their students felt unprepared to participate in an emergency such as that of an outbreak, as compared to 11% after the elective was completed (O’Byrne et al., 2020).

As COVID-19 is still considered a new phenomenon, the number of studies conducted regarding the topic is quite scarce. From the studies available, however, it can be seen that the majority of the studies are done in western countries. To address this gap in the literature, this research aimed to study Bruneian university nursing students’ willingness to volunteer during the COVID-19 pandemic.
Methods

Study Design
This was a cross-sectional online survey conducted at the Institute of Health Sciences (IHS), Universiti of Brunei Darussalam, from January to February 2021.

Sample/ Participants
Considering the small number of nursing students (approximately 100 students), all the nursing students were recruited. The criteria for participants to be eligible in the study included: 1) students undertaking the nursing degree program, 2) students studying in IHS, UBD, 3) enrolled in IHS during the COVID-19 pandemic. Students enrolled outside of UBD such as PB and IBTE and are taking other health sciences programs such as Midwifery, Medicine, Dentistry, Biomedical Sciences, and Pharmacy were not included as part of the sample.

Instrument
The English-language online questionnaire was adapted from Blackwood (2017), a 26-item instrument that measures the willingness of volunteering during disasters or public health emergencies. The tool is validated by the original developer and is available in the public domain via its published article (Blackwood, 2017). Relevant demographic information such as gender, age, marital status, and year of study was collected, along with motivational factors to enrol in nursing, barriers, enablers, and level of agreement of nursing students to be encouraged to volunteer during a disaster.

Data Collection
Considering the small population of IHS with only approximately 100 students, all eligible nursing students in IHS were recruited for the study using the participant selection method. As this study involved human samples, approval from IHSREC was needed before data collection was commenced. After the approval was obtained, the list of students’ email addresses was requested from the University Liaison Office/IHS administration office. The questionnaire was then sent to the students via their webmail. The questionnaire was done through an online platform due to the ongoing COVID-19 situation in which face-to-face contact should be reduced to a minimum.

Data Analysis
Descriptive statistics (frequency and percentage) was computed to describe the demographic and outcome variables. Sub-group analysis (Fisher’s exact test) was applied to determine the association of outcome variable (willingness to volunteer) towards motivational factors, barriers, enablers, and level of agreement, and demographic factors. All analysis was performed using RStudio 1.1.383.

Ethical Consideration
The research procedure was assessed by the ethics committee of Universiti Brunei Darussalam (UBD/PAPRSB IHSREC/2020/63). Digital consent was obtained prior to joining the study.

Results
Sociodemographic Data
A total of 72 nursing students from Universiti Brunei Darussalam were included, representing a response rate of 65.5%. Out of the 72 participants, 54 (75.0%) showed that they were willing to volunteer in the event of a pandemic. The majority of the participants are first-year students (40.3%), followed by second-year (20.8%), third-year (19.4%), and fourth-year (18.1%). Most (77.8%) of the participants are female, 65.0% around the age range of 18-22 years old, and 88.9% are single (Table 1).

Table 1 Demographic factors in association with willingness to volunteer during COVID-19 among nursing students (n = 72)

<table>
<thead>
<tr>
<th>Willingness to volunteer during COVID-19</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>54</td>
<td>18</td>
<td>72</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 22</td>
<td>33</td>
<td>13</td>
<td>47</td>
</tr>
<tr>
<td>&gt;22</td>
<td>13</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>39</td>
<td>15</td>
<td>54</td>
</tr>
<tr>
<td>Male</td>
<td>7</td>
<td>9</td>
<td>16/22</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>40</td>
<td>23</td>
<td>64/88</td>
</tr>
<tr>
<td>Married</td>
<td>6</td>
<td>1</td>
<td>7/11</td>
</tr>
<tr>
<td>Year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>21</td>
<td>8</td>
<td>29/40</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>6</td>
<td>15/21</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>5</td>
<td>14/19</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>5</td>
<td>13/18</td>
</tr>
</tbody>
</table>

a Fisher’s exact test  n = frequency  % = percentage
In terms of willingness to volunteer, there was a significant association between years of study and marital status. The participants who were married (85.7%) were more willing to volunteer (p < 0.001), and participants in their first year of study (72.4%) were more willing to volunteer compared to those who were in their second year (53.3%) (p < 0.001) and also was more willing than third and fourth-year students. There were no significant differences in age and gender concerning nursing students volunteering during the pandemic (Table 1).

**Motivational factor in enrolling in nursing**

There was a significant association between motivational factors and willingness to volunteer (p < 0.001). We observed that the highest motivational factor for the participants to enrol in nursing, related to willingness to volunteer during COVID-19 was because of job security (75.0%), followed by helping others to cope with illness (74.1%), earning a good salary (73.0%), giving their life a sense of meaning (72.4%), they have a calling (71.4%), wanting to work in a caring occupation (71.4%), job flexibility (71.4%), wanting to help people (69.2%), feel that they can advance in the field of healthcare (68.0%), interested in science (66.0%), and lastly because the flexible educational requirements permit them to finish schooling quickly (52.6%) (Table 2).

**Table 2** Motivational factors to enrol in nursing associated with willingness to volunteer during COVID-19 among nursing students (n=72)

<table>
<thead>
<tr>
<th>Motivational factors</th>
<th>Willingness to volunteer during COVID-19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (n (%))</td>
</tr>
<tr>
<td>The occupation offers job security</td>
<td>33 (75.0)</td>
</tr>
<tr>
<td>I want to help others cope with illness</td>
<td>43 (74.1)</td>
</tr>
<tr>
<td>I can earn a good salary</td>
<td>27 (73.0)</td>
</tr>
<tr>
<td>Nursing gives me a sense of meaning</td>
<td>34 (72.3)</td>
</tr>
<tr>
<td>I have a calling</td>
<td>20 (71.4)</td>
</tr>
<tr>
<td>I want to work in a caring occupation.</td>
<td>40 (71.4)</td>
</tr>
<tr>
<td>The occupation offers job flexibility</td>
<td>25 (71.4)</td>
</tr>
<tr>
<td>I want to help people</td>
<td>45 (69.2)</td>
</tr>
<tr>
<td>I feel that I can advance in the field of healthcare</td>
<td>34 (68.0)</td>
</tr>
<tr>
<td>I am interested in science</td>
<td>35 (66.0)</td>
</tr>
<tr>
<td>The flexible educational requirements permit me to finish my schooling quickly</td>
<td>10 (52.6)</td>
</tr>
</tbody>
</table>

* a Fisher’s exact test  
* n = frequency  
* % = percentage

**Barriers**

When examining the factors that prevent the participants from volunteering during a pandemic, the highest barrier found was having responsibility for dependent children (53.6%). Fear for personal safety and well-being (57.5%), type of disaster (60.0%), fear for the safety and well-being of family members (65%), lack of disaster training and education (65.6%), and being a student nurse (67.7%) have also been found to have a significance in acting as barriers for the nursing students from volunteering during COVID-19 (p < 0.001) (Table 3).

**Table 3** Barriers associated with willingness to volunteer during COVID-19 among nursing students (n=72)

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Willingness to volunteer during COVID-19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (n (%))</td>
</tr>
<tr>
<td>Being a nursing student</td>
<td>21 (67.7)</td>
</tr>
<tr>
<td>Lack of disaster training and education</td>
<td>40 (65.6)</td>
</tr>
<tr>
<td>Fear for the safety and well-being of my family members</td>
<td>39 (65.0)</td>
</tr>
<tr>
<td>Type of disaster</td>
<td>24 (60.0)</td>
</tr>
<tr>
<td>Fear for my personal safety and well-being</td>
<td>23 (57.5)</td>
</tr>
<tr>
<td>Responsibility for dependent children</td>
<td>15 (53.6)</td>
</tr>
</tbody>
</table>

* a Fisher’s exact test  
* n = frequency  
* % = percentage

**Enablers**

The results shown in Table 4 indicate that having access to safe reliable childcare (76.3%), the availability of vaccines and prophylaxis to the volunteers (71.7%), and their family members (71.2%), the provision of appropriate personal protective equipment (70.5%), having more knowledge about disaster response (70.5%), knowing their families would be safe (69.8%), and knowing they would be safe from illness or harm (67.2%) are positively correlated to the willingness of the participants to volunteer.
Table 4 Situational factors associated with willingness to volunteer during COVID-19 among nursing students (n=72)

<table>
<thead>
<tr>
<th>Factors that increase willingness</th>
<th>Willingness to volunteer during COVID-19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes n (%)</td>
</tr>
<tr>
<td>If I had access to safe reliable childcare</td>
<td>29 (76.3)</td>
</tr>
<tr>
<td>If vaccines and prophylaxis were available to me</td>
<td>43 (71.7)</td>
</tr>
<tr>
<td>If vaccines and prophylaxis were provided to my family members</td>
<td>42 (71.2)</td>
</tr>
<tr>
<td>If I were provided with appropriate personal protective equipment (PPE)</td>
<td>43 (70.5)</td>
</tr>
<tr>
<td>If I had more knowledge about disaster response</td>
<td>43 (70.5)</td>
</tr>
<tr>
<td>If I knew my family would be safe</td>
<td>44 (69.8)</td>
</tr>
<tr>
<td>If I knew I would be safe from illness or harm</td>
<td>39 (67.2)</td>
</tr>
</tbody>
</table>

a Fisher’s exact test  n = frequency  % = percentage

Encourage nursing students to volunteer

The research findings show that 47.2% of respondents agreed (strongly agree 11.1%; somewhat agree 36.1%) that nurses should be encouraged to volunteer during a disaster. Conversely, few participants (16.5%) disagreed (strongly disagree 8.3%; somewhat disagree 8.2%) that nursing students should be encouraged to volunteer during a disaster, and 33.3% neither agree nor disagree (Figure 1).

![Figure 1 Summary of responses for the level of agreement on encouraged to volunteer during a disaster (n=72)](image)

Discussion

With the presence of a pandemic, staff nurses are stretched thin due to the lack of staff, which is why recruiting volunteers, especially nursing students, is recommended to overcome this problem (Blackwood, 2017; Hayter & Jackson, 2020; Iserson, 2020; McNeill et al., 2020; Swift et al., 2020; Quisao et al., 2021). However, from previous research, it can be observed that obtaining volunteers during an emergency can indeed be a challenge (Blackwood, 2017). Therefore, the key objective of this paper was to assess the factors that may influence the willingness of university nursing students to volunteer during a pandemic.

Prevalence of willingness to volunteer

Overall, the prevalence of university nursing students volunteering in Brunei was 75.4%. The findings were similar to a study by Blackwood (2017) among bachelor nursing students in the United States; however, Blackwood (2017) achieved a higher percentage of willingness (86.5%) as compared to the present study. Additionally, these results were similar to studies conducted on medical students from China, and Peru, where the overall willingness to volunteer during a pandemic was 63% and 77%, respectively (Huapaya et al., 2015; Yu et al., 2020). The difference in prevalence between these countries may be due to the different severity of the situations presented to the nursing students during the survey. For example, Blackwood (2017) had the highest prevalence of willingness to volunteer due to the situation presented to the students, which were general emergencies, admittedly the most varied and least deadly situation from the rest. For Huapaya et al. (2015) study, it was conducted during avian influenza, which is a slightly less deadly viral infection than the coronavirus, reaching only a total death
count of 455 from the year 2003-2020 (World Health Organization, 2020). For Yu et al. (2020) and the present study, however, yielded the least prevalence of willingness to volunteer among student nurses due to the deadly nature of the COVID-19 infection. This is evidenced by the high death count of 2,804,120 from December 2019 to March 2021 (World Health Organization, 2021).

Besides the severity of the situation, demographic data is also one of the main predictors of willingness to volunteer. The results of this study demonstrated that marital status plays a role in affecting willingness to volunteer among nursing students; specifically, participants who were married were more likely to volunteer during a pandemic (85.7%). The reason behind this may be because these participants are among those who were taking their nursing degree while in-service, which means that they have more knowledge and experience in volunteering during emergencies.

Furthermore, as seen in Table 1, the willingness to volunteer during a pandemic decreased with seniority. This trend is similar to the results in Yu et al. (2020), in which junior medical students were more willing to volunteer during a pandemic as compared to their seniors.

Among the participants, women had a higher response rate of 77.8% compared to men, which is a common trend found in various studies due to the higher number of women than men entering health-related courses (Dyson et al., 2017). Interestingly, despite the higher response rate of women than men, the results showed that gender has no significance in influencing nursing students to volunteer during a pandemic, as men were as likely willing to volunteer during a pandemic as women (p=0.077). These findings, however, differ from a study conducted by Yu et al. (2020) on Chinese medical students who noted that female students were more likely to volunteer during COVID-19 than their male colleagues.

Factors that promote volunteerism nursing students
From the results of the present study, multiple factors were significant in promoting a sense of volunteerism among student nurses, which have been grouped into altruism, family, and personal reasons.

First of all, altruism is one of the most significant motivating factors for nursing students to volunteer during a pandemic (Blackwood, 2017; Gouda et al., 2020; O’Byrne et al., 2020). This can also be seen in the results of this study, in which almost half of the participants agreed that nursing students should be encouraged to volunteer in the case of an emergency such as a pandemic. Moreover, traits of altruism can be seen in the participants that were willing to volunteer by their intentions to join the nursing workforce due to reasons such as wanting to care for others (71.4%) and helping people (69.2%), especially those who are suffering from illnesses (74.1). These traits of altruism are not only limited to Bruneian nursing students as even American nursing students that were willing to volunteer from Blackwood (2017) study also entered nursing due to their intentions in wanting to help people, help others cope with illness, and working in a caring occupation.

Secondly, from the results of this study and Blackwood (2017), another motivating factor for nursing students to volunteer is the reassurance for the safety of their families, including the availability of safe childcare and the provision of vaccines for their families. Furthermore, the majority (92%) of the Spanish medical and nursing students from Cervera-Gasch et al. (2020) study also expressed their concerns regarding the safety of their families in the event of a pandemic. The reason behind this may be because while volunteering, the nursing students would be putting their lives on the line and may not be able to return home to care for their families and children. If the volunteers were allowed to go home to rest, there is also the risk of infecting their families, which is why providing the family members of the volunteers with vaccine and prophylaxis may be required to ease the worries of the volunteers, hence increasing their willingness to volunteer (Cervera-Gasch et al., 2020).

Finally, guaranteeing the safety of the volunteers by providing personal protective equipment and giving access to volunteers have been found to promote volunteerism among student nurses. From the present study, 67.2% of the sample population expressed their concerns regarding their safety if they were to volunteer due to the contagious and deadly nature of the virus. To overcome this, providing access to vaccines and prophylaxis to the volunteers has been found to increase the willingness of student nurses to volunteer, as evidenced by Blackwood (2017). In addition to the provision of vaccines as a means of personal defence against the pandemic, providing the volunteers with Personal Protective Equipment has also been found to increase the willingness of nursing students to volunteer as it decreases the risk of the volunteers contracting the disease (Blackwood, 2017). With the provision of these limited health resources given to the volunteers as a priority, it increases the willingness of nursing students to volunteer during a disaster as they are given the tools to protect themselves from the deadly infection.

Factors that inhibit volunteerism in nursing students
Similar to the presence of enabling factors, multiple factors inhibited volunteerism among student nurses, which have been grouped into family factors, personal safety, and knowledge.

From the results of this study, it was found that family was the biggest barrier for nursing students from volunteering during the COVID-19 pandemic, which included having the responsibility of dependent children (53.6%). Blackwood (2017) had similar findings, where willingness to volunteer and have dependent children were negatively correlated, indicating that having dependent children decreased the willingness of the participants from volunteering during a pandemic. This may be the reason behind safe reliable childcare being the highest enabling for nursing students to volunteer. Furthermore, fear for the safety of their families also inhibited volunteerism among
nursing students, as evidenced in the results of this study (65.0%). The results align with Cervera-Gasch et al. (2020), where 92% of their Spanish medicine and nursing students admitted that they were afraid of infecting their families. Moreover, Blackwood (2017) also had similar findings where 73.6% of their participants were less likely to volunteer due to the fear for the safety of their families.

Another barrier identified for willingness to volunteer during the COVID-19 pandemic is fear of personal safety (Blackwood, 2017; Cervera-Gasch et al., 2020). Out of the 72 participants in this study, only 57.5% of them were willing to volunteer during a pandemic due to fear of their safety. Similarly, only 50.9% of participants from Blackwood (2017) were willing to volunteer during an emergency due to the same reasons. Additionally, participants (38.9%) from Cervera-Gasch et al. (2020) also admitted that they were afraid of being infected by the deadly virus of COVID-19. The reason behind the concerns may be due to the high number of infected cases among the healthcare team, such as that in Spain, where 14% of the confirmed cases were health workers (Iserson, 2020).

Finally, the lack of disaster education has also been identified as an inhibiting factor for volunteerism among nursing students. This may be the reason behind the participants claiming that being a student also acts as a barrier, as they may feel that they are not confident enough and are unprepared to volunteer during such a critical situation. This is supported by AlSaif et al. (2020) where they found a positive correlation between willingness and mean total perceived-competence score. Cervera-Gasch et al. (2020) also found that 63% of their respondents admitted that they were not ready to attend patients during a pandemic as they did not feel confident to do so due to lack of required knowledge, which may even potentially risk the safety of the patients and the students, as reported by Mortelmans et al. (2015). Similarly, O’Byrne et al. (2020) also stated that 70% of their participants, consisting of American medical students, felt unprepared to participate during a pandemic before they commenced their disaster management elective; however, the number was reduced to 11% after their elective was completed.

**Strategies and recommendations**

Therefore, to increase the willingness of nursing students to volunteer during an outbreak, institutions may need to introduce disaster management in their nursing curriculum to provide the students with the knowledge and prepare their students for future outbreaks.

Furthermore, the Ministry of Health could also contribute to increasing the willingness of university nursing students to volunteer during future disasters by providing adequate personal protective equipment, vaccination, and prophylaxis to ease the worries of the volunteers from contracting the virus. Moreover, if personal protective equipment is inadequate, and vaccination and prophylaxis are unavailable yet, the health ministry could provide staff houses for the volunteers to reduce their contacts with their families, reducing the risk of spreading the virus to the families of the volunteers (Astorp et al., 2020; Martin-Delgado et al., 2021).

Moreover, to overcome the concern of the volunteers for their dependent children at home, volunteers who have no background in healthcare could take the task of providing childcare assistance to the volunteers, as suggested by (Lazarus et al., 2020).

Future researchers have the potential to further this study by identifying the difference in volunteerism between university nursing students attending Universiti Brunei Darussalam and diploma nursing students attending Politeknik Brunei. Furthermore, researchers could further study the difference in results between degree nursing students from A-levels, post-diploma students, and in-service students.

**Implications of the study**

The level of willingness to volunteer among student nurses in Brunei was high; however, the preparedness and readiness planning is still non-existent. Nursing students are a valuable resource that needs to be tapped. Therefore, proper and systematic training as a volunteer during disasters and pandemics should be part of the nursing curriculum and collaboration with nursing practitioners, particularly in their latest preparedness training nationally, regionally, or internationally.

**Limitation of the study**

This study is subjected to non-response bias; though participants were recruited using the participant selection method, there were still chances that participants might refuse to participate when there was considerable refusal or non-responses in collected data (>10%), the results will be biased. To avoid non-response bias, the participants were given 2 to 3 reminders and informed about how valuable their contribution is and checking if the participants had completed the data during data collection. Moreover, the timing of the research may also act as a limitation due to the questionnaire being distributed when the COVID-19 situation was already stable in Brunei and no longer posed as a direct threat to the country.

**Conclusion**

In conclusion, despite the lack of experience, knowledge, and dangers of working as a front-liner during the COVID-19 pandemic, nursing students were willing to volunteer to help alleviate the strain in staffing. A few factors were found to influence the willingness of nursing students to volunteer during the COVID-19 pandemic, such as marital status, year of study, altruism, family factors, personal safety, and knowledge. To increase the willingness of nursing students to volunteer during a future pandemic, institutions must consider including disaster management as part of their nursing course curriculum to help the students prepare for future disasters. Moreover, the Ministry of Health also has
to take into consideration providing safe reliable childcare, sufficient personal protective equipment, vaccination, and prophylaxis provision to the volunteers to help increase the willingness of university nursing students to volunteer in the future.

Declaration of Conflicting Interest

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

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Acknowledgment

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Authors’ Contributions

All authors made substantial contributions to the conception and design of the study, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content, agreed to submit to the current journal, and gave final approval of the version to be published.

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Data Availability Statement

Available upon reasonable request to the authors.

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Assessment of the quality of independent nursing practice in Indonesia based on total quality management indicators

Devi Sahputra1*, Paul Lumbantobing2, and Cyruz P. Tuppal3

Abstract

Background: The quality of management has become a problem and significant issue of the late decade in Indonesia's professional nursing practice. By implementing total quality management (TQM), the organization would identify a health organization system's performance to improve patient satisfaction and patient safety for independent nursing practice services.

Objective: This study aimed to assess the quality of independent nursing practice in Indonesia based on TQM indicators.

Methods: This study employed a sequential explanatory mixed methods design. Participants were 105 Chief Executive Officers (CEOs) of independent nursing practices who answered a TQM survey using The Malcolm Baldrige Criteria for Performance Excellence (MBCfPE). The quantitative responses were analyzed using SmartPLS version 3.0. For qualitative data, selected six participants from total respondents were interviewed to explore the participants' understanding of TQM. All the responses were transcribed and uploaded using NVIVO ver. 11 for thematic analysis.

Results: Leadership positively influenced strategic planning, customer attention, assessment analysis, and information management (focusing on personnel process management and efficiency) (p <0.001). In addition, process management indicated a positive influence on performance results (p <0.001). Interview transcriptions concentrated on the following themes that emerged, such as quality focus, service focus, human resource focus, performance result, leadership, service system design, strategic planning, and information system.

Conclusion: TQM with the adaptation of MBCfPE criteria improves the organization's performance and serves as a strategic component in assessing and implementing sustainability change. The findings of this study can be used by CEOs of independent nursing practices for continuous improvement. In addition, the results serve as a basis for the ministry of health for accreditation to ensure the high quality of health care services.

Keywords

total quality management; nursing services; personnel management; independent nursing practice; Indonesia

There is a growing awareness that quality management is an essential component at all organization's levels (Lauring & Selmer, 2012). Quality management as a method is defined as a series of coordinated activities and functions to direct and control the organization to continue improving its effectiveness and efficiency (Kaluarachchi, 2010). To introduce a quality management system based on its strategy, goals, structure, size, products, and services, organizations must make rational decisions (Manghani, 2011). This also extends to the health industry.

Total Quality Management (TQM) is, in general, a management philosophy used by companies that aim to...
improve their business market productivity and competitiveness (Lauring & Selmer, 2012). TQM quality indicators include the engagement and participation of senior management, empowerment, and corporate culture (Kaluarachchi, 2010). In a seminal commentary by Andreoli (1992), she opined that TQM unifies and integrates the innovative system of managerial and organizational activities toward a culture of excellence and quality services.

Moreover, the concept of quality is not a relatively new concept to nursing. Undeniably, even before the professionalization era of nursing, quality has been coined as a pillar contributing to patient and organizational outcomes. A recent study by Wang et al. (2019) explored the nexus among total quality management, work values, employee satisfaction, and patient-safety-culture attitudes. Their findings revealed that TQM implementation benefitted many nurses in various ways and improved patient-safety culture. For this reason, it is imperative to continuously integrate the core concepts of TQM not only in the conventional nursing practice but also in the independent nursing practice.

Nursing as a profession and discipline in Indonesia is promising. For this reason, the Indonesian National Nurses Association mentioned that the ever-changing landscape of the healthcare system demands to heighten every nurse’s level of competencies, expertise, and field of specialization. This was highlighted by Widasari Sri Gitarja as a prime mover of the independent nursing clinic “Wocare Center”. However, due to the lack of understanding about the legal components and other areas of independent nursing practice, many Indonesian nurses are reluctant to immerse themselves in a highly structured and autonomous approach (Wocare, 2020). Moreover, the independent nursing practice requires a constant scaffolding of the process of quality integration into its nomenclature.

**Independent Nursing Practice Context in Indonesia**

The independent nursing role is described as any part of nursing practice for which the nurse is solely responsible, working independently and without guidance from other disciplines (Musker, 2011). Because of its restructuring, focus on preventive health care, and public engagement in holistic modalities, new opportunities for nurses to pursue independent nursing practice is developing due to the overarching healthcare system's needs and demands. In some areas, because of its consolidation, emphasis on preventive health care, and public interest in holistic modalities. Independent nursing practice is a tiny but vital component of the healthcare system that gives the public more options in terms of healthcare access (Porter & Lee, 2021). According to Wocare (2020), there is a need to strengthen the independent nursing practice because it offers a fortress of opportunities for nurses to exercise accountability, integrity, and autonomy. This advocacy by Wocare as an organization is enshrined in the Indonesian Nursing Law (Law No. 38 of 2014) that also encourages organizing a systematic approach to patient care grounded on evidence-based interventions along with interprofessional collaborative practice (Government of Indonesia, 2014).

Types of services provided at the independent nursing practice in Indonesia include wound care, stoma care, continence care, maternity care, mental care, or complementary care. For instance, the practice of wound care has proliferated in Indonesia that offers independent practice to patients who need wound care management at the confines of the patients’ homes. In the current practice, almost 600 nurses have been trained and increased their skills in various nursing procedures (Wocare, 2020). However, there is a dearth of evidence that explores that quality integration into patient care, albeit implied within nursing practice. For this reason, this study was conducted to evaluate the quality of independent nursing practice in Indonesia based on the TQM framework. This study hopes to offer baseline information about the salient outcomes that TQM delivers that further improves patient outcomes.

**Total Quality Management Indicators/Principles**

Total quality management (TQM) is a formal framework for including the entire enterprise in preparing and implementing a performance improvement process to achieve and fulfill consumer expectations (Sadikoglu & Olcay, 2014). To determine the current state of TQM implementation, each organization must review and assess itself (self-evaluation and self-assessment) to provide feedback in the form of new strategies for future TQM implementation.

TQM within the purview of the healthcare environment defined as the satisfaction of patients, doctors, nurses, and suppliers, and other interested groups, achieved by implementing effective planning, programs, policies, and strategies, and human and all other assets (i.e., soft issues) efficiently and continually within a hospital context (Talib et al., 2011). In Independent nursing practice, TQM has become a well-accepted term. TQM preserves and increases efficiency at reduced rates, but it necessitates a cultural shift for the institution and nursing unit to accept it (Mun et al., 2013). Several studies emerged in the corpus of literature that integrates TQM in nursing practice in Indonesia, especially in a hospital setting (Manurung et al., 2017; Sintari & Novitasari, 2020), but due to the paucity of evidence in Indonesia’s independent nursing practice; this study came to fruition.

Because this quality management system strives to improve the company’s entire performance, the effectiveness of TQM adoption can be determined through organizational performance measurement (Berglund et al., 1999). One of the organizational performance measuring methodologies in this research is Malcolm Baldrige for Performance Excellence (MBCfPE). The Malcolm Baldrige Criteria for Performance Excellence (MBCfPE) is a quality management measuring system based on a self-assessment approach to an organization’s performance (National Institute of Standard and Technology (NIST), 2020). Approximately 100 organizations throughout the
world have employed this strategy. Leadership, strategic planning, customer focus, measurement, information and knowledge analysis and management, workforce focus, operations focus, and results are the seven criteria used by MBCfPE to assess the state of an organization (National Institute of Standard and Technology (NIST), 2020).

Methods

Study Design
A sequential explanatory design was used in this study: a two-pronged approach in data collecting and data analysis. The data are collected over a period of time in two consecutive phases. Thus, we first collected and analyzed the quantitative data. Qualitative data were collected in the second phase of the study and related to the quantitative phase outcomes (Creswell, 2012). In this study, we collected the data about the TQM implementation followed by an in-depth interview with key informants to elicit the common issues and challenges in the identified TQM implementation and its process.

Participants and Study Setting
The participants were selected using a purposive sampling from DKI Jakarta, Bogor City, Bogor Regency, Depok City, Tangerang, Bekasi City, and Bekasi Regency (Jabodetabek). A total of 105 respondents met the inclusion criteria: Chief Executive Officer (CEO) of the independent clinic, engaged in independent nursing practice, ages between 18 and 65, with at least one year experience in the current position, and proficient in reading and speaking Bahasa and English. After the quantitative data had been collected, we selected informants based on similar inclusion criteria. However, due to the proximity, one key informant was identified as a representative of each city or district. A total of six informants agreed to be interviewed.

Data Collection
Quantitative strand
During the quantitative phase of data collection, the eligible participants based on the inclusion criteria were provided with self-administered questionnaires through email correspondence detailing the voluntary participation. Two sets of questionnaires were attached as documents in the emails. Part I described the profile characteristics of the participants, including age, gender, the highest level of education, duration of nursing practice, type of case, monthly income, and a number of monthly visits for two months. Part II asked the participants to rate their agreement using a 4-point Likert scale (1 = Strongly Disagree; 2 = Disagree; 3 = Agree; 4 = Strongly Agree). The primary instrument used was adapted from The Malcolm Baldrige Health Care Criteria for Quality Service, consisting of 67 items. The questionnaire was grouped into process criteria (criteria 1-6) and outcome criteria (criteria 7). The scoring system is based on the MECfPE score criteria. The MBCfPE criteria provide a systemic approach to achieving operational excellence and overcoming healthcare quality-measurement challenges (National Institute of Standard and Technology (NIST), 2020). The questionnaire was translated into the Indonesian language. After the quantitative data were collected, the individual responses from the Google forms were transported and cleaned using Microsoft Excel before data were uploaded to the computer-assisted software.

Qualitative strand
The qualitative phase of data collection was conducted a week after the completion of Phase I. During Phase II, the key informants were invited through their emails detailing the study’s purposes. After they have agreed on their voluntary participation, another invitation was sent to provide the information about the interview process. An in-depth interview was conducted via Zoom because of the limitation of physical restriction at the COVID-19 pandemic. We requested to record the interview and agreed by the key informants. Afterward, the audio-video recorded interview was transcribed in a word file document before those narratives were uploaded in NVIVO Plus ver. 11. This qualitative software facilitated the data analysis. The in-depth interview was to explore various issues about the implementation of TQM within nursing independent nursing practice.

Data Analysis
Quantitative strand
Descriptive statistics were employed for the demographic information with Microsoft Excel. The quantitative responses were analyzed using SmartPLS version 3.0. The results of factor analysis, multiple hierarchical regression, and partial least square structural equation modeling with statistically significant was set value T-statistics <1.65 (Hair et al., 2019).

Qualitative strand
To guide the data analysis of the comprehensive interview, qualitative content analysis was used. First, the transcripts were read. The words and sentences were categorized as sample units, which were then simplified and labeled with a code and organized into their respective groups, containing information relevant to the study questions. The NVivo ver 11 was used during the process of schematization. Disagreements among the authors in the coded themes were addressed through constant member checks and succeeding meetings to draw a consensus.

Ethical Consideration
This research was approved by The Indonesian Wound Care Clinician Association (0321/SK/InWCCA/ X/2020). The data were permanently deleted after completing data collection. Before data collection, each respondent has signed informed consent. Also, the respondents were informed about their voluntary participation, may partially or wholly withdraw during the study, their identity was anonymous, and no personal identification information was retrieved to ensure confidentiality.
Results

Quantitative Results
Table 1 shows that 34% of the respondent from Jakarta. The majority were males (58.6%) and completed bachelor's degree (54%). Most types of service were wound care (57.5%), with diabetic ulcer care (78%). Most of them have been working for 1 to 5 years (55.2%). In addition, the majority of the participants had a total income of less than 10 million (51.7%) and less than ten visits.

<table>
<thead>
<tr>
<th>Area of practice</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jakarta</td>
<td>34</td>
</tr>
<tr>
<td>Tangerang</td>
<td>13</td>
</tr>
<tr>
<td>Depok</td>
<td>17.2</td>
</tr>
<tr>
<td>Bogor</td>
<td>19</td>
</tr>
<tr>
<td>Bekasi</td>
<td>16.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>58.6</td>
</tr>
<tr>
<td>Female</td>
<td>41.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education level</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma</td>
<td>16.1</td>
</tr>
<tr>
<td>Bachelor</td>
<td>54</td>
</tr>
<tr>
<td>Magister</td>
<td>24</td>
</tr>
<tr>
<td>Specialist</td>
<td>5.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of services</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wound care</td>
<td>57.5</td>
</tr>
<tr>
<td>Wound, ostomy, and continence care</td>
<td>32.3</td>
</tr>
<tr>
<td>Nurse specialist</td>
<td>2.2</td>
</tr>
<tr>
<td>General nurse</td>
<td>8.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of cases</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetic ulcer</td>
<td>78.2</td>
</tr>
<tr>
<td>Cancer wound</td>
<td>7</td>
</tr>
<tr>
<td>Pressure injury</td>
<td>7.8</td>
</tr>
<tr>
<td>Acute wound</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experience</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 year</td>
<td>11.5%</td>
</tr>
<tr>
<td>1-5 years</td>
<td>55.2%</td>
</tr>
<tr>
<td>6-10 years</td>
<td>24.1%</td>
</tr>
<tr>
<td>&gt;10 years</td>
<td>9.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total income monthly (Rupiah)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10 million</td>
<td>51.7%</td>
</tr>
<tr>
<td>10 – 50 million</td>
<td>36.9%</td>
</tr>
<tr>
<td>51 – 100 million</td>
<td>5.7%</td>
</tr>
<tr>
<td>&gt;100 million</td>
<td>5.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Visited per month</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10 visit</td>
<td>52.9%</td>
</tr>
<tr>
<td>51 – 100</td>
<td>34.5%</td>
</tr>
<tr>
<td>101 – 200</td>
<td>5.7%</td>
</tr>
<tr>
<td>&gt;200</td>
<td>6.9%</td>
</tr>
</tbody>
</table>

Table 2 shows the mean and factor loadings for each measurement object's seven factors and each factor's ratings for the Average Variance Extract (AVE). The mean value of customer focus, process management, and performance outcomes were all included in the 'always' category, with average scores ranged between 3.26-4.00. This demonstrates that, with the correct procedure, independent nursing quality was high. In the frequent category, the variables of leadership, strategic planning, measurement analysis, knowledge management, and staff focus were included, with the mean value from 2.51 to 3.25.

AVE value for each variable met the validity criteria, which the variables of leadership, strategic planning, customer focus, measurement of knowledge management analysis, staff focus, process management, and performance results with each value AVE were 0.66, 0.70, 0.61, 0.70, 0.78, 0.63 and 0.60, higher than the limit value 0.5 (good convergent validity value) (Hair et al., 2019). Furthermore, the results revealed a high correlation coefficient through the structural model through the coefficient of determination ($R^2$) and the multicollinearity test (see Figure 1).
<table>
<thead>
<tr>
<th>Code</th>
<th>Items</th>
<th>Mean</th>
<th>Factor loading</th>
<th>AVE</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS</td>
<td>Leadership</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS 1</td>
<td>Create an independent nursing practice vision, mission, and organizational principles</td>
<td>3.28</td>
<td>0.79</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>LS 2</td>
<td>Disseminate the vision, mission, and organizational principles of the nursing independent nursing practice organization</td>
<td>3.13</td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS 5</td>
<td>Encourage workers to continue to improve and improve productivity regularly</td>
<td>3.43</td>
<td>0.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS 7</td>
<td>Supervise the execution of the responsibilities of subordinates regularly</td>
<td>3.14</td>
<td>0.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS 8</td>
<td>Analyze the efficiency of subordinates</td>
<td>3.18</td>
<td>0.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS 9</td>
<td>Use assessment results as a basis for the provision of incentives and punishments</td>
<td>3.06</td>
<td>0.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS 10</td>
<td>Implement an internal and external evaluation (audit) scheme for results</td>
<td>2.90</td>
<td>0.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS 11</td>
<td>Encourage workers to record any action</td>
<td>3.31</td>
<td>0.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS 12</td>
<td>Encourage staff to perform highly ethical services</td>
<td>3.52</td>
<td>0.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS 13</td>
<td>Render care attention to the influence of nursing independent nursing practice on the community around the independent nursing practice.</td>
<td>3.15</td>
<td>0.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS 14</td>
<td>Facilitate efforts to select priority maintenance/improvement services</td>
<td>3.30</td>
<td>0.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>Strategic Planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP 1</td>
<td>Define the independent nursing practice organization's goals and objectives</td>
<td>3.16</td>
<td>0.86</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>SP 2</td>
<td>Develop the independent nursing practice organization's strategic priorities based on patient/customer needs</td>
<td>3.29</td>
<td>0.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP 3</td>
<td>Analyze independent nursing practice's internal and external conditions in compiling the independent nursing practice organization's strategic planning</td>
<td>3.09</td>
<td>0.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP 4</td>
<td>Formulate short and long-term programs to meet policy priorities for independent nursing practice</td>
<td>3.11</td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP 5</td>
<td>Determine superior service programs that are vital independent nursing practice activities</td>
<td>3.28</td>
<td>0.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP 6</td>
<td>Disseminate job schedules to all staff of independent nursing practice workgroups/ facilities</td>
<td>3.19</td>
<td>0.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP 7</td>
<td>Determine the tools required to facilitate the efficient execution of work plans</td>
<td>3.18</td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP 8</td>
<td>Determine the method of tracking and reviewing the implementation of work plans</td>
<td>3.2</td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF</td>
<td>Customer Focus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF 2</td>
<td>Determine patients' needs, aspirations, and preferences to ensure the quality of independent nursing practice programs for nursing</td>
<td>3.51</td>
<td>0.82</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>CF 3</td>
<td>Use social media to listen to patient/client preferences and feedback about nursing independent nursing practice facilities</td>
<td>3.16</td>
<td>0.76</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>CF 4</td>
<td>Measure the patient/service satisfaction standard</td>
<td>3.27</td>
<td>0.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF 5</td>
<td>Informed to each unit of patient problems to be able to determine the root cause</td>
<td>3.43</td>
<td>0.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF 6</td>
<td>Explain the introduction of quality improvement in independent nursing practice</td>
<td>3.69</td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF 7</td>
<td>Provide timely and specific service to the patient/client status requirements</td>
<td>3.63</td>
<td>0.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKMA</td>
<td>Measurement of Knowledge Management Analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKMA 1</td>
<td>Measure the performance in each working unit</td>
<td>3.01</td>
<td>0.85</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>MKMA 2</td>
<td>Use results of the performance measurement to assist decision-making in improving service quality</td>
<td>3.01</td>
<td>0.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKMA 3</td>
<td>Integrate information management system of data and information on private nursing practice services</td>
<td>2.84</td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKMA 4</td>
<td>Update service information</td>
<td>3.08</td>
<td>0.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKMA 5</td>
<td>Ensure employees or patients/customers can instantly and comfortably obtain data and information from independent nursing practice</td>
<td>3.01</td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKMA 6</td>
<td>Combine data and information from private nursing practice with service efficiency metrics</td>
<td>2.95</td>
<td>0.88</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2 (Cont.)

<table>
<thead>
<tr>
<th>SF</th>
<th>Staff Focus</th>
<th>3.23</th>
<th>0.78</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF 1</td>
<td>Develop staff capacity and skills to meet organizational performance objectives</td>
<td>3.18</td>
<td>0.87</td>
<td></td>
</tr>
<tr>
<td>SF 2</td>
<td>Motivate staff to create creativity in the provision of services</td>
<td>3.15</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>SF 3</td>
<td>Create a secure work environment for workers</td>
<td>3.39</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>SF 6</td>
<td>Receive bonuses for high employee success and incentives</td>
<td>3.17</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>SF 7</td>
<td>Ensure each worker actively explores opportunities to improve their ability to deliver services</td>
<td>3.16</td>
<td>0.89</td>
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<tr>
<td>SF 8</td>
<td>Ensure each employee is granted the authority to complete tasks according to their position and capacity</td>
<td>3.34</td>
<td>0.88</td>
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</table>

<table>
<thead>
<tr>
<th>PM</th>
<th>Process Management</th>
<th>3.41</th>
<th>0.63</th>
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</tr>
</thead>
<tbody>
<tr>
<td>PM 3</td>
<td>Design the operation phase in private nursing practice according to the patient/customer interests</td>
<td>3.48</td>
<td>0.76</td>
<td></td>
</tr>
<tr>
<td>PM 4</td>
<td>Supervise carrying out of operations/programs</td>
<td>3.19</td>
<td>0.79</td>
<td></td>
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<tr>
<td>PM 6</td>
<td>Design operation protocols to benefit from the independent nursing practice</td>
<td>3.32</td>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td>PM 9</td>
<td>Renew the rhythm of the service process to make it more reliable and productive</td>
<td>3.37</td>
<td>0.84</td>
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</tr>
<tr>
<td>PM 10</td>
<td>Ensure professionals and specialists in their fields carry out each service</td>
<td>3.54</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td>PM 11</td>
<td>Allow attempts to continually enhance or raise the level of care to patients/consumers</td>
<td>3.54</td>
<td>0.77</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>PM</th>
<th>Performance Result</th>
<th>3.48</th>
<th>0.60</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR 1</td>
<td>Ensure each care provided is based on the patient/customer's needs and conditions.</td>
<td>3.64</td>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td>PR 2</td>
<td>Ensure officers carry out each service according to the education/expertise possessed</td>
<td>3.60</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>PR 3</td>
<td>Ensure operations in compliance with the standard operating procedures</td>
<td>3.61</td>
<td>0.78</td>
<td></td>
</tr>
<tr>
<td>PR 5</td>
<td>Handle service period (waiting for time or duration of treatment) for patients/clients effectively</td>
<td>3.50</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>PR 7</td>
<td>Enhance employee satisfaction in the execution of their jobs</td>
<td>3.38</td>
<td>0.77</td>
<td></td>
</tr>
<tr>
<td>PR 8</td>
<td>Reduce delays or cancellations of patient/client services</td>
<td>3.18</td>
<td>0.54</td>
<td></td>
</tr>
</tbody>
</table>

Note: LS: Leadership, SP: Strategic Planning, CF: Customer Focus, MKMA: Measurement of Knowledge Management Analysis, SF: Staff Focus, PM: Process Management, PR: Performance Result

Table 3 shows the significant influences among the MBCIPE constructs. It can be gleaned in the table that leadership positively influences strategic planning, customer attention, assessment analysis, and information management (focusing on personnel process management and efficiency), while process management indicates a positive influence on performance results.

Table 3 Path coefficients bootstrapping (Mean, SD, T-Values)

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path Coefficients</th>
<th>Original Sample (O)</th>
<th>Sample Mean (M)</th>
<th>SD</th>
<th>T Statistics (O/SD)</th>
<th>P-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>LS -&gt; SP (X1a)</td>
<td>0.81</td>
<td>0.82</td>
<td>0.04</td>
<td>19.01</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>H1b</td>
<td>LS -&gt; CF (X1b)</td>
<td>0.59</td>
<td>0.60</td>
<td>0.07</td>
<td>8.15</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>H1c</td>
<td>LS -&gt; MKMA (X1c)</td>
<td>0.70</td>
<td>0.70</td>
<td>0.06</td>
<td>12.27</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>H1d</td>
<td>LS -&gt; SF (X1d)</td>
<td>0.81</td>
<td>0.80</td>
<td>0.04</td>
<td>18.11</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>H1e</td>
<td>LS -&gt; PM (X1e)</td>
<td>0.57</td>
<td>0.58</td>
<td>0.09</td>
<td>6.01</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>H1f</td>
<td>LS -&gt; PR (X1f)</td>
<td>0.28</td>
<td>0.27</td>
<td>0.166</td>
<td>1.7</td>
<td>0.085</td>
</tr>
<tr>
<td>H2</td>
<td>SP -&gt; PR</td>
<td>-0.23</td>
<td>-0.24</td>
<td>0.15</td>
<td>1.48</td>
<td>0.139</td>
</tr>
<tr>
<td>H3</td>
<td>CF -&gt; PR</td>
<td>0.11</td>
<td>0.11</td>
<td>0.13</td>
<td>0.85</td>
<td>0.393</td>
</tr>
<tr>
<td>H4</td>
<td>MKMA -&gt; PR</td>
<td>-0.004</td>
<td>-0.017</td>
<td>0.13</td>
<td>0.03</td>
<td>0.976</td>
</tr>
<tr>
<td>H5</td>
<td>SF -&gt; PR</td>
<td>0.10</td>
<td>0.11</td>
<td>0.14</td>
<td>0.70</td>
<td>0.480</td>
</tr>
<tr>
<td>H6</td>
<td>PM -&gt; PR</td>
<td>0.57</td>
<td>0.60</td>
<td>0.11</td>
<td>4.89</td>
<td>&lt;0.001*</td>
</tr>
</tbody>
</table>

Note: LS: Leadership, SP: Strategic Planning, CF: Customer Focus, MKMA: Measurement of Knowledge Management Analysis, SF: Staff Focus, PM: Process Management, PR: Performance Result
Figure 1 Path model algorithm

Qualitative Results
Based on the analysis, eight themes emerged from the key informants’ narratives:

**Theme 1: Quality focus**
- It is more about the performance we are doing […] the family really wants to know about the wound treatment. With this, the patient and the family members would have more faith in how the treatment is done. If we certainly determine all [about the treatment], we often rely on the patient’s view. The standard of service [or care] must be quality (Informant ID-6)

**Theme 2: Service focus**
- There is also a decline among patients who visit the clinic [perhaps] due to the pandemic. More often, [in fact], most patients, if not all, will ask for home care management. Through this approach, nurses can [eventually] meet the patients’ needs and expectations (Informant ID-5)
- [Now], the patient would always expect the service providers […] to interact with them. This is what we always do to build good and dynamic, closely knitted interactions while we remain focused based on patient's needs, demands, and expectations (Informant ID-6)

**Theme 3: Human resource focus**
- In our case, we focus on the people [our employees] because we believe in their competence and expertise levels. We plan to establish a professional clinician network for case evaluations. We also have in mind to engage in local conferences (Informant ID-1)
- I make sure that every employee is equipped with competence through training and development (Informant ID-3)

**Theme 4: Performance result**
- By conducting briefings with supervisors and colleagues, we maximize efficiency. Indeed, because of their contact with patients and families, the most important factor in improving care is to enhance effective communication either face-to-face or virtually (Informant ID-5)
- Why do I give the origin of the name Blessing Care? Because I want to focus on nursing, this is also one way
to share the blessing to others, knowing that what I have for my employees: they are all well-performing (Informant ID-6)

Theme 5: Leadership
- It is our shared aim to strengthen independent practice across the country. However, this vision requires leadership coupled with vision and purpose (Informant ID-2)
- [Well]... I think the highest decision is mine […], but I do not make my own choices. I consult others still to come up with the best decisions for the team and with the team (Informant ID-3)

Theme 6: Service system design
- I think system design within the service you provide really matters […]. It is essential for the standard of service to sustain or improve the quality that already exists [or] may need further improvements (Informant ID-6)

Theme 7: Strategic planning
- The strategies that have been compiled do not comply with policies, so we need to intensify our approaches to planning (Informant ID-1)

Theme 8: Information system
- […] but now, maybe in a few months, we can integrate an information system that will be patient-focused (Informant ID-1)
- The current documentation needs a revisit or even a new platform such as WhatsApp, where most patients are connected. This makes the transmission or retrieval of information becomes easier (Informant ID-4)

Discussion

Summary of the Findings
The present study showed that leadership positively influences the following domains: strategic planning, customer satisfaction, assessment analysis, and information management, focusing on personnel process management and efficiency. Leadership remains a precursor to the effective adoption of TQM in many healthcare organizations. Nursing leaders continue to uphold the highest quality standards of patient care to ensure that the service delivery and provision of care are fully achieved by every nursing unit member and meet their expectations (Balasubramanian, 2016). Nursing leaders should continue to serve as role models for newly admitted nurses to the healthcare organization to ensure they develop a sense of belonging and organizational citizenship. These greenhorn nurses are considered a path of continuity of similar leadership exemplified by the nursing leaders they considered role models.

On the other hand, leadership is also recognized as a bridge that connects for effective strategic planning that strengthens the sense of direction what the nursing unit wants to achieve. Nursing leaders must develop their functional and adaptive capacity to the ever-changing status and demands of the health systems. In this regard, the nursing unit, along with its practice, can be more responsive to future institutional needs and patient demands. Many hospitals worldwide place a high value on customer or patient satisfaction because this becomes an indicator of quality service delivery and tangible patient and organizational outcomes (Manurung et al., 2017). It builds and heightens patient loyalty and patient intimacy, which trust and confidence in service delivery are ensured.

Moreover, it should also be heightened to provide a continuous mechanism that evaluates the patient care and provision of care by the nurses, whether in healthcare settings or independent nursing practice (Porter & Lee, 2021). In a similar vein, process management is a positive indicator of performance management indicated in this study. This purport the process mechanism must be upheld, reviewed, and revisited periodically to ensure that it achieves a great extent of performance and perceived quality care by nurses. Owing to the thematic analysis, eight themes emerged from the participants' narratives, including quality focus, service focus, human resource focus, performance results, leadership, service system design, strategic planning, and information system.

Sugandini and Wendry (2017) stated that customer satisfaction and loyalty would increase if an organization can handle complaints effectively on the first contact. Information from customers can be done by conducting regular satisfaction surveys or placing a suggestion box in the service room. The expectations and desires of customers can be read by the leaders compiled. This is done in addition to being able to identify the desires, expectations, and level of acceptance of patients/customers for health services in independent nursing practice, as well as to give a positive signal that in independent nursing practice has excellent attention and concern for patients/customers and creates a strong partnership relationship. Both with patients/customers to improve service processes.

According to the Malcolm Baldrige Assessment (National Institute of Standard and Technology (NIST), 2020), leadership is how top leaders can direct and sustain the organization and set its vision, principles, and performance expectations. Leadership is a component of quality control practices for improving operational performance, and that there is no question about organizational performance. Leadership is one of the main quality management practices, a critical factor that influences and plays an essential role in successfully implementing quality management in an organization (Gunawan et al., 2019), including private nursing practice.

The interviews with informants showed that setting the hospital's vision and mission can guide all employees in carrying out their duties. A clear, logical vision and mission with inspirational values are a source of fundamental strength in achieving goals organization (Lauring & Selmer, 2012). However, some informants have not yet
disseminated the vision and mission of practicing self-employment to all employees as an organization’s goal.

As a form of commitment in implementing quality management, hospital leaders must also be able to create a sound (two-way) communication system with all employees where the flow of information is applied top-down and bottom-up (Kaluarachchi, 2010; Alolayyan et al., 2011). Furthermore, in connection with service process standards, especially amid a pandemic, COVID-19 must have compiled and developed a standard service document (SPO) (health protocol) as a guideline in carrying out actions/services for patients amid the COVID-19 pandemic, as well as establishing a service process flow so that it can be more efficient so as not to violate health protocols.

In a previous study conducted by Lauring and Selmer (2012), customers’ reluctance to direct their hopes and desires to officers could be caused by worry, the possibility that they might get a sour face from the officers. In solving organizational problems, finding the root of the problems is needed. Therefore, in this case, a management system in independent nursing practice is suggested to improve and monitor services. The results of patients’ or customers’ responses for improvement continue to be considered in quality for better service in the future.

Implication for Nursing Management and Practice
TQM is used by many disciplines to provide clients with reliable, accurate, accessible, timely, appropriate, and robust resources. Many healthcare providers have implemented TQM, which has helped increase cost management, quality, and efficacy of services. To satisfy the demands of different stakeholders and clients, nursing practice in Indonesia should incorporate TQM and other quality models into its structure. Among practicing individual nursing practitioners, there is an interconnected, linked, and collaborative network and linkage. TQM is needed to improve the quality and efficacy of services, adapt to changing environments, respond quickly to patient needs, and allow workers to be more active in work processes and decision-making. The findings of this study can also be used to improve the quality of health care and continuous improvement for CEOs of independent nursing practices. Furthermore, it is expected that the study results can be used by the government, especially the Ministry of Health, as the basis for accreditation to ensure the high quality of health care services.

Limitation of the Study and Future Recommendations
The limited sample size representing the CEOs of many independent nursing practices in Indonesia is considered a limitation of this study. In addition, the implementation of standards was not demonstrated in this study by document observations. Nevertheless, this study is significant even though it only describes the state of nursing service quality by evaluating the influence or relationship variables. Future research should pay more attention to this topic. More research is needed to extend our understanding of the constructs used in this study by exploring them in different ways. Future research may look into the role of leadership, strategic planning, customer focus, measurement, analysis, and knowledge management, workforce focus, process management, and result performance in various service settings separately or in combination.

Conclusion
In conclusion, the independent nursing practice in Indonesia performed well based on MBCIPE criteria in the study. To obtain a systematic view of service quality management and performance in independent nursing practice, this research work aligns internal and external service quality. TQM adoption by independent nursing practice resulted in safe, effective, efficient, timely, relevant, and comprehensive service delivery to various stakeholders. In a similar vein, TQM has been adopted primarily by many nursing institutions in their independent nursing practice, contributing to improved cost-containment, efficiency, and service effectiveness. Thus, it is recommended that independent nursing practices in Indonesia continue to integrate TQM and other quality models into their system to meet various stakeholders’ demands. However, such integration requires conscientious and collaborative efforts among nursing professionals and practitioners. An informed, connected, and adaptive network and linkage among the independent nursing practice will be required.

Declaration of Conflicting Interest
The authors declare no conflict of interest.

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None.

Authors’ Contributions
DS and PL did the conception of this research. DS drafted the manuscript and collected data. PL and CPT contributed to the data analysis and manuscript development. Final approval of the version to be published was granted by all authors.

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Data Availability Statement
The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.
References


Illness cognition and depression among patients with coronary heart disease

Aan Nuraeni, Anastasia Anna, Atlastieka Praptiwi, and Donny Nurhamsyah

Abstract

Background: Depression is a significant predictor of the quality of life among patients with coronary heart disease. Therefore, it is essential to explore the factors associated with depression. Illness cognition is considered one of the factors affecting depression. However, the relationship between illness cognition and the incidence of depression among Indonesian patients have not been widely investigated.

Objective: This study aimed to investigate the correlation between illness cognition, consisting of the acceptance, perceived benefits, and helplessness variables, and depression in patients with coronary heart disease.

Methods: This study employed a correlational research design with a total of 106 patients undergoing treatment at a hospital in West Java, Indonesia, selected using convenience sampling. Data were collected using a demographic questionnaire, Beck-Depression Inventory-II (BDI-II), and ICQ (Illness-Cognition Questionnaire). Data were analyzed using mean (SD), median, frequency distribution, and Spearman-rank.

Results: 72% of respondents had no depression. Nevertheless, mild, moderate, and major depression suffered by 15%, 9%, and 4% of respondents, respectively. In terms of illness cognition, patients scored higher within the perceived benefits dimension (mean 20.13, SD 3.05), followed by acceptance (mean 18.22, SD 3.33) and helplessness (mean 13.20, SD 4.77), respectively. Furthermore, helplessness was significantly associated with depression (p < .01) with a positive correlation coefficient (r). Also, all items on the helplessness dimension had a significant correlation (p < .01) with depression accompanied by a positive r-value.

Conclusion: Helplessness had a significant relationship with depression. So, cardiovascular nurses can anticipate depression in patients by making nursing interventions that can decrease the patients’ feelings of helplessness. Thus, factors that reduce helplessness need to be explored and taken into accounts in the treatment of patients with coronary heart disease.

Keywords

acceptance; coronary heart disease; depression; helplessness; illness cognition; perceived-benefits; nursing

Globally, Coronary Heart Disease (CHD) has become a leading cause of death with an increasing trend (Mensah et al., 2019). In addition, the current increase in air pollution in the form of PM2.5 (2.5-micron air particles) adds to the global age-standardized burden of CHD in several low- and middle-income countries, especially in Asia, Oceania, and Africa (Wang et al., 2021). In Indonesia, the Basic Health Research 2018 indicated a very high prevalence of CHD risk factors such as smoking, physical activity, and hypertension, ranging from 28 to 33%. Moreover, following the situation leads to an increase in the number of Indonesian people getting cardiovascular disease (Uli et al., 2020). This condition shows that the health burden due to cardiovascular disease will rise in Indonesia (Adisasmito et al., 2020; Uli et al., 2020). Moreover, CHD is still a health problem that requires attention as its rates being the leading cause of death following stroke, causing 37% of deaths in Indonesia (Chow et al., 2017).
CHD has an impact on the physical and psychological aspects of the patient. However, this psychological problem is still not optimally managed. Some studies indicated the failure of interventions for CHD patients to effectively deal with psychological issues such as anxiety and depression compared to physical problems after an acute condition (Su & Yu, 2019; Nuraeni et al., 2020; Turan Kavradim et al., 2020). In accordance, nurses as care providers have a role in providing holistic nursing care, including physical, psychological, and spiritual aspects. Consequently, nurses have opportunities and challenges in managing psychological problems that may occur in CHD patients.

On the psychological aspect, CHD patients often experience depression (Carney & Freedland, 2017). According to Lichtman et al. (2014) and Vaccarino et al. (2020), as much as 15-30% of CHD patients encounter depression. Specifically in Indonesia, Nur'aeni et al. (2019) found that 41% of 100 CHD patients undergoing outpatient treatment experienced depression. In addition, another study showed that 27.3% of 77 CHD patients experienced mild to severe depression (Charunnissa et al., 2017). Recent research in a cardiac intensive care unit found that 100% of the 84 CHD patients experienced mild (35.7%), moderate (58.3%), and severe depression (6.0%) (Amni, 2020). Those Indonesian studies affirmed that depression is a substantial problem experienced by CHD patients.

Several studies have also shown a high prevalence of depression followed by increased mortality and morbidity in CHD patients. Results of a systematic review by Lichtman et al. (2014) showed that depression was associated with an increased risk of death in patients with myocardial infarction. In addition, depression was also associated with severe functional disorders, low adherence to therapy, and low participation in cardiac rehabilitation (Vaccarino et al., 2020). Moreover, studies on quality of life also showed that depression was the strongest predictor of low quality of life in patients with CHD (Lane et al., 2000; Müller-Tasch et al., 2007; Nuraeni et al., 2016), compared to other factors of symptom severity in heart disease, such as angina, functional capacity, or dyspnea (Amin et al., 2006; Hare et al., 2014; Nuraeni et al., 2016).

Depression in CHD patients, if not treated properly, will give a poor prognosis. Although it can be treated with antidepressants, serotonin-norepinephrine reuptake inhibitors, tricyclic antidepressants, and selective serotonin reuptake inhibitors (Vaccarino et al., 2020), the use of antidepressants is significantly associated with fatal CHD complications such as sudden cardiac arrest (SDA) (Whang et al., 2009). This situation shows the importance of examining the causes of depression to provide appropriate intervention.

Previous studies attempted to identify factors associated with depression in patients with CHD in Indonesia. These factors were social support, anxiety, spiritual wellbeing, marital status, physical limitations, frequency of angina, and factors related to treatment history. These studies indicated that depression was associated with low spiritual wellbeing (Nur'aeni et al., 2019), anxiety (Nuraeni et al., 2018), and low social support (Charunnisa et al., 2017). Another aspect to be explored concerning depressive symptoms is patients' belief of illness or illness perception or illness cognition. Illness cognition highlights the representation of cognitive and emotional elements that are dynamic in influencing a person's health behavior in facing disease threats (Ogden, 2012). According to Cameron and Leventhal (2003), illness cognition as the core of the Self Regulation Model (SRM) is a systematic process of setting goals, planning appropriate strategies to achieve, and evaluating goals and strategies to revise them. A conscious effort is involved in this systematic process of regulating thoughts, emotions, and behavior. Therefore, we were interested in studying how this systematic process occurred in each treatment phase experienced by patients by measuring illness cognition and analyzing its correlation with depression symptoms. Smallheer et al. (2018) recognized a correlation between illness cognition and depressive symptoms in CHD patients; however, there was no direct relationship between illness cognition and depressive symptoms.

Furthermore, Illness cognition determines the adherence behavior of CHD patients to treatment (Leventhal et al., 1992; Evers et al., 2001; Shin et al., 2013), as well as depression (Shin et al., 2013; Vaccarino et al., 2020). Nevertheless, in Indonesia, the relationship between illness cognition and depressive symptoms in CHD patients has not been widely discussed in studies. As nurses play a role in preventing complications and increasing patient compliance in managing CHD, information about the relationship between these variables is beneficial, especially in depression prevention and intervention measures. Therefore, this study aimed to investigate the correlation between illness cognition and depressive symptoms among patients with CHD in Indonesia.

Methods

Study Design
This study used a correlational research design with a cross-sectional approach.

Participants
The population was CHD patients who were undergoing treatment at a referral hospital in West Java, Indonesia. The sample selection using convenience sampling technique with inclusion criteria: 1) respondents aged at least 18 years; 2) respondent is undergoing treatment in one of the following areas of the cardiac care installation: Cardiac High Care Unit; non-intensive Cardiac Care Unit; Cardiac Rehabilitation Unit; and Cardiac Outpatient Unit. Exclusion criteria for potential respondents: 1) do not understand Bahasa Indonesia; 2) have a history of psychological or mental disorders.

The number of samples was determined using the sample size table for one correlation test. Utilizing an expected correlation between the two variables (r) 0.778 from Smallheer et al. (2018), with a statistical power of
90%; alpha (α) 5%; and correlation coefficient of the null hypothesis (r) 0.6, it was found that the number of minimum respondents needed was 56 (Bujang & Baharum, 2016), and a total of 106 respondents were involved in the study.

**Instruments**

*Demographic questionnaire.* Respondents completed a demographic questionnaire that included age, gender, educational level, marital status, estimated monthly household income, and type of cardiac treatment.

*Beck Depression Inventory-II (BDI II).* We used The Beck Depression Inventory-II (BDI II) Bahasa Indonesia version to measure depression (Beck et al., 1996), which its validity value of $r = .39 - .52$, $p < .01$, and Cronbach’s α of .90 (Ginting et al., 2013). The BDI II instrument categorized depression based on: not depression (0-13); mild depression (14-19); moderate depression (20-28); and major depression (29-63).

*Illness Cognition Questionnaire (ICQ).* Evers et al. (2001) developed the Illness Cognition Questionnaire (ICQ), consisting of 18 questions categorized into three dimensions: helplessness, acceptance, and perceived benefits. All questions were measured using a 1-4 Likert scale consisting of: Not at all (1); somewhat (2); to a large extent (3); and completely (4), which the higher the score indicates the higher acceptance, perceived benefits, and helplessness. In this study, we used the Bahasa Indonesia version of ICQ with permission from the original author. The construct validity of the Indonesian version of ICQ was .52 to .80. A reliability value for helplessness, acceptance and perceived benefits was .75, .69, and .70, respectively (Delima et al., 2018).

**Data Collection**

Four final-year nursing students were involved as data collectors. Data collection was carried out from February to May 2017 at one of the referral hospitals in West Java, Indonesia. They have explained the research objectives and how to fill the instruments to respondents who meet the inclusion criteria.

**Data Analysis**

Data were analyzed using SPPS version 25 software. Before analyzing the data, we tested the normality of the data on the variables: depression, acceptance, perceived benefits, and helplessness using Kolmogorov-Smirnov, and the results showed that the data were not normally distributed ($p < .05$), so in this study, data processing used a non-parametric statistic. Data analysis in this study was divided into two stages. In the first stage, we described the characteristics of the respondents using the mean and standard deviations, median, and frequency distribution. In the second stage, we investigated the relationship between each dimension of illness cognition (acceptance, perceived benefits, and helplessness) and depression. We analyzed this second stage using Spearman-rank with a significance level of $p < .05$.

**Ethical Consideration**

This study obtained ethics approval from the Research Ethics Committee of Universitas Padjadjaran No. 453 / UN6.C.10 / PN / 2017. All respondents had been informed and signed the consent form. In order to protect the respondents from harmful conditions, the data collection was conducted when the patients were reported free of chest pain. Additionally, the findings of this study are reported as grouped data. Therefore, participants’ identification was anonymous.

**Results**

A total of 106 respondents were involved in the study, consisting of 10% who were undergoing treatment at the High-care unit (HCU); 28% in non-high / Intensive Care Units; 39% in outpatient units; and 24% in the cardiac rehabilitation unit. Approximately three-quarters of the respondents are male (76%), and near a quarter (24%) are female. Moreover, almost all respondents were married (91%). Further information for the characteristics of respondents in this study can be seen in Table 1.

<table>
<thead>
<tr>
<th>Table 1 Respondents’ characteristics</th>
<th>Univariate Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>81</td>
</tr>
<tr>
<td>Female</td>
<td>25</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>91</td>
</tr>
<tr>
<td>Not married</td>
<td>1</td>
</tr>
<tr>
<td>Widow/Widower</td>
<td>14</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
</tr>
<tr>
<td>Not formally educated</td>
<td>1</td>
</tr>
<tr>
<td>Elementary school</td>
<td>45</td>
</tr>
<tr>
<td>Secondary school</td>
<td>33</td>
</tr>
<tr>
<td>Higher education</td>
<td>27</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
</tr>
<tr>
<td>Less than 2.8 million IDR</td>
<td>60</td>
</tr>
<tr>
<td>2.8 – 5 million IDR</td>
<td>32</td>
</tr>
<tr>
<td>More than 5 million</td>
<td>14</td>
</tr>
<tr>
<td><strong>Estimated Monthly Household Income</strong></td>
<td></td>
</tr>
<tr>
<td>High care unit</td>
<td>10</td>
</tr>
<tr>
<td>Non-high/Intensive care unit</td>
<td>30</td>
</tr>
<tr>
<td>Outpatient unit</td>
<td>41</td>
</tr>
<tr>
<td>Cardiac rehabilitation unit</td>
<td>25</td>
</tr>
<tr>
<td><strong>Cardiac Care Installation</strong></td>
<td></td>
</tr>
<tr>
<td>Medication</td>
<td>24</td>
</tr>
<tr>
<td>Medication, fibrinolysis</td>
<td>25</td>
</tr>
<tr>
<td>Medication, PCI</td>
<td>24</td>
</tr>
<tr>
<td>Medication, CAGB</td>
<td>6</td>
</tr>
<tr>
<td>Medication, fibrinolysis, PCI</td>
<td>22</td>
</tr>
<tr>
<td>Medication, PCI, CAGB</td>
<td>2</td>
</tr>
<tr>
<td>Medication, fibrinolysis, CAGB</td>
<td>2</td>
</tr>
<tr>
<td>Medication, fibrinolysis, PCI, CAGB</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 2 shows that acceptance and perceived benefits have a mean and median close to the maximum ICQ score (ICQ max score 24). On the other hand, the mean and median scores of helplessness are close to the minimum score ICQ (ICQ min score 6). These mean and median scores show that the respondents have high acceptance and perceived benefits also low helplessness.

Table 3 shows the incidence of depression in this study. Just above three-quarters of respondents had no depression, but less than a fifth experience mild depression and a total of 12.3% of respondents had moderate to major depression.

Table 4 shows that of the three dimensions of illness cognition consisting of helplessness, acceptance, and perceived benefits, the helplessness dimension is the only dimension with a significant correlation with depression. Also, the correlation coefficient (r) indicates a positive correlation between helplessness and depression with moderate correlation strength.

Table 5 shows that all items on the helplessness variable are significantly associated with depression. However, items 1, 7, and 12 had a higher significant correlation than other items. The correlation coefficient of all items shows a positive correlation between each item with depression.

**Discussion**

This study aimed to investigate the correlation between illness cognition and depression. Our study found that the helplessness dimension of illness cognition had a significant correlation with depression. Thus, this study supported prior research, which stated that helplessness was associated with depressive symptoms in patients with myocardial infarction (Karademas & Hondronikola, 2010) and patients with other chronic diseases such as chronic renal failure (Theofilou, 2011) and rheumatoid arthritis (Kwan et al., 2014). However, this study differs from Smallheer et al. (2018) in terms of participants. Smallheer et al. (2018) investigated the relationship between helplessness and depression among patients diagnosed...
with CHD for at least a year. In this study, participants were involved from the acute care phase (several days after a heart attack) to more than six months after being diagnosed with CHD. This result showed that helplessness could occur since the beginning of an acute attack of CHD; previous research even stated that helplessness was experienced by patients persistently over time (Karadem as & Hondronikola, 2010).

Helplessness, based on this research, was the only dimension correlated with depression. According to Beck (as cited in Smallheer, 2011), depression results from an individual’s negative assessment. In the context of helplessness studied, depression manifests an individual's failure to get a relationship between response and appropriate outcomes. This condition increases pessimistic beliefs about oneself and negatively affects one’s motivation, cognition, and emotions. Smallheer (2011) confirmed that if a person often fails to get the expected results for the efforts made, helplessness will occur and lead to depression.

According to Capobianco et al. (2020), helplessness is a negative metacognitive belief. Furthermore, this leads patients to an inability to control disease (uncontrollability), which is related to the onset of depression. In this study, uncontrollability can be identified from all of the statements of helplessness (Table 5), which showed a significant correlation with depression; thus, this result upholds findings from Capobianco et al. (2020).

Another study explains that helplessness had an independent impact on negative subjective health, including physical functioning and emotional wellbeing (Karadem as & Hondronikola, 2010). Moreover, Juergens et al. (2010) found a significant relationship between initial illness belief and physical function and disability in the recovery phase of CHD patients after CABG surgery; this relationship shows that illness belief is essential to improve physical function. Furthermore, an increase in physical function reduces the patient’s helplessness, thus diminishing the risk of depression.

Nurses as care providers need to consider helplessness in managing CHD patients because it is correlated with depression. Nurses can opt for various interventions to reduce helplessness. According to Hermele et al. (2007), increasing a better understanding of the patient regarding the disease and the treatment through psycho-education can lessen helplessness. Capobianco et al. (2020) added that helplessness is a form of pessimism, and the way to increase it is by cultivating optimism instead of helplessness through metacognitive therapy. Juergens et al. (2010) also identified illness beliefs related to physical function and disability in the recovery phase of CHD patients following CABG. One of the efforts to reduce helplessness is through increasing physical function. Moreover, improving physical function in CHD patients can be achieved through cardiac rehabilitation (Sutantri et al., 2019; Nuraeni et al., 2020; Su et al., 2020). However, those interventions still require further investigation of their influence on reducing helplessness among CHD patients in Indonesia.

Results also showed that acceptance and perceived benefits were not significantly correlated with depression. These may be attributable to several following explanations. According to Hirani and Newman (2005), acceptance is "Perceived ability to diminish, live with and master the aversive consequences of one’s disease; recognizing the need to adapt to the chronic illness." While perceived benefits are " positive consequences arising from illness; benefits obtained, such as changes in life priorities and personal goals, positive personality changes, and stronger personal relationships." These two dimensions of illness cognition help deal with the disease. Furthermore, Karadem as and Hondronikola (2010) state that acceptance was related to positive subjective health, which showed better physical function and emotional wellbeing.

Study Limitation
The determination of the sample using convenience sampling in this study is acceptable considering the sample involved a vulnerable population. Furthermore, the sample representation that depicts each category of care installation in the study had not considered the proportion of the average number of patients treated in each service unit, thus affecting the generalizability of the findings.

Conclusion
Based on three dimensions of illness cognition, helplessness was the most influential factor in depression among patients with CHD in Indonesia. Considering the adverse effects of depression, the factors that can reduce depression in CHD patients need to be identified and further explored to be used as potential measures in reducing the risk of depression.

Declaration of Conflicting Interest
The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Authors’ Contribution
AN provided article development, ideas, reviewed theories, and literature analyzed, interpreted data wrote, and made manuscript final approval. AA, AP, and DN designed the study, data analysis, revised manuscript, and made final approval of the manuscript. All authors contributed and agreed with the final version of the manuscript.
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Data Availability Statement

All data generated or analyzed during this study are included in this published article (and its supplementary information files).

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Amni, R. (2020). Hubungan antara kesejahteraan spiritual dan tingkat depresi pasien sindrom koroner akut di unit perawatan intensif [The relationship between spiritual well-being and depression levels of patients with acute coronary syndrome in the cardiac intensive care unit]. (Theses), Padjadjaran University, Bandung, West Java, Indonesia. Retrieved from http://repository.unpad.ac.id/frontend/index/index/dccd1/36422


Effect of care for child development training on cadres’ knowledge, attitude, and efficacy in Yogyakarta, Indonesia

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Abstract
Background: Stunting is a common malnutrition problem among children in the world. The Care for Children Development (CCD) intervention is a strategy to reduce stunting.
Objective: This study aimed to identify the effect of culturally modified CCD training on the knowledge, attitude, and efficacy (KAE) of cadres about stunting in the community.
Methods: We conducted a community-based study with a quasi-experimental research design using a comparison group. The study was conducted from March 2018 to February 2019 at three Public Health Centers in Yogyakarta, Indonesia. The total participants were 69 in the intervention group and 53 in the comparison group. Cadres in the intervention group received two days of training on a culturally modified CCD guideline. In contrast, cadres in the comparison group received a brief explanation (a one-day training) on that program. The nurses from three public health centers were facilitators in this training. Knowledge and self-efficacy were assessed using a modified Caregiver Knowledge of Child Development Inventory and General Self-efficacy Scale, respectively. Data were analyzed using Mann-Whitney U and Wilcoxon tests.
Results: All 122 cadres completed the training. In the intervention group, CCD training significantly increased cadres’ knowledge (median score 14 vs. 11), attitude (58 vs. 55), and efficacy (30 vs. 28), all with p <0.001. In the comparison group, the short explanation of CCD significantly improved cadres’ knowledge (median score 12 vs. 10) and efficacy (29 vs. 27) but not their attitude. The delta or change in score before and after CCD training for cadres’ attitude in the intervention group was significantly higher than that of the comparison group (3.78 vs. 0.72; p = 0.050).
Conclusion: A culturally modified CCD training significantly improves cadres’ KAE in the intervention group and cadres’ knowledge in the comparison group. The learning delivery methods with demonstrations and role-plays significantly improved the cadres’ attitudes as health educators for stunted mothers in the community. For sustainability, community health nurses should regularly collaborate with cadres to improve the nutritional status of children in their area.

Keywords
child; volunteer; attitude; efficacy; nutritional status; nursing; Indonesia

Globally, stunting is a common malnutrition health problem among children. In 2019, the prevalence of stunting was around 21.3% (UNICEF, 2020). Commonly found in Low-Middle-Income-Countries (LMICs), the highest prevalence of stunting occurs in Madagascar (49.8%), Guatemala (47%), Niger (47.5%), Burundi (54%), Madagascar

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(49.8%), Timor-Leste (49.8%), and Yemen (45.4%) (Kinyoki et al., 2020). The prevalence of stunting among children in Indonesia has been fluctuating. Recently, the prevalence of stunting was reduced from 37.2% (2013) to 30.8% (2018) (Indonesian Ministry of Health, 2018). Indonesia is still ranked second in South East Asia after Cambodia, which is based on the World Health Organization (WHO)’s indicators, where the countries with a prevalence of more than 20% indicate the chronic stunting condition.

Stunting has a long-term effect on growth and development. Previous studies found that the most impact of stunting involved lower cognitive development, school achievement, and economic productivity during adult and maternal reproduction health (Woldehanna et al., 2017; Alam et al., 2020). In addition, stunted children under two years old are more susceptible to suffer infection and diseases.

Review studies found some factors that contributed to the stunting of Indonesian children. These included male, premature birth, short birth length, maternal height, low maternal education, low household economic status, untreated drinking water, poor access to health care, living in a rural area, number of the household member under 5-year-old, weight at birth, and number of antenatal care (ANC) visits (Beal et al., 2018; Nshimiyiro et al., 2019; Titailey et al., 2019).

Recent research found that the most important factor affecting stunting was the maternal education level. Mothers with a lack of formal education were more likely to have stunted children (Berhe et al., 2019). In collaboration with The United Nations International Children’s Emergency Fund (UNICEF), the WHO developed the Care for Child Development (CCD) program. This program aims to improve the mother’s (caregivers’) capability to be more sensitive and responsive to promote psychosocial development in young children (Chung et al., 2017). The CCD intervention has been piloted in 19 countries. However, only three countries implemented it as a national health policy that integrated the CCD with the health sector (Lucas et al., 2018). For example, in Pakistan, CCD interventions that involved Lady Health Workers (LHW) have enhanced the nutritional status among children under four years (Yousafzai et al., 2016).

In Indonesia, the large geographic diversity leads to inequality in many aspects of health care services, including access and coverage (Al-Ashwal et al., 2020). In 2018, the ratio of nurses for 1,000 population in Indonesia was 2.41 (The World Bank, 2021), which is less than what is recommended by the Organization for Economic Co-operation and Development (OECD) (OECD, 2019). In addition, most nurses are working in the hospital setting, and only a limited number of nurses are working in the community. Nurses working in Public Health Centers (Puskesmas) are responsible for monitoring children’s health, growth, and development. Due to the limited number of nurses, they often involve cadres (LHW). Usually, the cadres in every village can routinely monitor children’s nutritional and developmental status through community programs such as Balita, which are focused on children <5 years old (Solikhah et al., 2018). Nurses from the local Puskesmas are responsible for providing training and supervising the volunteer cadres. The CCD program is essential to improve the Knowledge, Attitude, and Efficacy (KAE) of cadres. It will increase cadres’ capability to fulfill their role as health educators and health facilitators in the community. However, the CCD intervention needs modification according to cadres’ culture and local wisdom or mothers/parents in the community. The local wisdom approach will help cadres adapt their strategy and reach the goals of CCD training (Yousafzai et al., 2016). Recent research has shown that cultural involvement in training improved cadre’s knowledge, attitude, and skills in the community (Subandi et al., 2019). In this study, the CCD intervention was modified by adding traditional games, Javanese music, and local forms of advice-giving. This study aimed to assess the effect of the CCD training on cadre’s knowledge, attitude, and efficacy about stunting, in Yogyakarta, Indonesia.

**Methods**

**Study Design**

We conducted a community-based study with a quasi-experimental research design using a comparison group from March 2018 to February 2019.

**Study Setting and Participants**

The study was conducted in Yogyakarta Special Province, Indonesia. Yogyakarta Special Province consists of five districts: Kulon Progo, Sleman, Gunung Kidul, Bantul, and Yogyakarta City District. In 2019, the Kulon Progo District had the second highest ranked prevalence of stunted children (Health District Yogyakarta Province, 2019). From 12 sub-districts, Samigaluh and Kalibawang sub-district had the highest prevalence of stunting in their population. Both sub-districts are rural and remote areas.

**Puskesmas** serves as the first gate to access health care services in Indonesia. In Kulon Progo District, there are 21 Puskesmas, and each has a responsibility to cover a minimum of 30,000 population. Based on the current data from the Health District Yogyakarta Province, the highest number of stunted children were found in the areas covered by Puskesmas Kalibawang, Puskesmas Samigaluh I, and Puskesmas Samigaluh II. For sustainability, the community health nurses should regularly collaborate with cadres to improve the nutrition status of the children in their area. Therefore, we recruited cadres who are working under the supervision of nurses from those three Puskesmas. The cadres are healthcare volunteers who have a responsibility to support health programs in the community. Most of them are women who live in their village, and they do not receive a salary.

Cadres living in Kalibawang were assigned as the two-day training group, and cadres living in Samigaluh were selected as the one-day training group. The convenience

A sampling method was used with the following inclusion criteria: registered cadres in the Puskesmas, minimal education background of Junior high school, living in sub-village with stunted children < 2 years old, and agreed to participate in the program. The details of the participant selection are shown in Figure 1.

**Figure 1** The process of participant selection

**Instruments**
We collected data concerning the basic characteristics of participants, including age, educational background, duration as cadres, and quantity of training. The knowledge data described the knowledge of cadres related to children’s development, how to give children stimulation, and how to educate mothers about how to do mother-child interaction according to their development stage. The knowledge of cadres was evaluated by the Caregiver Knowledge of Child Development Inventory (CKCDI), consisting of 20 questions (Ertem et al., 2007). The Indonesian version of the CKDI has been culturally and linguistically validated (translated and back-translated). The Cronbach alpha of the knowledge instrument was 0.820. The range score is 0 ~ 40, with the higher score indicating more knowledge (Shrestha et al., 2019).

Attitude mainly describes how the cadres respond appropriately, including how to provide support or not through children development counseling. We developed a questionnaire to assess the cadres’ attitude, modified from the WHO’s CCD guideline (WHO, 2012). It consists of 19 items with a Cronbach alpha of 0.831. The range score of 4~ 76. A higher score indicates a higher attitude.

The cadres’ efficacy was a measure of the cadres’ confidence to educate primary caregivers regarding the stimulation of children’s development. We used the...
Data Collection
The study process is described below:

1. Pre-intervention phase
In this phase, the researchers identified people involved in this study, such as instructors, facilitators, and enumerators. Instructors have a task to deliver the training material to cadres. Instructors were nurses from the School of Nursing Universitas Gadjah Mada, Yogyakarta, with master’s or doctoral education backgrounds. Facilitators were selected from community health nurses from the three Puskesmas. Facilitators had the tasks to support the demonstrations during the training process, while enumerators had to collect the data before and after the intervention. All instructors, facilitators, and enumerators were trained before the implementation of the study.

The research team developed a training module based on the WHO CCD guideline. We modified it to the culture and local wisdom of cadres or mothers/parents in the community. The module was complemented with video, PowerPoint (PPT) presentation, and local toys. All of the local toys were adopted from Javanese culture. The module consists of a pocketbook and counseling card. The topics covered in the module included: who has the responsibility to care for the children; child development care; how to use counseling cards; recommendation for child development care; advice to improve communication and play, and how to create toys for playing. Additional topics included: family counseling how to child development care; how to observe, listen, and ask questions to make accurate child development care identification; how to give feedback, advice, and reinforcement to mother (caregivers); how to create a follow-up for child development care problems; and how to deliver counseling and help solve any issues. The module was piloted before the study implementation.

2. Intervention phase
The CCD training for the intervention group lasted two days. On the first day, the training methods in this group were reading the module, watching a video, demonstrating, and role-playing. On the second day, all cadres showed the counseling practice to a mother under the supervision of instructors. In this step, each cadre provided counseling to five mothers. The cadres received the CCD introduction, then watched the educational video and engaged in small group discussion.

Before the training started, questionnaires for the pre-test were distributed to participants, and questionnaires for the post-test were distributed three weeks after the training program. The CCD training was conducted in each village office. The training activities are described in Table 1.

<table>
<thead>
<tr>
<th>Table 1 The differences in the CCD training for the two groups</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intervention / Two-day training group</strong></td>
</tr>
<tr>
<td>Training media</td>
</tr>
<tr>
<td>CCD module</td>
</tr>
<tr>
<td>Pocketbook</td>
</tr>
<tr>
<td>PowerPoint</td>
</tr>
<tr>
<td>Video</td>
</tr>
<tr>
<td>Checklist sheet</td>
</tr>
<tr>
<td>Sticky sheet</td>
</tr>
<tr>
<td>Stimulation kit</td>
</tr>
<tr>
<td>Instructor</td>
</tr>
<tr>
<td>7 Nurses</td>
</tr>
<tr>
<td>Delivery method</td>
</tr>
<tr>
<td>Face-to-face training</td>
</tr>
<tr>
<td>Reading module</td>
</tr>
<tr>
<td>Watching video</td>
</tr>
<tr>
<td>Question and answer</td>
</tr>
<tr>
<td>Role-play</td>
</tr>
<tr>
<td>Demonstration</td>
</tr>
<tr>
<td>Duration</td>
</tr>
<tr>
<td>10 hours</td>
</tr>
<tr>
<td>Evaluation method</td>
</tr>
<tr>
<td>Direct feedback</td>
</tr>
<tr>
<td>Questionnaires</td>
</tr>
<tr>
<td>Redemonstration</td>
</tr>
</tbody>
</table>

Data Analysis
Descriptive statistics were used to describe the distribution, frequency, and percentage of variables with means and standard deviation (SD). The comparisons of participants’ levels of knowledge, attitude, and efficacy between pre-and post-intervention in each group were assessed using nonparametric Mann-Whitney U tests. For comparison analysis of pre-and post-intervention tests between the...
two groups, we used Wilcoxon Sign tests. *P*-value less than 0.05 indicated statistical significance. All analyses were performed using SPSS for Windows version 19 (SPSS, Chicago, IL, USA).

**Ethical Consideration**
This study was approved by the Medical and Health Research Ethics Committee (MHREC) Faculty of Medicine Gadjah Mada University-Dr. Sardjito General Hospital with number: KE/FK/0145/EC/2018. Informed consent was obtained from all participants. Firstly, we explained the purpose, the process of the study, and the benefits for the participants. Secondly, we provided time for the participants to clarify or ask questions related to the study. Finally, written informed consent was obtained from all participants before the study was conducted.

**Results**
Table 2 shows the basic characteristics of participants. The mean age, duration experiences as cadres, and training frequencies were closely similar in both groups. However, the educational background was significantly lower in the two-day training group than in the one-day group.

**Table 2** The baseline characteristics of intervention and comparison training groups (N = 122)

<table>
<thead>
<tr>
<th></th>
<th>Intervention group (n = 69)</th>
<th>Comparison group (n = 53)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (year)</td>
<td>42.09 ± 8.37</td>
<td>41.26 ± 7.88</td>
<td>0.818*</td>
</tr>
<tr>
<td>Educational background</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior high school</td>
<td>50 (72.5%)</td>
<td>22 (41.5%)</td>
<td>0.001*</td>
</tr>
<tr>
<td>Senior high school and above</td>
<td>19 (27.5%)</td>
<td>31 (58.5%)</td>
<td></td>
</tr>
<tr>
<td>Experience as cadres (year)</td>
<td>9.93 ± 8.08</td>
<td>11.93 ± 8.10</td>
<td>0.157</td>
</tr>
<tr>
<td>Quantity of training</td>
<td>3.65 ± 1.62</td>
<td>3.64 ± 1.62</td>
<td>1.000*</td>
</tr>
</tbody>
</table>

Note: * p < 0.05; ** p < 0.01; *** p < 0.001; #Independent t-test; $^{*}$Chi-square test

Table 3 shows the comparison of the participants’ levels of knowledge, attitude, and efficacy in intervention and comparison groups at the baseline and the end of the training period. At the baseline, the knowledge of both groups was significantly different. The mean of knowledge in the intervention group was slightly higher than the comparison group. After the intervention, the knowledge of both groups was still significantly different. However, the level of efficacy was only significantly different between the intervention group and the comparison group in the post-intervention scores.

**Table 3** Comparison of knowledge, attitude, and efficacy in the intervention and comparison group at the baseline and end line

<table>
<thead>
<tr>
<th></th>
<th>Intervention group (n = 69)</th>
<th>Comparison group (n = 53)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>11 (7–16)</td>
<td>10 (7–14)</td>
<td>0.027*</td>
</tr>
<tr>
<td>Attitude</td>
<td>55 (36–75)</td>
<td>57 (47–69)</td>
<td>0.159</td>
</tr>
<tr>
<td>Efficacy</td>
<td>28 (10–37)</td>
<td>27 (19–34)</td>
<td>0.120</td>
</tr>
<tr>
<td>Post-Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>14 (9–16)</td>
<td>12 (4–18)</td>
<td>0.001***</td>
</tr>
<tr>
<td>Attitude</td>
<td>58 (50–74)</td>
<td>57 (49–70)</td>
<td>0.16</td>
</tr>
<tr>
<td>Efficacy</td>
<td>30 (23–39)</td>
<td>29 (21–40)</td>
<td>0.017*</td>
</tr>
</tbody>
</table>

Note: * p < 0.05; ** p < 0.01; *** p < 0.001; Mann-Whitney test

Table 4 Knowledge, attitude, and efficacy before and after the intervention in both intervention and comparison groups

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median (min-max)</td>
<td>Median (min-max)</td>
<td></td>
</tr>
<tr>
<td><strong>Intervention Group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>11 (7–16)</td>
<td>14 (9–16)</td>
<td>0.001***</td>
</tr>
<tr>
<td>Attitude</td>
<td>55 (36–75)</td>
<td>58 (50–74)</td>
<td>0.001***</td>
</tr>
<tr>
<td>Efficacy</td>
<td>28 (10–37)</td>
<td>30 (23–39)</td>
<td>0.001***</td>
</tr>
<tr>
<td><strong>Comparison Group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>10 (7–14)</td>
<td>12 (4–18)</td>
<td>0.001***</td>
</tr>
<tr>
<td>Attitude</td>
<td>57 (47–69)</td>
<td>57 (49–70)</td>
<td>0.255</td>
</tr>
<tr>
<td>Efficacy</td>
<td>27 (19–34)</td>
<td>29 (21–40)</td>
<td>0.001***</td>
</tr>
</tbody>
</table>

Note: * p < 0.05; ** p < 0.01; *** p < 0.001; Wilcoxon Sign test
Table 4 shows the comparison of pre-test and post-test scores in both groups. The mean scores before and after CCD training in the intervention group were significantly increased for all outcomes: knowledge, attitude, and efficacy ($p < 0.001$). However, the scores of the comparison group increased only for knowledge and efficacy ($p < 0.001$). Table 5 shows the comparison effect of CCD intervention on knowledge, attitude, and efficacy between the intervention and the comparison groups. The score change or delta before and after CCD training for attitude in the intervention group was significantly higher than the comparison group ($3.78$ vs. $0.72$; $p = 0.05$).

Table 5 Comparison of CCD training on knowledge, attitude, and efficacy between the intervention and comparison groups

<table>
<thead>
<tr>
<th>Variables</th>
<th>Intervention group (n = 69)</th>
<th>Comparison group (n = 53)</th>
<th>Delta difference</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Mean score ± SD</td>
<td>Mean score ± SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.35 ± 2.24</td>
<td>0.38</td>
<td>0.342*</td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>3.78 ± 7.21</td>
<td>0.72 ± 6.11</td>
<td>3.06</td>
<td>0.050**</td>
</tr>
<tr>
<td>Efficacy</td>
<td>2.62 ± 3.82</td>
<td>1.96 ± 3.73</td>
<td>0.66</td>
<td>0.341*</td>
</tr>
</tbody>
</table>

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; Independent t-test; * Mann-Whitney test; SD (standard deviation)

Delta means score = mean score after intervention- mean score before intervention

Discussion

This study aimed to identify the effect of culturally adapted CCD training on cadres’ knowledge, attitude, and efficacy. Results indicated that CCD training significantly increased cadres’ knowledge, attitude, and efficacy in the two-day training group. In the comparison group, the CCD training significantly improved cadres’ knowledge and efficacy but not their attitude. The final results show that the delta score before and after CCD training for cadres’ attitude in the intervention group was significantly higher than that of the comparison group.

For cadres’ knowledge, the mean difference was slightly higher for the two-day training group than that of the comparison group because the education background of cadres in the one-day training group was higher, and their experience was longer than that of the intervention group. This is the possible reason why the knowledge of both groups differed slightly. The previous study found that the higher education background in health volunteers will help them better understand new information. Therefore, they will easily improve their performance as health volunteers (Chung et al., 2017). The differences between learning methods for both groups also contributed to the different knowledge scores for both groups. However, in the final result, this was not significantly different. So, we assume that all participants had enough resources, appropriate learning methods, and had enough time to practice the material by themselves. Therefore, the learning methods of CCD training in this study for the two groups can be implemented for cadres in the community. One previous study stated that the role-play method was more effective in increasing knowledge (Vizeshfar et al., 2019). Considering the duration of intervention, another study found that it was significant in increasing the participants’ knowledge between intervention and control groups. The knowledge score was higher in the group that received a more extended training duration (Tambi et al., 2019).

However, in this study, the two-day and one-day interventions have similar increases in the knowledge of cadres. Another possible reason for this result is the CCD training had already been adapted into the participants’ culture and local wisdom. The culture approach reduced the barriers of interaction between instructors and cadres during the intervention. Cultural awareness is considered an important factor when the researcher adapts some health guidelines into a community (Shepherd et al., 2019). The CCD training in this study was only adapted for the Javanese culture. These results also serve as a reminder for the health workers or leaders in the community that they should be sensitive to various Indonesian cultures. Overall, the increasing knowledge in the CCD training is vital to increase awareness of cadres about the stunting children in their community (WHO, 2012).

We found the cadres’ attitude was significantly higher in the intervention group than that for the comparison group. This result may occur due to the different learning methods. One study found that a better mood increased the motivation of the students to study and improve their cognitive capacity (Forbes & Schmader, 2010). The increasing of knowledge in this result had the primary goal to increase the attitude of cadres. It was consistent with the previous study that found the levels of knowledge and attitude were strongly linear (Muleme et al., 2017). For the delivery of health education in the community, the attitude of cadres becomes a motivation to deliver health education to mothers in the community. In the CCD intervention, their willingness develops into good behavior during the interaction between cadres and mothers or parents in the counseling section.

Besides that, the methods of CCD training in this study also used role-play and demonstration. Using role-play is known to increase participants’ attitudes and knowledge compared to the lecturer method (Wang et al., 2015). The benefits of role-playing and demonstrations were to reduce the boredom of the audience and increase the enthusiasm in their attitude. Notably, these methods use more sense of body language and going through the motions to receive the new information. However, the use of role-playing and redemonstration was time-consuming (Vizeshfar et al., 2019).
The increase of the cadres’ efficacy is part of the main goal of the study. The efficacy score of CCD training increased before and after intervention for both groups. However, the efficacy of volunteer health workers is influenced by their knowledge and attitude (Zamani-Alavijeh et al., 2019). The people who have good efficacy will generally be confident and successful in communicating with other people. They will efficiently deliver the information to other health volunteers (Alber et al., 2016). Therefore, efficacy is an essential factor to consider in performing as a health educator.

An important aspect of the efficacy’s concept is vicarious experience when they get new information from observation activity. This concept was successfully implemented in the CCD training. Demonstrations and role-plays are appropriate delivery methods in the intervention. It allows participants to increase their efficacy. During the intervention, participants can observe responses from the trainer, mother or parent, and children. In general, good efficacy contributes to the cadres' performance. However, some additional factors influence the efficacy. A previous study stated that some influencing factors were the quantity and quality of the training (Zamani-Alavijeh et al., 2019). Related to the characteristics of the participants in this study, the results showed that they had a similar quantity of training, although the duration of experience as cadres was slightly different. For quality, this study tried to combine face-to-face, demonstration, and role-play for learning methods. Results showed a slightly higher change of efficacy in the intervention group compared to the control group. Several factors, such as encountering unexpected events, can cause self-efficacy reduction. Typically, vicarious experiences, self-concept, and self-efficacy act as reciprocally interacting influences on a person’s perception of trust, while professional knowledge and skills also are known to increase efficacy.

Our results show that the CCD training can be implemented for cadres in Indonesia. The increasing number of cadres with CCD training experience is expected to create better health educators for mothers or parents with stunted children in the community. This study’s implications support how cadres' role can increase nutrition status among children in the community with supervision by community health nurses from Puskesmas. This improvement in nutrition is an essential part of the role of the nurses especially related to community health empowerment activities. Therefore, the Indonesian Government should support and facilitate the current and continuous training for cadres in the community.

Strengths and limitations
As far as our knowledge, this was the first study to examine the effect of culturally modified CCD intervention training among cadres in rural areas, especially on knowledge, attitude, and efficacy. Nevertheless, this study has some limitations. First, the study was not a true experimental design. The selection bias of participants was possible in this study. Further study with a randomized control trial is needed. Second, we only assessed the knowledge, attitude, and self-efficacy only one time after the intervention. Finally, the material of CCD intervention was adapted for Javanese culture. Accordingly, when other researchers want to adapt the material, they should be sensitive to the culture of the cadres’ life.

Conclusion
A culturally modified CCD training significantly improved cadres’ knowledge, attitude, and efficacy in the intervention and control groups. In addition, the learning delivery method with demonstrations and role-plays significantly improves cadres’ attitudes as health educators for stunted mothers or parents in the community. For sustainability, the community health nurses should regularly meet with cadres to maintain their current knowledge, attitude, and efficacy.

Declaration of Conflicting Interests
The authors declare no competing interests in this study.

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Authors’ Contributions
AA, SH, MNS, and FH shared the responsibility to develop the study design. AA collected the data. AA and EM performed data analysis. EM and MNS have drafted the manuscript. AA, SH, and FH revised it critically for important intellectual content. All authors have read and approved the final manuscript and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Data Availability Statement
All data generated or analyzed during the study are available by request to the corresponding author. However, we do not make participants’ data publicly available due to data protection restrictions and participant confidentiality.

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Senior nurses’ perceptions of essential soft skills for novice nurses in a private hospital in Jakarta, Indonesia: A phenomenological study

Ernawati¹* and Cicilia Nony Ayuningsih Bratajaya²△

Abstract

Background: Nursing jobs are very complex and stressful, and nurses are demanded to have high competency and soft skills to keep their performance. However, the nursing workload often leads to fatigue, and it will be very challenging for novice nurses. Therefore, they need to be trained in soft skills in order to be able to control their emotion and adapt to the situation. Unfortunately, studies on essential soft skills for novice nurses in Indonesia are scarce; further research on this topic is a necessity.

Objective: This study aimed to explore the perception of senior nurses about the essential soft skills for novice nurses during their work adaptation process.

Methods: This qualitative study used an interpretive phenomenology approach, which was conducted in a private hospital in Jakarta, the capital city of Indonesia. Data were collected using semi-structured interviews from ten senior nurses selected using a purposive sampling technique. Data were analyzed using Gadamer’s hermeneutic approach.

Results: Nine essential soft skills were developed for novice nurses during their transition phase from education to practice, including self-control, initiative, caring, self-motivated, hospitality, flexibility, adaptability, analytical skill, and presentation skill.

Conclusion: Findings of this study serve as a basis for developing the soft skills of novice nurses in their clinical practice in hospitals in Indonesia. It is also recommended that soft skills should be included in the nursing education curriculum. However, soft skills are essential for novice nurses to succeed in their adaptation and future career.

Keywords

novice nurse; new graduate nurse; soft skills; nursing; Indonesia

Nursing is a profession that touches other’s lives. Nurses are responsible for bringing wellness to patients. Nevertheless, nursing is considered a stressful profession (Ibrahim et al., 2016). A nursing job is complex because they must apply competencies—knowledge, motor skills, and affection—simultaneously. Nursing students are prepared for those three competencies in the nursing education profession (Ibrahim et al., 2016).

Some barriers would interfere with a nurses’ work quality. Studies show that nurses’ workloads make them susceptible to stress (Regan et al., 2017). Because of their workload, time restriction, and lack of professional role understanding, nurses lack compassionate care and tend to do routines (Babaei & Taleghani, 2019). A study at a hospital in Thailand showed that nurses’ emotional fatigue affected service delivery for patients, such as falls, errors in drug administration, and increased infections (Nantsupawat et al., 2016). Thus, a nurse’s psychological condition can interfere with their work performance. However, Foster et al. (2015) highlighted that someone who has a strong
capacity for soft skills would show the ability to control personal emotion, flexibility to face changes and adapt, optimism, innovation, and initiative.

Soft skills are a set of skills believed to be helpful in workplaces. As for nurses, soft skills contribute to meet the demands of the nursing profession. Clinque (2016) groups soft skills into several categories: personal skills, social skills, self-skills, and learning skills. Soft skills involve social or interpersonal skills and the ability to achieve and apply competencies in various situations (Clinque, 2016). In relation to nursing jobs, some studies confirmed that soft skills play important roles in nursing practice (Seutload, 2015; Ng, 2020). Raghubir (2018) stated that the quality of patient care, using critical thinking for decision making are essential soft-skill attributes. These are also needed in order to make satisfying collaboration with fellow nurses and other healthcare professionals. Thus, having soft skills make it easier for nurses to do their nursing job. This also applies to a novice nurse. Novice nurses need to use both of their hard- and soft-skills attributes in their adaptation phase to succeed in their nursing careers. Soft-skills capacities enable them to succeed in their job. However, such competencies are considered more problematic for freshly graduated nurses.

Generally, in Indonesia, novice nurses are those who have just graduated with a diploma or bachelor’s degree in nursing, should have one year of experience for the orientation at a hospital, guided by senior nurses who have authority when they are in charge during a shift at a ward/unit. Nurses who undergo clinical practice have independent management and provide holistic nursing care (Hariti & Rejeki, 2020; Hartiti et al., 2020). The human resources hospital management has requirements for qualified nurses who show professional attitudes to provide patients’ satisfaction. A better quality of nursing care indicates a higher level of nursing services (Hartiti et al., 2020).

Studies about soft skills in nursing education are considered scarce. However, one of the preliminary studies from 264 bachelor nursing students about soft skills in Indonesia found that the soft skills of nursing students in the 2nd, 4th, 6th, and 8th semesters have increased each semester. The study could be underlined as the maturity of professional attitude. In addition, it is also found that 32.3% of nursing students had high soft skills, 55.7% with moderate soft skills, and 12% with low soft skills. The best soft skills of the students were teamwork, morale, and professional ethics, while the lowest soft skills were the ability to lead and the capability for critical thinking (Hariti & Ernawati, 2016).

Several studies have examined some essential soft skills to support carrying out duties and responsibilities in the workplace; one of the studies was conducted by Chiu et al. (2016). However, fewer studies have captured important soft skills for nursing jobs. To deliver the quality of nursing care, nurses need to have such essential characteristics: reliability, responsiveness, empathy, and assurance (Ng, 2020). In the context of Indonesia, the study conducted by Ariani and Aini (2018) found that nurses caring behavior is one of the factors that determine a patient’s satisfaction. However, those two studies did not specifically capture the soft skills needed by new graduate nurses to be successful in their early career life.

In addition, those studies only included the patients and or their families as the research participants. In fact, in doing nurses’ works, the freshly graduated nurses need to collaborate with other healthcare workers to achieve nursing goals. Therefore, it is necessary to know the perception of senior nurses about what essential soft skills are needed by new fresh graduate nurses or novice nurses. Therefore, this qualitative study aimed to explore the perceptions of senior nurses in a private hospital in the capital city of Indonesia regarding essential soft skills for novice nurses.

Methods

Study Design

This study used a qualitative research design with interpretive phenomenology as the methodology to get the perception of experienced nurses of how soft skills may impact the performance of novice nurses. Phenomenology is considered appropriate for understanding the significance of one’s experience (Polit & Beck, 2017). Furthermore, interpretive phenomenology describes the phenomenon and emphasizes researchers’ understanding of socio-historical context when interpreting and understanding a phenomenon (Polit & Beck, 2017). The study was conducted at one private hospital in Jakarta, the capital city of Indonesia, as a meeting place for various people from different cultures in Indonesia.

Participants

The recent study includes ten nurses who matched the inclusion criteria: nurses with ten years of working experience at the hospital, interacting intensely for at least three months with new graduate nurses, and serving as mentors for novice nurses during the orientation period in the hospital. The participants were from several different care units: Intensive Care Unit (ICU), emergency department, surgery room, medical care unit, pediatric room, and primary care unit. Data saturation could be achieved even when only five to eight participants are included (Norwood, 2010; Boswell & Cannon, 2014; Polit & Beck, 2017). The participants were recruited using a purposive sampling technique.

Data Collection

The data were collected in one private hospital in Jakarta, the capital city of Indonesia, from June to July 2018. Semi-structured interviews were used, and several interview questions were prepared prior to data collection (Table 1). The interview was held in a secure place in the participants’ work unit for about 30-60 minutes, audio recorded, and conducted in Indonesia language by the first author.
Table 1 Example of questions from the interview guide

<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What routine tasks do new graduate nurses do in health care service in the hospital?</td>
</tr>
<tr>
<td>2. What specific tasks are usually given in their early days of working as novice nurses?</td>
</tr>
<tr>
<td>3. What factors enable the new graduate nurses to adapt quickly to their job and working environment?</td>
</tr>
<tr>
<td>4. What experiences regarding the new graduate nurses’ soft skills do you have?</td>
</tr>
<tr>
<td>5. What soft skills should the new graduate nurses have?</td>
</tr>
<tr>
<td>6. What are your expectations for educational institutions in educating prospective nurses?</td>
</tr>
</tbody>
</table>

Data Analysis

Data were analyzed using Gadamer’s hermeneutic approach (Gadamer, 1989). This approach has three characteristics: prejudice (prior knowledge), hermeneutical circle, and tradition (culture or context). In interpreting the meaning of the studied object, the researchers should bring together the prior knowledge and the background into the hermeneutical circle (Gadamer, 1989). Prejudice (prior knowledge) helped researchers to understand the topic being studied and the process of data interpretation. The initial perception obtained from the experiences as lecturers in one of the nursing schools in Jakarta would enrich the study results. Prior knowledge makes it possible for the researchers to understand research’s participants’ perspectives. Some of the prior knowledge owned were: nature of the nurses’ job, researchers’ previous experience in guiding nursing students, and Indonesian cultural understanding. Knowing and experiencing all of those things makes the researchers have a sense of a research context. The background is essential to help researchers understand the reason for one’s behavior. The hermeneutical circle process makes it possible for the researchers to track back again to the previous steps. With prior knowledge and background, as well as the hermeneutical circle process, it is believed it might bring the researchers to make the correct interpretation of the studied topic.

In this study, firstly, the researchers attempted to gain a sense of the data. After that, the researchers analyzed the data in more detail. Finally, in generating the precise meaning, the transcripts were read repeatedly until fusion was gained and a new understanding was developed. The analysis process is described in the cycle below (Figure 1 and Table 2).

Trustworthiness/ Rigor

The interviews of all participants were recorded using an electronic audio recorder to seek the study’s credibility. This process enabled the researchers to pick up all of the information. Then, the transcripts of the interview were sent to all participants to be validated. The transcripts of the interview were translated by the researchers to eliminate the risk of imprecise meaning. Dependability was obtained by reaching an agreement between two researchers on the data analysis process, while conformability was sought by providing clear research steps. Finally, transferability was obtained by selecting participants from many fields.

Figure 1 Study analysis process

Ethical Consideration

Ethics permission was obtained on 15 January 2018, with protocol number 18-01-0051, from the Ethics Committee of the Health Research Ethics Faculty of Medicine, University of Indonesia, Cipto Mangunkusumo Hospital in Jakarta, Indonesia. Prior to data collection, researchers sought approval from all study participants through informed consent. In conducting this research, the researchers still uphold ethical values such as participant confidentiality and autonomy. Each participant was given the flexibility to withdraw from the study if they felt uncomfortable without any consequences. The benefit of this research for research respondents is that through this research, they could provide an overview of the hospital’s facts and provide suggestions for curriculum improvements to educational institutions, which will affect the quality of nursing care in the hospital’s future.

Results

The study participants ranged in age from 33 to 56 years old nurses from ten different rooms and seven different care units. Their units were: medical care unit, surgical care unit, pediatric intensive care unit, pediatric care unit, intensive care unit, outpatient unit, and emergency care unit. Of ten participants, nine of them were female, and only one was male.

This study revealed nine attributes from three major categories of soft skills needed by novice nurses from the perspective of ten experienced nurses (Figure 2). Based on the experienced nurses’ perspectives, having those soft skills would enable the novice nurses’ successful transition. As a profession with altruistic characteristics, nurses’ soft skills play an essential part in their daily duty. Soft skills
contribute to the quality of patient care and the success of collaborating with colleagues, which in turn will bring positive impacts on the institution where they work. Participants’ quotes of each category can be seen in Table 2.

![Diagram of Nine Essential Soft Skills for Novice Nurses]

**Personal Skills**

Personal skills are aspects related to feeling comfortable and loving what we do. This helps nurses to be part of a good teamwork members because we understand other needs and desires. It also includes honesty of our emotions towards us, co-worker, or people around us. Study participants mentioned some personal skills needed from novice nurses: self-control, initiative, caring, self-motivation (Table 2).

**Self-control**

There will be a time when workplace strain cannot be avoided. The strain arises as a result of interaction made in teamwork or with patients. In an emergency, sometimes it is unavoidable if other team members are outspoken with each other. In this situation, nurses need to control their feelings and not be easily offended so that their performance at work will not be affected.

**Initiative**

It is understandable if, in orientation time, the novice nurses have not mastered all nursing procedures properly. However, suppose novice nurses feel they are unable to carry out nursing procedures for patients. In that case, they need to take the initiative to inform the experienced nurses so that they are accompanied. It is hoped that this will reduce the risk of mistakes.

**Caring**

Every nurse should be familiar with the values of conduct in the nursing profession. The nursing profession has a moral idea of caring. This value must be attached to every single part of their action. A nurse needs to be aware of whether their actions are displaying caring values.

**Self-motivated**

Nursing is known as a “dirty job,” one that is considered close to “smelly” and “dirty” things. Many nurses’ daily activities are unpleasant. A nurse needs to be aware of her interest in the nursing job. Feelings of bored and easily frustrated might prove that they do not enjoy their job. Thus, a novice nurse needs to realize whether the nursing profession is the choice or not. Developing self-belonging requires quite a long time. A study participant has a high priority on her career as a nurse. She believes that the profession is part of her life. In addition, from the interviews, personal skills are most expected from the novice nurse working in the place where this study was conducted. Besides being useful during the orientation period, personal skills are also crucial for their future career.
Table 2 Phrases, formulated meaning, code & cluster

<table>
<thead>
<tr>
<th>Phrases</th>
<th>Formulated meaning</th>
<th>Code</th>
<th>Cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Do not be easily offended, yes this attitude has to be eliminated, mmm...because if everybody is reacting like that, it won’t solve any problems.” (P1)</td>
<td>The irritable character has the potential to impede the work.</td>
<td>Self-control</td>
<td>Personal Skills</td>
</tr>
<tr>
<td>“Fresh graduate nurses may inform any experienced nurses that they actually cannot do a procedure properly. If they doubt their abilities in conducting a procedure, they may ask for a companion because the orientation process has not finished yet.” (P2)</td>
<td>Any incompetence needs to be told openly to experienced nurses or mentors.</td>
<td>Initiative</td>
<td></td>
</tr>
<tr>
<td>“...for example, we can sit in front of patients and their families. We care about them, so we educate him to prevent complications...” (P3)</td>
<td>Caring behavior for patients and families is done by giving a lot of time and educating them.</td>
<td>Caring</td>
<td></td>
</tr>
<tr>
<td>“So, if the motivation is only to have a job and get the salary, they won’t enjoy their work. So, it’s easy to get frustrated, easily bored, and so on [...] we live our profession as if we have married our profession. We walk with it entire life” (P3)</td>
<td>One study participant thinks that nurses need nurses with good habits such as smiling and greeting.</td>
<td>Hospitality</td>
<td>Social Skills</td>
</tr>
<tr>
<td>“In my opinion, nurses’ attitude is the most necessary thing for patients. Do not need to prescribe a lot of medicine; the most important is nurses’ attitude. Smiling, greeting, ... I always say “Please keep smiling” to everyone. ”(P2)</td>
<td>The expectation for novice nurses to be flexible to change their day off at any time if needed by their colleague in the working unit.</td>
<td>Flexibility</td>
<td></td>
</tr>
<tr>
<td>“For example, yesterday, it was supposed to be my day off, but because there were many patients at that time, and more nurses were needed, I was called to come to work ... I was called at 4 in the morning.” (P4)</td>
<td>The need to adjust to the rhythm of work in the working unit.</td>
<td>Adaptability</td>
<td></td>
</tr>
<tr>
<td>“As the mobility is high here ... I want them to be fast too. If they work slowly, it would add burden to other team members. So, it cannot take a long time to adapt” (P2)</td>
<td>Analytical thinking is an important attribute. Conducting a scheduled nursing care presentation as an evaluation method for novice nurses.</td>
<td>Analytical skill Presentation skill</td>
<td>Self-regulation of the learning process</td>
</tr>
<tr>
<td>“… I would say that they have to think critically.” (P5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“The first three months were preparing them to make a real presentation in front of the committee who evaluated them.” (P1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Social Skills
Social skills are vital soft skills possessed by all nurses as they need to interact with many people, with patients and their families, and with their teamwork. This study revealed three elements of social skills necessary for novice nurses: hospitality, flexibility, and adaptability.

Hospitality
One of the social skills needed when providing nursing care is hospitality. Hospitality makes it possible for a nurse to make patients feel comfortable and welcome during hospitalization time. This attitude is believed would bring greater contribution to patients’ healing.

Flexibility
Due to a lack of nursing staff in the inpatient unit, a nurse often gets a sudden call to work even though they were previously scheduled to be off work. In a particular situation, the nurses must be willing to change their working schedules.

Adaptability
Novice nurses hope to be adaptive with their team members and follow the rhythm in the workplace. Therefore, the ability to adapt is essential. Due to the quality and effectiveness of nursing care for patients, the new nurses need to adapt quickly to the working culture in the workplace, including adjusting their working speed.

Nursing is a profession close to humans as a social being. To be a nurse, it is must to have strong social skills as they need to interact and collaborate with people with different characteristics. It is undeniable that this profession requires members with excellent social skills.

Self-Regulation of the Learning Process
Self-regulation of the learning process was also a concern of study participants. From the study participants, in the orientation time, novice nurses were also needed to have analytical skills and presentation skills.

Analytical skill
This study revealed the analytical skills needed from a novice. As nurses need to oversee patients’ health conditions for 24 hours, they need to assess patients’ health changes and analyze what intervention modifications should be made.

Presentation skill
In the private hospital where the study was conducted, all novice nurses would also be evaluated through the nursing case presentation. In this study, they set a target for novice nurses to make a presentation. In addition, they must present the implementation of one nursing care they manage in the first three months. Thus, they need to
regulate themselves so that the task of presentation and their daily duty at work could be handled well.

**Discussion**

This study was the first study in Indonesia to examine the essential soft skills for novice nurses, especially in their transition time from education into practice in the workplace. Through the findings of nine essential soft skills, this study has given an overview of what sort of soft skills will be needed in the transition phase that may significantly contribute to improving the quality of nursing care. In addition, the findings in this study can be used to set standard soft skills on nursing staff recruitment in hospitals.

To begin with, the job of a nurse is close to the safety issue. In carrying out their work, a nurse strives to provide high-quality nursing care for the patient's health status. To achieve optimal patient health, a nurse needs to work in a team. Cooperate and collaborate with other nurses and other health care professionals in a hospital, and complement each other according to their competencies. Thus, a nurse needs to have soft skills which will help her to work as a team. Several soft skills that are important to enable nurses to work in a group are self-awareness (Turan, 2018) and a set of social skills.

However, this study did not find self-awareness as one of the essential soft skills for novice nurses. Even though some literature highlighted that this soft-skill is crucial for nurses as an altruist profession (Son, 2018; Turan, 2018), self-awareness will lead nurses to understand their feelings, thoughts, beliefs, and values. Nurses with good self-awareness will provide more care to patients and will affect the quality of service to patients (Rasheed, 2015). It also influences their professional relationship and communication (Turan, 2018). Furthermore, self-awareness is crucial to be owned by novice nurses as it enables them to face difficult situations successfully (Younas et al., 2020). Even though the level of self-awareness is greatly influenced by age and working experiences (Rasheed, 2015), it is difficult for novice nurses to have a high self-awareness level, which is still possible to build during the education period. The education period is one of the opportunities that can be used to build self-awareness. Therefore, it is useful to include self-awareness into nursing curricula (Rasheed, 2015). This study is also supported by Kim and Yi (2015) suggested that self-awareness should be developed during students’ life. If it is not built during the education period, it will be more difficult for novice nurses to display good performance.

This study discovered that caring attribute is important. Caring is considered the identity of the nursing profession. Caring is the soul of the nursing profession. This value must be internalized in every nurse and reflected in their actions every day. One study participant was concerned about novice nurse caring action towards patients and families. In this regard, one application that requires caring values is Person-Centered Care (PCC). PCC by nurses strongly determines the quality of service for patients (Sagong & Lee, 2016). However, one study of 310 nurses in Turkey found that study participants were less concerned about a professional value called altruism (Erkus & Dinc, 2018). This study is consistent with this study finding which found an expectation for novice nurses to have caring value in every action they do. Dehghani (2020) highlighted that healthcare services could be improved by developing professional ethics during education. However, it is believed that one’s background and individual factors also play an essential role in professional ethics development among students (Dehghani, 2020).

Another highlighted finding from this study was social skills. For nurses, social skills are needed as they are closely related to “humans” who are social beings. Competent nurses are not only determined by their academic achievement but also their response to other people’s needs. Good social skills enable new graduate nurses to give a correct response when advice is provided to them. On the other hand, weak social skills result in any conflicts among the members of a team, for example, communication skills. Failing to apply communication results is a problem of interaction (Souza et al., 2016), which would make it difficult for a nursing job that relies heavily on the teamwork process. Interpersonal conflict at work will weaken teamwork (Kim et al., 2017), whereas the quality of patient care depends on solid collaboration. In carrying out his profession, a nurse needs to have social skills. Social skills are crucial for nurses as a teamwork profession. It is vital as, most of the time, nurses must work in a team (Abraham & Scaria, 2017). It is not enough for nurses to know only their responsibility, but nurses need to have a team-oriented mindset (Kaiser & Westers, 2018). As a team, they must be aware of the needs of others. Aside from that, Afsar et al. (2019) highlighted that willingness to help colleagues arises from a nurse’s sense of calling. Adaptability is also determined by career motivation (Fang et al., 2018). Minster (2020) highlighted that flexibility and adaptability are essential social skills for a nursing job, as it enables nurses to tolerate stress in their workplaces. In a study conducted by Mizuno et al. (2017), it is known that male nurses communicate more and are able to collaborate with colleagues compared to their counterparts. This study also underlines that when someone has good communication skills, they tend to have the ability to express their feelings well. Then, it will lead to physical and mental health problems. It is also suggested to enhance the knowledge and awareness of verbal communication among nurses to improve the patient-nurse relationship.

Regarding commitment & motivation, Fang et al. (2018) found that the careers of undergraduate nurses are affected by career motivation. In addition, the work motivation level is affected by age, years of experience, autonomy, education, and administrative positions (Baljoon et al., 2018). In addition, organizational factors also contribute to nurses’ work motivation. Sasaki et al. (2019) found that work commitment is considered weak during 1-2 years of work experience. Nurses’ work motivations are also affected by salary and career development; a conducive
working relationship; and supervision (Baljoon et al., 2018). Above all the factors mentioned before, it is highlighted that compassionate love impacts professional commitment (Mersin et al., 2020). Thus, vocation is the most determinant factor for working commitment.

Regarding organizational commitment, Labrague et al. (2018) found that organizational commitment is affected by a nurses’ age, gender, education, rank, and work experience. Organizational commitment is vital to every nurse because it helps them better care for patients (Naghneh et al., 2017; Ha & Nuntaboot, 2020). On the other hand, the clarity of calling as a nurse makes a nurse have a stronger career and organizational commitment and tend to be willing to help colleagues and strive for the good of the organization (Afzar et al., 2019).

The efforts to develop soft skills for nursing students, as in the curriculum, are considered necessary (Ng, 2020). This is confirmed by a study conducted by Bratajaya and Ernawati (2020a), who found that new nurses did not have adequate soft skills at work. It is believed that soft skills must be internalized in their education. Improving the student’s social skills, for example, would improve their mental health (Moeller & Seehus, 2019). Ghasemi et al. (2018) recommended workshops that can improve the nursing students to be mentally spiritually ready to carry out their job responsibility. It would help prepare individual nurses to be more prepared for any challenges in their workplace. Ideally, soft-skills education starts early. Kim and Yi (2015) suggested that self-awareness should be developed during a student’s life. If it is given only during higher education, the results will not be optimal. Challenges should be identified from the beginning of education. The education process is done for a moment in the classroom and integrated into the entire curriculum. On the other hand, Raeissi et al. (2021) suggested that the hospital is responsible for improving nurses’ emotional intelligence, such as self-awareness, through organized training. Moreover, it is found that experienced nurses and mentors can be potential role models for new nursing staff (Bratajaya & Ernawati, 2020b).

Other soft skills expected from experienced nurses were analytical and Self-regulation of the learning process. Experienced nurses in this study think that novice nurses must already have critical thinking skills. Lee et al. (2020) stated that critical thinking skills are not influenced by age or experience but by education. So, it is suggested that during education time, students are trained to have good critical thinking. In achieving this goal, one of the ways that can be applied in the learning process is case-based learning (Sapeni & Said, 2020). To enable students to make health care decisions while doing nursing jobs in the future, they need to be trained for critical thinking (López et al., 2020). Other than that, Ibrahim et al. (2016) highlighted that self-regulation is essential for nurses to be able to provide good quality care. Even though analytical and self-regulation were less mentioned in this study, these two skills are still paramount owned by novice nurses.

This study proved that the quality of nursing services could not be separated from nurses’ soft-skill attributes. Their soft skills need to attach to their personality. However, this study has some limitations. First, due to time and financial constraints, the researchers narrowed down the scope of study aim. Second, we only aimed to capture the perception of nurses working in a private hospital in Jakarta. With only ten participants, the data may not describe the perception of Indonesian nurses in general. Third, the findings might not capture the soft skills needed for nurses working in public hospitals in Jakarta or other regions of Indonesia. The need for soft skills might be different from public hospitals, which the public hospitals in Indonesia usually have more patients from lower-middle economic status and education levels. With the more complicated situation, it would be more soft-skills attributes needed. Regardless of the study limitations, this study is believed to give a significant contribution to the improvement of the quality of nursing care nationally and internationally. This study can be used as evidence to recommend integrating soft skills into the nursing education curriculum.

Conclusion

Soft skills are crucial for nurses’ professional practice, especially in the hospital setting. This study highlighted nine essential soft skills for novice nurses to successfully go through the transition from education to practice in the workplace as well as for their career ladder. As a profession that upholds altruism value, the members of the nursing profession must have strong, caring attributes. Moreover, this profession is also identical to teamwork, and it requires strong social skills as the implication. To improve the quality of nursing care, educational institutions need to incorporate soft-skills attributes into the curriculum and integrate them into the learning process throughout daily guidance or workshops and seminars. It is hoped they will be internalized and embedded in their professional life. In addition, studies about soft skills in nursing education need to be refined, especially for soft skills that have not been discussed much yet. Therefore, this study should be continued, and it is suggested for future studies to include more participants from patients and families, nursing students, and other health care professions.

Declaration of Conflicting Interest

The authors declared no conflict of interest regarding the publication of this article.

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Authors’ Contributions
EE: study conception, data collection, data analysis, interpretation, drafting of the article, critical revision of the article. CNAB: study conception, data collection, data analysis, interpretation, and drafted the paper. All authors agreed with the final version of the article.

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Data Availability Statement
The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Using a mobile application ("PrimaKu") to promote childhood immunization in Indonesia: A cross-sectional study

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Abstract
Background: Universal immunization coverage among children in Indonesia is low compared to the global target. Many children in Indonesia are not fully immunized as recommended by the government, which results in a high mortality rate. The government has developed a mobile application (PrimaKu) to provide information on vaccinations and reminder features. However, the successful use of the immunization features of the app has not been widely studied.

Objective: This study aimed to evaluate the use of PrimaKu on maternal attitudes toward immunization and complete basic immunizations status among Indonesian children aged 12 to 24 months.

Methods: A cross-sectional research was conducted at a public health center in West Java Province, Indonesia, from August to December 2020. Convenience sampling was used to select the respondents. Data were collected using validated questionnaires and analyzed using binomial logistic regression.

Results: A total of 119 mothers were included. About 44.5% of children had a complete basic immunization status. Mothers who had a supportive attitude toward immunization were 3.58 times (95% CI 1.49-8.57, p 0.003) more likely to complete the basic immunization, and those who used the mobile app were 3.23 times (95% CI 1.18-8.87, p 0.034) more likely to complete the immunization.

Conclusion: Using the PrimaKu mobile application could increase maternal attitudes toward immunization and complete basic immunization status. Therefore, public health nurses should provide comprehensive education and improve mothers’ literacy to use the application.

Keywords
attitudes; immunization; child; mobile application; nursing; Indonesia

Immunization is one of the most economic preventive measures to date, preventing 2 and 3 million children each year (UNICEF, 2019), particularly in developing countries, where availability and access to vaccines and antenatal services are somewhat limited (World Health Organization [WHO], 2020). Unfortunately, many young children failed to get the immunizations they were supposed to. As a result, more children are at risk of measles, polio, and other vaccine-preventable diseases (UNICEF, 2019). The Diphtheria, Tetanus, and Pertussis vaccine (also known as DTaP) is frequently used as a general evaluation of immunization due to its ability to indicate how easily routine immunization services can be accessed. It was estimated that 85 percent of people worldwide had received their third dose of diphtheria, tetanus, and pertussis vaccine (DTP3) in 2019. This is an increase from 72 percent in 2000 and only 20 percent in 1980 (WHO, 2019).

In Indonesia, children are required to receive immunizations through a program known as universal immunization coverage (Ministry of Health of Indonesia, 2018). About 57.9% of children are completely immunized as recommended by the government; this is much lower...
than the country target of 93% (Ministry of Health of Indonesia, 2018). The detail of universal immunization coverage for each immunization was 79.1% for HB-0, 87.6% for BCG, 75.6% for DPT-HB 3, 77% for Polio 4, and 82.1% for Measles. Therefore, the average universal immunization coverage was deficient (57.9%), far from the national target above 93% of universal immunization coverage (Ministry of Health of Indonesia, 2018). In addition, many provinces still have universal coverage under this percentage, including the Province of West Java, with low universal immunization coverage (89.27%) (Ministry of Health of Indonesia, 2018).

Although access to vaccination is often a problem, acceptance is also a factor in vaccination uptake, influenced by social-economic factors and individuals' emotions, experiences, attitudes, and beliefs about vaccination (Wilson, Bakkabulindi, et al., 2016; Larson, 2018). There are three distinct poles of anti- and pro-vaccination: some people are pro-vaccination, while others only accept some, and those who do not at all (Larson et al., 2014). Individuals who express doubts and concerns about vaccination have been shown to have lower vaccination uptake (Damnjanovic et al., 2018), which may have a significant impact on vaccination coverage and increase the risk of outbreaks (Smith et al., 2017). Unvaccinated people are at a higher risk of illness and negative health effects, but under-vaccinated people are at a higher risk of more serious outbreaks (Omer et al., 2008; Salathé & Bonhoeffer, 2008; Phadke et al., 2016).

Several mobile phone applications have been developed in low- and middle-income countries (LMICs) to address health problems, such as immunization, tuberculosis, and Malaria. In LMICs, mobile phones are used by 97 out of 1000 people (USAID, 2003), reaching out to rural communities that initially had very little engagement with public organizations and private companies (Stansfield et al., 2006). mHealth, including vaccine details portals and smartphone applications (hereinafter referred to as apps), has been researched by several private and public organizations to aid vaccination uptake. A systematic review published in 2015 on the design of vaccination reminder apps examined two studies on mobile reminder apps (Abahussin & Albarrak, 2016). These apps provide various features to assist health care professionals, caregivers, and, in some cases, children in accessing vaccine-related information, prescribed immunization schedules, storing vaccination records, and receiving appointment reminders. In many LMICs, the use of text messages and registrations to locate those who failed to receive immunization is being used to combat increasing levels of vaccine non-delivery (Bangure et al., 2015; Domek et al., 2016; Haji et al., 2016; Kazi et al., 2018). It has been proven that these interventions help complete vaccinations (Schlumberger et al., 2015; Haji et al., 2016; Uddin et al., 2016).

PrimaKu application is a health application intended for mothers to make it easier to monitor children's growth and development. One of its features is the immunization schedule feature, which provides information related to immunization, compiles an immunization schedule, and provides a reminder system to carry out immunization according to an arranged plan (PrimaKu, 2018). Thus, the application can play a role in increasing coverage and fostering positive attitudes towards universal immunization coverage programs. However, the successful use of the immunization schedule feature of the application has not been studied in Indonesia.

Public health nurses have a critical role in ensuring all children have up-to-date immunizations as recommended by the World Health Organization (WHO) and ensuring that the children’s growth and development are monitored. Therefore, assessing the utilization of this mobile application could provide useful information as a starting point for public health nurses to encourage all Indonesian women to utilize it. This study aimed to evaluate the use of the PrimaKu mobile application on maternal attitudes toward immunization and completed basic immunization status among Indonesian children aged 12 to 24 months.

Methods

Study Design and Setting

Cross-sectional research was conducted at a public health center in West Java Province, Indonesia, from August to December 2020. Public health centers are government-mandated community health clinics located across Indonesia. They are supervised by the Indonesian Ministry of Health and are responsible for providing healthcare at the sub-district level. West Java Province is located on Java Island that is close to the Capital city of Indonesia, Jakarta. West Java consists of 17 regencies and nine cities. This study was specially conducted in urban areas considering that smartphone use is more common among mothers who live in urban areas.

Participants

The inclusion criteria of the participants in this study were mothers who had a smartphone and children aged 12 to 24 months. The sampling method employed was convenience sampling. The sample size was calculated using G-Power Software version 3.1.6 (Faul et al., 2007) using the Z test assumed to be $\alpha = 0.05$, odds ratio $= 2$ (medium effect size), power level $= 0.80$. Therefore, the total minimum sample that should be recruited was 88. However, a total of 119 mothers agreed to join in this study.

PrimaKu application

The PrimaKu mobile application (https://www.primaku.com/) was developed by the government through the Indonesian Pediatrician Association (IDAI). It is a health application designed specifically for parents. The purpose of this application is to enable all parents and physicians to take an active role in monitoring children’s growth and development on a regular basis to detect growth and developmental disorders early. The features of PrimaKu are more engaging and user-friendly for parents. The following

are the most important features that are currently available: 1) growth (growth charts, nutrition recommendations); 2) development (developmental questionnaire); 3) vaccination (IDAI and PPI schedule); 4) at least 200 health-related articles; 5) integration of child health data from the PrimaKu app into the “PrimaPro” app (Figure 1). The PrimaKu application is an open access app and can be downloaded freely for mobile phones and tablets via Google Play (Android) or the App Store (IOS) by searching for PrimaKu in the search field.

![Figure 1 PrimaKu application (https://www.primaku.com)](https://www.primaku.com)

**Measures**

The demographics questionnaire contained such questions as age, marital status, level of education, number of children, work status, and health-seeking facilities. The use of the PrimaKu mobile application was defined if they used the app for at least 12 months. Immunization status was categorized as complete or incomplete. Complete immunization was defined based on the WHO definition, “a child in the 12–23 months of the age group who has received a single dose of BCG vaccine, three doses of DPT, hepatitis B and Haemophilus type b, three doses of polio vaccine (excluding the dose given shortly after birth) and the first dose of measles” (WHO et al., 2009).

Attitudes toward immunization were adapted from Wilson, Atkinson, et al. (2016). Attitude is a parent’s perspective that influences behavior in giving immunization to their children based on their stance and belief in immunization. The better the mother’s attitude in supporting immunization, the greater the chance for the mother to comply with the process of giving child immunization. The questionnaire consisted of six items with a Likert scale to measure attitude in giving immunization to children based on their stance and belief in immunization. Permission to use the instrument was obtained prior to translation. This approach aims to produce final English translations of the Indonesian tool that are semantically identical across all target cultural backgrounds. Expert judgment was carried out by four experts (three Ph.D. in Nursing Community and one pediatric consultant) in the field of immunization in children in Universitas Indonesia. The content validity index ranged from 0.76 to 0.81. The reliability tested was carried out by distributing and analyzing the questionnaire to the 50 mothers not included in the study sample. In the current study, Cronbach’s Alpha was 0.76.

**Data Collection**

A closed-ended, web-based survey was applied to collect the information on demographics, the use of the PrimaKu mobile application, complete coverage immunization status, and maternal attitude toward immunization. During the entire procedure, Google Form was developed by the authors. If the survey was already completed, the program automatically resolved the probability of double participants by denying two or more access permissions from the same e-mail address to the study. The survey took about five to ten minutes to complete on the internet.

**Data Analysis**

The standard deviation of the mean (SD) was added for continuous data, while frequency and percentage were used for categorical variables. The non-significant test using Kolmogorov–Smirnov test showed that the data were distributed normally for maternal attitude. Chi-square and
student t-test were used to compare demographic characteristics, immunization status, and maternal attitude toward immunization between those who completed and not completed immunization recommendations. Binomial logistic regression to identify the relationship between the use of PrimaKu and attitude toward immunization with complete immunization status. It was considered significant if the p-value was less than 0.05. SPSS 20 version was used to record and evaluate the data.

Ethical Consideration
Ethical approval from the ethical committees of the Faculty of Nursing, University of Indonesia, was obtained prior to data collection (SK-246/UN2.F12. D1.2.1/ETIK 2020). In addition, a detailed consent form was given to the studied participants before collecting data. The information collected was confidential and saved on a separate drive that only the management team could access.

Results
Participants were 119 mothers who have children aged 12 to 24 months from the public health center in West Java Province, Indonesia. About 44.5% of children had a complete basic immunization as recommended by the government, and 55.5% did not have a full basic immunization status. Those who had a complete basic immunization were more likely to have children more than 3. While, there were no significant differences between those who had complete or incomplete basic immunization status in terms of maternal age, marital status, education level, and working status (Table 1).

Discussion
This study found that the achievement of basic immunization status for under-five-year-old children in West Java Province was 44.5% and 55.5% not covered by basic immunization status. This achievement has a slightly lower difference from the 2018 immunization data, namely 57.9%. This can be due to the tendency of mothers who do not have an awareness of the importance of immunization and an understanding of information on the location and schedule of immunization their children need (Hailu et al., 2019). In addition, the high percentage of immunization

### Table 1 Demographic characteristics comparison between those who used PrimaKu mobile app and those who did not use (n = 119)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Immunization status</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Complete, n = 53 (%)</td>
<td>Incomplete, n = 66 (%)</td>
</tr>
<tr>
<td>Maternal age, mean±SD</td>
<td>30.97±4.48</td>
<td>32.57±4.96</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>48 (90.6)</td>
<td>60 (90.9)</td>
</tr>
<tr>
<td>Divorce/Widow</td>
<td>5 (9.4)</td>
<td>6 (9.1)</td>
</tr>
<tr>
<td>Education level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below senior high school</td>
<td>25 (47.2)</td>
<td>31 (46.9)</td>
</tr>
<tr>
<td>Above senior high school</td>
<td>28 (52.8)</td>
<td>35 (53.1)</td>
</tr>
<tr>
<td>Number of children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>40 (75.5)</td>
<td>59 (89.4)</td>
</tr>
<tr>
<td>More than 3</td>
<td>13 (24.5)</td>
<td>7 (10.6)</td>
</tr>
<tr>
<td>Working status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>46 (86.8)</td>
<td>56 (84.8)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>7 (14.2)</td>
<td>10 (16.2)</td>
</tr>
</tbody>
</table>

Table 2 shows the relationship between the use of PrimaKu and maternal attitude on complete immunization status. Findings showed a significant relationship between maternal attitude and the use of the app on basic immunization status. Mothers who had a supportive attitude toward immunization were 3.58 times (95% CI 1.49-8.57, p 0.003) more likely to complete basic immunization, and those who used the mobile app were 3.23 times (95% CI 1.18-8.87, p 0.034) more likely to complete basic immunization.

### Table 2 The relationship between the use of PrimaKu and maternal attitude with complete immunization status (n = 119)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Immunization status</th>
<th>OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Complete, n = 53 (%)</td>
<td>Incomplete, n = 66 (%)</td>
<td></td>
</tr>
<tr>
<td>Maternal attitude</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting</td>
<td>48 (90.6)</td>
<td>60 (90.9)</td>
<td>3.58 (1.49-8.57)</td>
</tr>
<tr>
<td>Not supporting</td>
<td>5 (9.4)</td>
<td>6 (9.1)</td>
<td>1</td>
</tr>
<tr>
<td>Using PrimaKu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>25 (47.2)</td>
<td>31 (46.9)</td>
<td>3.23 (1.18-8.87)</td>
</tr>
<tr>
<td>No</td>
<td>28 (52.8)</td>
<td>35 (53.1)</td>
<td>1</td>
</tr>
</tbody>
</table>
coverage could be due to participants were included in the Family Hope Program (FHP) monitored by the Indonesian Ministry of Social Affairs. They complied to do vaccination because they receive financial support, especially for the continuation of family health. However, the findings of this study could not represent West Java Province due to the small sample size.

This study indicated that mother attitudes in supporting immunization programs in West Java Province were relatively high and significantly associated with completed immunization status. This is in line with the results of other studies, which explain that a person’s views and attitudes regarding immunization in their children will provide an overview of the tendency of parents to provide complete and on-schedule immunization (Febriastuti et al., 2014; Atkinson et al., 2019). A supportive attitude towards immunization can grow from the exposure of the parents to information related to immunization. In this study, it is identified that mothers who are informed about the immunization are the mothers who have taken advantage of PrimaKu immunization features. The function of the immunization schedule feature of the app is to provide a reminder of the immunization schedule, provide information on current immunization that has not or have already been immunized, and access information on immunization details that are adjusted to the age of each child (Burgess et al., 2017).

Providing complete immunization information in PrimaKu encourages mothers to immunize their children. The results of other studies found that 80% of respondents state that information about immunization from mobile applications was the main source of information (Burgess et al., 2017). This is due to the fact that the correctness of the information can be justified, and this information rectifies various myths about immunization that exist in the community. The existence of doubts about immunization causes parents to seek reliable information to help differentiate fact and fiction (Seeber et al., 2017). A study has shown that information that emphasizes the risk of disease due to not being immunized can be an effective promotional method to increase the intention and motivation to immunize (Nyhan et al., 2014).

This study found a significant relationship between mothers having under-5-year-old children who use and do not use the PrimaKu immunization feature. This is in line with several studies which reveal that mobile applications that carry immunization themes can increase immunization coverage (Bangure et al., 2015; Domek et al., 2016; Haji et al., 2016; Kazi et al., 2018). The use of applications on mobile devices has been proven to raise concerns about immunization and support the success of immunization programs (Wilson, Bakkubulindi, et al., 2016). Immunization-related mobile applications contain accurate information about immunization and children’s health to answer misinformation rife on the internet to social media. The successful use of mobile applications in increasing immunization coverage is supported by increasingly sophisticated mobile devices. Today’s mobile devices, with the help of the internet and Web 2.0 platforms such as mobile applications, are slowly changing the ability of the general public to make crucial decisions regarding individual health (Bartfay & Bartfay, 2016). The existence of various components of the intervention in mobile applications that aim to provide information related to immunization to parents can effectively increase knowledge and increase the intention to provide immunization to children (Fadda et al., 2017). Technological interventions have shown promising results regarding the timeliness of vaccination because nearly everyone’s mobile devices have them and are easy to use.

This study also found no significant relationship between the age of the mother and complete immunization status, which is consistent with previous studies (Chiabi et al., 2017; Mbengue et al., 2017). A non-significant correlation could be affected by the mother’s age in the early adulthood group (≤35 years old) and the majority of whom have lived separately from their parents. At that time, there is often psychological unpreparedness in making decisions in family life, including the decision to give immunization or not to their child (Hasibuan & Sinambela, 2020). However, several studies stated that the mother’s age was positively and significantly influenced immunization coverage (Mohamud et al., 2014; Harmasdiyani, 2015; Legesse & Dechasa, 2015). The early adulthood group already had mature thinking, experience, and a better understanding of the dangers of disease threats (Harmasdiyani, 2015). These experiences could influence mothers to take actions that focus more on children’s welfare and more sensitive to healthy lifestyles, one of which was to support basic immunization programs for their children.

The limitation of this study was the difficulty in finding respondents using PrimaKu. In addition, this study also did not look at specific immunization features in the PrimaKu application nor see the advantages and disadvantages of the application from the user’s point of view. However, this can be used as an area for further study to improve users’ comfort and the success of childhood immunization in Indonesia.

**Conclusion**

The findings of this study highlighted the low coverage of basic immunization among children under five years in West Java Province. Furthermore, there was a significant relationship between mothers’ attitudes toward immunization and the use of the PrimaKu mobile application with complete basic immunization status. Therefore, the need for advocacy from the government is recommended to implement a policy on the use of the application to support increased complete basic immunization coverage. Public health nurses should also provide comprehensive training to improve the literacy of mothers to use the application so that more parents can experience its benefits. For further study, it is suggested to replicate the study by using more and varied respondents.
Declaration of Conflicting Interest
All authors declare no conflict of interest in this study.

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Authors’ Contributions
Data collection: NN. Data analysis and interpretation: NN, SC. Drafted the article: NN, RA, AA. Critical revision of the article: NN, SC, RA, AA. All authors agreed with the final version of the article.

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Data Availability Statement
The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

References


Recovery from ‘schizophrenia’: Perspectives of mental health nurses in the Eastern island of Indonesia

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Abstract
Background: Recovery is a way of life to make people’s lives more meaningful by working and interacting socially in the community. The recovery has become a new vision of mental health services, including in persons with schizophrenia. However, this concept is relatively new and still limited to nurses in developing countries, such as Indonesia. Several studies among nurses related to this topic have been conducted in the Western part of Indonesia. Yet, no studies have been implemented in the Eastern part of Indonesia. Therefore, exploring nurses’ perspectives in the Eastern island of Indonesia is necessary to provide a complete understanding of recovery in patients with schizophrenia.

Objective: To explore the perspectives of mental health nurses on recovery from schizophrenia.

Methods: This was a qualitative study using a phenomenological design. The study was conducted from April to May 2020 at community health centers in Maluku, Indonesia. Eight nurses recruited using purposive sampling participated in in-depth interviews. The interviews were audio-recorded, transcribed verbatim, validated, and analyzed based on Colaizzi’s method of data analysis.

Results: Five themes were generated, including (i) treat a patient like a brother, (ii) recovery as an unfamiliar term with various meanings, (iii) medication as the primary action but also the main problem, (iv) being recovered if referred to a mental hospital, and (v) ineffective mental health programs.

Conclusion: The findings of this study can be used as an input and evaluation for nurse managers to make an effort to uniform the perception among nurses in Indonesia regarding the recovery process in schizophrenia. It is also suggested that community health centers leaders and mental health policymakers prioritize and optimize recovery-oriented mental health programs and services in the Eastern island of Indonesia. Additionally, the findings offer new insight about ‘we are brothers’ or called ‘hidop orang basudara’, which is expected to be one motto for nursing care in Indonesia and beyond.

Keywords: mental health; schizophrenia; Indonesia; community health centers; qualitative research; nursing

Globally, the concept of recovery has become a national mental health policy in most developed countries, such as England, Wales, and the European Union, and has brought significant changes to the mental health system (Jacob, 2015). The concept of recovery was proposed by Anthony (1993) as a new vision in the practice of mental health services. This vision requires healthcare workers to empower patients, with all their limitations, to live optimally and productively. However, this is relatively new and is still limited to healthcare workers, especially nurses in a developing country like Indonesia.

Nurses as healthcare workers and at the forefront of service delivery have essential duties and responsibilities. The nurse’s perspective on recovery is critical for improving mental health practice and quality of life for patients with schizophrenia. The important role of nurses in the recovery

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process is to accompany and teach patients to recognize the disease they are suffering from, build personal identity, regain the meaning of life, and maintain it so that they can function socially in society (Drapaliski et al., 2012). Thus, nurses are not responsible for the fulfillment of daily life. But how to be a resource provider, supporter, and encourager of patients to manage their condition by providing trust, fostering a sense of responsibility, and motivating them to believe that they can recover (Suryani, 2013).

The contribution of nurses to mental health services can bring about a change in mindset, which based on evidence, recovery is not a treatment but a way of life to make patients’ lives more meaningful by working and interacting socially in the community (Shepherd et al., 2012; Suryani, 2013). The proper perspective on recovery must be owned by the nurses in charge of the mental health program at community health centers in Indonesia. However, research conducted to build the understanding of nurses in charge of mental health programs regarding recovery from schizophrenia in Indonesia is still limited. For example, Agustina et al. (2019) also examined the experience of nurses in charge of psychiatric programs at community health centers in carrying out recovery at Cimahi, Indonesia. In addition, Nurjannah et al. (2019) examined the views of health workers on schizophrenia recovery in the community health center, Yogyakarta, Indonesia. Purbaningih (2019) explored the perspectives of patients, families, professionals, and policymakers regarding recovery in schizophrenia in Cirebon City, and Tania et al. (2019) investigated the experience of health cadres in supporting the recovery process of people with mental disorders in the Cimahi City, Indonesia. However, these studies were conducted only in the Western part of Indonesia; there has been no research on recovery in patients with schizophrenia clients in Eastern Indonesia. This is a gap that needs to be filled up. Therefore, this study aimed to explore the perspectives of mental health nurses regarding schizophrenia recovery in the Eastern island of Indonesia.

Overview of Health Care System in Indonesia

Indonesia consists of three levels of the health care system: primary level, secondary, and tertiary level. Primary health care is mainly given in community health care centers (called Puskesmas) and village health posts (called Pustu) where most facilities are community-based and provide primary health care and prevention programs (Gunawan et al., 2020). Public and private hospitals provide the secondary and tertiary levels of health care. All of these levels are designed for universal health coverage in Indonesia.

Indonesia, officially the Republic of Indonesia, consists of 17,508 islands geographically located in Southeast Asia, between the Indian and Pacific oceans (Gunawan et al., 2020). Indonesia is also called the republic of multiculturalism, influenced by Mainland China, the Middle East, the Indian subcontinent, Europe, and Austronesia (Stone et al., 2016; Central Intelligence Agency, 2018; Gunawan et al., 2020). Indonesia has multiple religions, 300 ethnic groups, and 700 local languages, including the Maluku language (BBC News, 2018; Central Intelligence Agency, 2018). All Indonesians are united by Pancasila (as the national philosophy based on belief in God, humanism, unity, democracy, and justice) and one language (Bahasa Indonesia) (Gunawan et al., 2020).

Health development in the Indonesian region is divided into Western and Eastern parts of Indonesia (Gotama et al., 2019). The Western part of Indonesia consists of Java, Sumatra, and Kalimantan islands, while the Eastern part of Indonesia consists of Sulawesi, NTT, Papua, and Maluku (Gotama et al., 2019). The development gap between the two regions is relatively straightforward, which can be seen from the transportation facilities, road infrastructure, hospitals, health service facilities and infrastructure, the number of professional health workers, and the communication system (Gotama et al., 2019). The Eastern part of Indonesia has a small population compared to the Western part of Indonesia, but a significant obstacle is an unevenly distributed population, some of whom live in the mountains or islands (Gotama et al., 2019). This condition affects various public services, one of which is health services. Health service problems in Eastern Indonesia, such as (1) primary health care in the border, remote, and archipelago regions are still low, (2) transportation facilities are very limited with high costs via land, rivers, sea, and air, (3) low access to health services, (4) the number of nurses is sufficient when viewed from the needs, but the services are only waiting for the arrival of patients, (5) the acquisition of drugs is generally not in accordance with demand, and (6) health equipment, health support facilities at the Puskesmas are insufficient (Suharmiati & Astuti, 2013). Therefore, with this condition, it is necessary to explore the nurses’ perspectives in taking care of patients, particularly in understanding recovery in patients with schizophrenia in the Eastern island of Indonesia.

Overview of Mental Health Programs at Puskesmas in Indonesia

The total number of Puskesmas in Indonesia is 10,063, higher than the total number of hospitals, 2,844 (Ministry of Health of Indonesia, 2019a). Mental health services at Puskesmas are contained in the Regulation of Law No.18 of 2014 concerning mental health (Ministry of Law and Human Rights, 2014), Permenkes No.75/2014 on Puskesmas, and Regulation of Law No.2/2018 on Minimum Service Standards (Sardjoko et al., 2018). The Government of Indonesia, through the Ministry of Health, seeks to encourage services for those who experience mental disorders, such as controlling pasung problems (seclusion, restraint, and isolation of people with mental health disorders), equitable distribution of mental health resources, online services through mental health applications and strengthening promotive, preventive, curative, and rehabilitative efforts at the Puskesmas level (Ministry of Health of Indonesia, 2018). Although the
programs are not yet optimal; however, Puskesmas has become an essential key to equitable mental health services. It is also recommended by World Health Organization (2013) in the Mental Health Action Plan 2013-2020 program to move mental health services from institutions/hospitals to the community.

Methods

Study Design
This study employed a phenomenological approach as outlined by Colaizzi (1978) to explore nurses’ perspectives on recovery in schizophrenia. Using this design was in congruence with the purpose of this study, which enables researchers to put aside their perceptions of a phenomenon and give meaning to a participant’s experiences.

Setting and Participants
This study was conducted from April to May 2020 in eight Puskesmas at Buru District, Maluku, Indonesia. Eight nurses were involved in this study selected using purposive sampling. The inclusion criteria of the participants were a nurse who has experience in taking care of patients with schizophrenia (at least for six months), a registered nurse with minimum Diploma III, and those who were able to communicate and agreed to join the study.

Data Collection
Data were collected using in-depth interviews. Each interview was conducted face-to-face at a meeting room in each Puskesmas ranged between 45 and 60 minutes per session and audiotaped to ensure that all spoken words were captured. The participants were initially asked with an open-ended question, “what do you think about the recovery process of patients with schizophrenia?” and continued until the data reached saturation or no new data were identified. The interviews were conducted by the author (FAT) in a local language, the Maluku language.

Data Analysis
Data were analyzed by content analysis model using Colaizzi’s method of data analysis with the following steps: (1) each transcript was read and reread to obtain a general sense about the whole content, (2) extracting significant statements for each transcript that pertain in this study, (3) formulating meanings from these significant statements, (4) sorting the formulated meanings into themes, (5) integrating the findings into an exhausting description of the phenomenon in this study, (6) describing the fundamental structure of the phenomenon, and (7) validating the findings (Colaizzi, 1978). All data analysis was conducted in the Indonesian and Maluku languages and translated to English for publication only. The translation version of the results was ensured to have the same meaning as the original data and confirmed by English editors and nursing experts.

Rigor
The rigor of this study was ensured using a peer-checking method by an independent auditor or an expert/a professor in qualitative research who evaluated and systematically analyzed all data as well as compared and contrasted data quality, transparency, and interpretations. In addition, member-checking was also done to confirm the findings to avoid bias or imagination from the researchers.

Ethical Considerations
This study was ethically approved by the Faculty of Medicine, Padjadjaran University, Indonesia, with an approval number of 291/UN6.KEP/EC/2020. Prior to data collection, each participant signed written informed consent and was informed about the aim of the procedure of the study. Each participant could withdraw from the study without any penalties. The researchers guaranteed that all data were kept confidential.

Results

Characteristics of the Participants
The participants in this study consisted of four males and four females, with ages ranging from 24 to 46 years. Most of the participants have working experience as nurses in charge of mental health programs ranging from 8 months to 14 years. In addition, most of them hold a Diploma III nursing background. Diploma III refers to a three-year nursing program at the college/university level. In contrast, Bachelor/Ners degree refers to a five-year program that consists of 3.5 years of an academic program and 1.5 years of professional program (Gunawan, 2019).

<table>
<thead>
<tr>
<th>Participants</th>
<th>Age (Year)</th>
<th>Sex</th>
<th>Educational background</th>
<th>Work experience (Year)</th>
<th>Length of work as a nurse in charge of a mental health program (Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>44</td>
<td>L</td>
<td>DIII</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>P2</td>
<td>35</td>
<td>L</td>
<td>DIII</td>
<td>10</td>
<td>1.4</td>
</tr>
<tr>
<td>P3</td>
<td>40</td>
<td>P</td>
<td>DIII</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>P4</td>
<td>24</td>
<td>L</td>
<td>DIII</td>
<td>2.5</td>
<td>1</td>
</tr>
<tr>
<td>P5</td>
<td>35</td>
<td>P</td>
<td>DIII</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>P6</td>
<td>28</td>
<td>L</td>
<td>Bachelor+Ners</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>P7</td>
<td>46</td>
<td>P</td>
<td>DIII</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>P8</td>
<td>32</td>
<td>P</td>
<td>Bachelor+Ners</td>
<td>7</td>
<td>8 months</td>
</tr>
</tbody>
</table>

Table 1 Participants’ characteristics
Analytical Findings

Five themes developed in this study, including (1) treat a patient like a brother, (2) recovery as an unfamiliar term with various meanings, (3) medication as the primary action but also the main problem, (4) being recovered if referred to a mental hospital, and (5) ineffective mental health programs. These themes are illustrated below with exemplars from the participants’ stories using pseudonyms for the participants.

Theme 1: Treat a patient like a brother

This theme describes the expressions of the participants regarding their calling as nurses in the form of sincerity, serving with hearts, and treating a patient like a brother. For example, one participant states, “I treat the patient like my brother” (P4). Another participant expressed similarly, “Running this program should be from the heart. If we use our heart, we will treat patients with love like our own family” (P1); and, “The program has merged with me, I consider the patients as human beings who must be cared for and treated like other normal humans” (P1).

Other participants also explained further about their calling as nurses to care for patients sincerely. P8 said, “Being a nurse is my calling to care. So, whatever the task to serve people with mental disorders, I still have to do it sincerely” (P8). In addition to sincerity, sacrifices are also needed in serving patients. The participant expresses it, “We need to be sacrificing for the patient because there are several times (outside of office hours), there are families of the patients come and call me at home” (P8).

In addition, this finding also revealed support from family, neighbors, and the community in patient recovery. Participants told about the family’s concerns in caring, such as taking the patient to the Puskesmas, paying attention to the patient’s hygiene, and monitoring the medication. The participant said, “Hidop orang basudara [we are brothers]. If he gets sick, we also get sick…Moluccan people say that potong di kuku, rasa di daging [a wound at the nail is felt throughout the body]” (P1).

Hidop orang basudara [we are brothers] has been ingrained from generation to generation as one of the wealth and strengths of the Moluccans. This principle views all humans, including patients, as brothers and sisters. Whatever the circumstances, good or bad, a brother must give his best to support his brother. The slogan potong di kuku, rasa di daging [a wound at the nail is felt throughout the body] describes what nurses think about the patients’ experiences.

Similar to what was said by P1, another participant also said, “The family support is good; they can receive well” (P7). Furthermore, he said, “His family took him to the Puskesmas; saw and took care of his personal hygiene, such as bathing, and so on (P7)”. In the same context, another participant also told of family support, especially a wife, for the recovery of patients, “His wife... doesn’t see him as the one who gets sick. It’s really good” (P6).

Theme 2: Recovery as an unfamiliar term with various meanings

Most of the participants in this study had never heard of the term recovery, but all participants could interpret it based on their caring experience. Thus, the meaning of recovery varies greatly. The participants expressed this: “I’ve never heard of recovery” (P2). Other participants also said the same thing, “Never heard of recovery” (P3), “I’ve never heard of it before” (P5), “I haven’t” (P6). Another participant revealed that he had heard the term recovery in general. However, it is not specific to mental health. He said, “I’ve ever heard of recovery in general health, but for mental health, not yet” (P8).

Furthermore, participants interpreted recovery by saying, “Recovery means that the mind-body is back to normal like people without mental disorders” (P8). Meanwhile, other participants who had never heard of recovery also stated, “Recovered means a person who is healthy, who has recovered from mental, physical, and mental disorders” (P2). Another participant said, “Recovery is for patients, who initially could not interact with nurses, finally were able to interact” (P7).

However, another participant said something different revealed that it would not happen for a complete recovery like ordinary people. He stated, “Recovery means all things related to schizophrenic disorder are no longer there or finished. The meaning of completion means you will recover like a normal person; it's not possible” (P1). It is also more surprising from the statement of other participants who did not explain the meaning of recovery but revealed that recovery from schizophrenia was difficult. He said, “Recovery from mental disorders, such as schizophrenia, seem difficult” (P5).

Theme 3: Medication as the primary action but also the main problem

All participants said that medication is vital for the recovery of schizophrenia and the main action of mental health services. However, the available drugs are very limited or not available at the Puskesmas. One participant said, “I think the main action is just medicine” (P5). Another participant also said, “For people with mental disorders, the emphasis should be on medicine. Alternative approaches are difficult. I have tried, but it can’t work; it just gets worse” (P1).

Participants expressed the importance of medication for patients because the patient gets better and does not relapse by taking medication. This was said by one participant, “If they have taken medicine, they can work. Communication is also good” (P3). This is supported by another participant’s statement, “After taking medicine, the patient wants to take a shower himself without being asked” (P6).

The importance of drugs for patients is not supported by the supply of drugs at the Puskesmas. Some participants said, “Our obstacle from the Puskesmas is that the
available medicines for people with mental health disorders" (P7). The other participant also complained and despaired about the very limited drug, “Hopefully the Almighty will help them so that they can recover. But, unfortunately, we do not know what else to do; medicine is limited. So, patients’ recovery is also difficult” (P4).

Chlorpromazine (CPZ) is a drug that is still available at the Puskesmas. Participants expressed this, “Medicines are limited, the drugs are from Ambon (Capital city of Maluku). There are only CPZ here” (P3). Another participant continued by revealing, “The medicine provided at the Puskesmas is only CPZ. But if we need more than that, we have to refer to a specialist at RSKD Ambon (Ambon Hospital)” (P8). The limitations of drugs made some participants look for solutions by making referral letters for taking medications at a mental hospital in Ambon. One of the participants said, “We have to go the medicine in Ambon” (P4).

Additionally, even though the family is given a referral for free medication in Ambon, several obstacles are raised, such as financial constraints for traveling costs. For example, to reach the farthest health center, they have to travel ±5-6 hours by land, then by sea for ±8-9 hours later to a mental hospital. Even if there are families in Ambon who can pick them up, they have to pay for the care. One participant expressed, “To recover, it depends on economic factors. Because to take medicine in Ambon, it costs money because it is so far. Moreover, the patient’s family is also having difficulty” (P5).

**Theme 4: Being recovered if referred to a mental hospital**

Participants said that patients could recover if they were referred to a mental hospital. One of them said, “If they were referred, they could be recovered” (P3). Another participant expressed the same thing, “They can be cured but must be referred. For example, one of them is to get ta treatment at Nania (a mental hospital in Ambon). The point is that they must be referred because there are doctors and nurses; they have everything” (P2).

Other participants also support that referral will make the patient recover because of the supportive treatment and facilities compared to the Puskesmas. One participant stated, “If referred, the patient can get good treatment at the hospital. But if he stays here, it will be difficult for him to recover. However, if they are treated there (at RSKD Ambon hospital) for one month, they will be able to recover in two months” (P4).

**Theme 5: Ineffective mental health programs**

There was a lack of attention from the Puskesmas and the Health Office on mental health programs. The participant who has been in charge of mental health programs for 14 years revealed, “There is not enough attention to mental health programs. The leaders until the staff think that mental problems are not important” (P1). Other participants also expressed criticism, “I see that the budget for drugs is limited. The department also often rolls out, so this mental program cannot be developed” (P8).

One of the participants revealed that the activities carried out every year are assisting programs, tracking new cases, and socialization. However, one activity is always left out for the following year to replace other activities due to budget constraints. The participant said, “I do activities with limited funds. For example, for this year, I only do the mentoring and tracking. So, every year, one planned activity cannot be done” (P4). In addition, the very limited circumstances make the person in charge of the mental program rarely visit the patient because of the long distance. One participant said, “The distance between the patients and us is very far. So, we visit patients once a year or two. Sometimes, we do visits after four months” (P2).

**Discussion**

This study aimed to explore the perspectives of nurses regarding the recovery from schizophrenia. Five themes were generated, and each theme is discussed below.

*Treat a patient like a brother*

This theme indicates that nurses show sincerity and willingness in caring for patients with schizophrenia and sacrifice to serve patients with their hearts. This finding is consistent with Majomi et al. (2003) that nurses sacrifice to be professional despite many personal problems at home. However, nurses must do their best for patient recovery (Majomi et al., 2003). Moreover, this finding is also consistent with Buckland et al. (2013) revealed that nurses must be able to bring happiness to patients to improve their quality of life. Kaewprom et al. (2011) also found that nurses are key people in facilitating recovery to patients in the community. Another finding by Coffey and Hewitt (2008) revealed that in a situation where the patient is struggling to recover, the nurse supported the patient by being a good listener when the patient needed it. It is also in line with Suryani (2013) that nurses become facilitators for all actions, needs, feelings, abilities, and weaknesses of patients. However, although nurses are recognized as critical persons (Kaewprom et al., 2011), able to bring happiness (Buckland et al., 2013), good listeners (Coffey & Hewitt, 2008), people who make sacrifices (Majomi et al., 2003), and facilitators (Suryani, 2013). However, no studies have revealed that nurses are brothers to patients, and this theme is quite important as a new insight in this study.

In addition, the findings of this study also show support and concern from the family or community for the recovery of the patients. The results of this study are consistent with previous qualitative research by Karanci et al. (2017), Riley-McHugh et al. (2016), Shepherd et al. (2012), and Windell and Norman (2013), which revealed that support from family and community is essential for the recovery of patients with mental disorders. For example, the expression of one of the participants in the study of Shepherd et al. (2012) said, “the people here, we talk, we laugh, we joke,
and they’re always there for me. If I feel bad, they’re always there to help me go through it together. And I think I feel better about myself now than I did when I was a kid.” Likewise, Riley-McHugh et al. (2016) said that support from the family could be a coping mechanism for patient recovery. The same thing was also expressed by Karanci et al. (2017) that there are three kinds of family supports to patients in facilitating patient recovery, including instrumental support (basic needs, material support, information support, and daily tasks), emotional support, and socialization support. Besides, most of the quantitative research has also explored family and community support for patients. For example, Norman et al. (2012) showed that social support was positively correlated with treatment and reduced stigma. Similarly, McCorkle et al. (2008) showed that, with assistance, family support for clients increased from 13% to 23% and improved symptoms and patient well-being (McCorkle et al., 2008).

The support of nurses, families, and communities to other people, including patients, for the Moluccans, is called Hidop orang basudara [we are brothers]. This culture is very strong, an inseparable part, a bond of social life, and inherent in the people of Maluku. Therefore, nurses consider patients as siblings or brothers and sisters. This finding is in line with the ethnographic study by Acim et al. (2019) that Hidop orang basudara [we are brothers] as a way of life by emphasizing the values of protecting each other (baku kalesang), making peace with each other (baku bae), and caring for or loving each other (baku sayang). However, the support of nurses, families, and communities becomes a supportive environment in the patient recovery process. Adults also understand patients by not mocking, although children often laugh at the patient’s quirky behavior and make the patient angry.

Recovery as an unfamiliar term with various meanings

Most of the participants in this study had never heard of the recovery of people with mental disorders. However, even though the participants were still unfamiliar with recovery, it was defined as regaining health as before the disorder or returning to normal, not being dependent on drugs, having no symptoms, and being able to interact with other people. This finding is in line with Kaewprom et al. (2011) found two states of recovery in patients with schizophrenia, namely the controlled state and the return state. The controlled state is related to stabilizing the symptoms experienced, while the return means that the patient’s function returns to normal before experiencing the disorder.

The findings in this study are also in line with Suryani (2013) that nurses can damage the patient’s recovery process because their understanding and attitudes are not in line with recovery. This is supported by Shean (2009) that the pessimistic attitude of health workers should have been replaced with a recovery perspective. Perspectives to build patient expectations lead them to have a productive and meaningful life (Shean, 2009). One of the participants in the qualitative research of Barut et al. (2016) revealed the importance of a sense of belonging, hope, and responsibility. She said, my nurses, they let me know what to do, and if I don’t do it, I see it.

van Langen et al. (2016) also revealed that nurses must recognize and prevent patient relapse, empower them and their families, and be good friends for patients to openly share experiences related to their illness. Thus, the findings in this study provide essential information about the erroneous perspective on recovery of the nurses in charge of the mental program in Buru District, Maluku, Indonesia.

Medication as the primary action but also the main problem

This theme indicated that medication is the main action in the recovery of people with a mental health condition. This is because the drugs can only restore the patients as perceived by the participants. This study also found that the standard supply of medicines in the Puskesmas is Chlorpromazine (CPZ). This is consistent with Gaebel et al. (2020), which recommends that CPZ doses of 300-600 mg or below 600 mg are effective for long-term antipsychotic treatment. Adams et al. (2014) also found that CPZ reduced relapse and improved the mental health functioning of patients. However, this review also revealed that CPZ has side effects, such as drowsiness, tremors, weight gain, decreased blood pressure, and dizziness. Similarly, Samara et al. (2014) found that CPZ only had an advantage over four antipsychotics in treating patients with schizophrenia. Different things were expressed regarding the effectiveness of CPZ by Meng et al. (2018), who revealed that CPZ is effective for improving sleep quality in patients with schizophrenia, reducing positive, negative, and general symptoms of schizophrenia and anxiety.

Apart from being the main action, medication is also a significant obstacle for nurses caring for patients. There are limited drugs for medication at the Puskesmas, so the family had to take medication at the mental hospital. Unfortunately, this has also become another issue for the family, such as the cost of traveling, long distances by traveling 10-12 hours, and the wave season sometimes becomes a problem.
However, the main issue is about the participants’ perspectives who consider only the medication was the main recovery action for the patients. The participants in this study ignored other aspects of recovery, such as empowering patients and families, developing patient expectations for recovery (not only mental but also physical services), assessing the patient’s strengths and being responsible for what is done, and developing respect for society to the patients (National Academies of Sciences Engineering Medicine, 2016).

Being recovered if referred to a mental hospital
This theme indicated that referring the patients to the hospital will make them recovered because they get better treatment with adequate facilities, professional health workers, availability of medicines, and patient needs compared to limited facilities at the Puskesmas. This finding is in line with Shen and Snowden (2014) revealed that developing countries are difficult to build deinstitutionalization due to a shortage of mental health personnel, low physical and mental health services, and limited medicines for mental disorders in primary care. The deinstitutionalization policy is a global policy that has also been implemented in Indonesia (Idaiani, 2009). This policy is stated in Law Number 18 of 2014 article 34 that mental health services are carried out in an integrated manner in public health services, one of which is at the Puskesmas (Ministry of Law and Human Rights, 2014).

Another study by Samele et al. (2013) also revealed that the treatment of patients with mental health disorders in the community is more effective than the treatment in a hospital. This is because community-based services reduce the number of patient relapses. In addition, Slade (2010) also revealed that patients with schizophrenia could live in the community if health workers carry out close monitoring with obedient treatment from patients.

The nurses’ perspectives in our study are described by Suryani (2013) as a condition in the 1960s, where the orientation of mental health services was centered in a mental hospital although a policy for mental health services in Indonesia exists in the community/health center. So, these findings can be an input for evaluating mental health services in Maluku, Indonesia.

Ineffective mental health programs
The majority of participants in this study thought that mental health programs did not work well compared to other health programs. This is reflected in the limited budget for activities, the unrealized demand for drugs for patients, and frequent changes in the person in charge of the mental program. The findings of this study are in line with the 2015-2019 action plan of the Directorate of Prevention and Control of Mental Health Problems and Drugs and the Regulation of the Minister of Health Number 87 of 2019 concerning Guidelines for the Use of Deconcentration Funds of the Ministry of Health for the Fiscal Year 2020 (Ministry of Health of Indonesia, 2018, 2019b), which shows that mental health programs have not become a priority program with weak supervision of mental health services in the regions, and Puskesmas has not provided mental health services according to standard. In addition, there are limited psychotropic drugs at the Puskesmas, unequal mental health resources, and the budget for mental health included in six disease prevention and control programs with a total 2020 budget of 206 billion. Besides, another report by Ito et al. (2012) revealed that low-income countries, including Indonesia, only budgeted 1% for the mental health of the total health budget. This is supported by Idaiani (2009) that existing mental health policies in Indonesia are not supported by adequate funding systems.

In the findings of this study, participants tried to find solutions related to drugs accessibility and affordability by handing them over to the family. However, this activity only lasted a few months and has stopped. This is related to the limited financial condition of the patient’s family. Another option by the family to entrust the referral for taking medication also requires high cost for traveling with cars and ferry. In addition, there must be someone in Ambon, the capital city, who is willing to pick up medicine at a mental hospital to be sent back.

Implication for Nursing Practice and Healthcare Policy
Globally, this study provides a new insight that every human being, including nurses, should treat other humans (patients) as brothers. Therefore, hidop orang basudara [we are brothers] is expected to be one motto for nursing care in Indonesia and beyond. In addition, this study has filled the literature gap as the evidence was only developed in the Western part of Indonesia (Suryani, 2013, 2014, 2018; Agustina et al., 2019). On the other hand, the picture of mental health services in Maluku, the Eastern island, is still lagging in terms of recovery orientation, which focuses only on medication and referring patients to mental hospitals. So, these findings can be input for nurse managers and mental health policymakers in districts and provinces to optimize recovery-oriented mental health services in Indonesia and other developing countries.

Nationally, this finding represents a general picture in the Eastern island of Indonesia regarding mental health services that have not become a priority program for the government. However, Puskesmas is the key to the success of mental health services. The reality in the field is that the Puskesmas is only an agent to refer patients to mental hospitals. This finding is essential for the central and local governments to pay attention to mental health programs and budgeting to develop mental health services, including patient recovery in Puskesmas.

Limitations of the Study and Recommendations for Future Research
This study might not represent the whole context of Eastern islands in Indonesia. Therefore, future studies with all regions should be conducted. Besides, an explorative study from the perspectives of both survivors and caregivers is
needed. Culture-related research and model development, such as 3C (Cure, Care, Core (Continuing recovery)) in mental health recovery warrant investigation.

**Conclusion**

The findings of this study provide the context of nurses’ understanding of the recovery process of patients with schizophrenia in the Easter island of Indonesia. The results offered new knowledge on how nurses act to the patients with the motto “we are brothers” that could inspire others in caring practice. However, this study also identified the issues that should be solved by nurse managers and policymakers in making the same views of nurses regarding the recovery process, which is not only from medical treatment and referral to hospitals but also from nursing care and family or community support. The policymakers are also suggested to be more focused on the mental health program in the Puskesmas considering the inequality of development regarding accessibility and affordability of healthcare services, infrastructures, availability of drugs between the remote areas and the city.

**Declaration of Conflicting Interest**

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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**Authors’ Contributions**

FAT contributed to the conceptual, design, data collection, data analysis, data interpretation, and manuscript drafting. SS, TS, and SRM contributed to study formulation and intellectual content and analysis, data interpretation, and manuscript drafting. SS, TS, and FAT contributed to the conception of the study, data collection, and manuscript writing. All authors agreed with the final version of the paper. Each author in this study met the authorship criteria based on the International Committee of Medical Journal Editors.

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Data Availability Statement

All data generated or analyzed during this study are included in this published article (and its supplementary information files).

**References**


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The experience of older persons with mental health conditions who interact with healthcare robots and nurse intermediaries: The qualitative case studies

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Abstract
Background: Caring expressions between humans and nonhuman intelligent machines are futuristic prototypes with healthcare robots as major advocates.

Objective: To examine the experience of older persons with mental health conditions, particularly patients with schizophrenia and with dementia in the interaction with healthcare robots and intermediaries in a transactive relational engagement.

Methods: Two qualitative case studies were conducted using sophisticated audio-video technologies to record the conversation and activities that were carefully documented. Following the procedure for qualitative descriptive analysis, a framework based on the Transactive Relationship Theory of Nursing was employed to analyze and interpret the data.

Results: Three themes were revealed, including feelings for the other, inspiring meaningful responses, and demonstrating expressions of joy. The description of the experience of older persons involved in the conversation with humanoid robots was feeling for the other while inspiring meaningful responses in demonstrating expressions of joy.

Conclusion: This study provided initial evidence that the transactive engagements of robots with older persons with schizophrenia and dementia and nurse intermediaries in psychiatric and mental health settings can result in occasions of ‘joy’ for the patients. These findings suggest that transactive engagements with robots facilitate expressions of joy among older persons with schizophrenia and dementia. However, these findings are not intended to prescribe nursing care actions but to describe the experience of older persons who are in transactive engagements with intelligent machines, indicating the importance and value of healthcare robots in nursing older persons with schizophrenia and with dementia.

Keywords
dementia; mental health; robotics; schizophrenia; technology; nursing; Japan

The rate of aging in Japan is rapidly reaching 27.7%, making Japan a country with the highest aging rate in the world (Cabinet Office, 2018). This situation, together with a declining birth rate, is enhancing shortages of workers,
including in healthcare services. In order to respond to this shortage, the Japanese government has funded robotics programs, advancing the development of healthcare robots in healthcare settings, particularly for rehabilitative activities (Tanioka, Smith, et al., 2019). In psychiatric and mental health settings, schizophrenia and dementia are common mental health conditions in Japan. Social robots, such as PARO, have been used as companions to provide emotional and social support for older persons with dementia (Hung et al., 2021). It is noteworthy to consider that as persons age, interacting with healthcare robots might be an interesting life experience, especially for those with mental health conditions.

Van Wynsberghe (2016) explained that responses to healthcare robots depend on their many capabilities, such as attributes and characteristics commonly shared by all types of robots. With healthcare robots, Tanioka et al. (2017) found that the older adult population reacts to it very well. For example, Pepper, a humanoid robot manufactured by SoftBank Robotics, with applications made by Xing Company, Japan (Tanioka et al., 2018), can identify humans and react attentively to conversations. In Japan, Pepper has been used for interactive communication purposes, such as to dictate menus in several retail shops, including sushi restaurants, and as an interactive directory in healthcare institutions. In their study using the Pepper robot in geriatric health facilities in Japan, Sato et al. (2020) found that it was necessary to determine the preliminary effects of its use, focusing on considerations to appreciate the use of humanoid robot technologies in healthcare.

Another communication robot is Unazuki Kabochan© or known as Nodding Kabochan. Kabochan has features that enable it to sing, talk, and nod while its owner speaks. Kabochan is also programmed to enable it to call its owner by saying “Grandpa” or “Grandma.” To enable a two-way conversation, the feature of Kabochan can be added with Pechan©, a speaker that can remotely control Kabochan to sing and talk through the dedicated app (Osaka et al., 2017).

Developing healthcare robots for the care of older persons with schizophrenia and/or dementia is relatively new. Some of these developments focus on broadening the context of robotic design to function in situations of dementia in order to provide an important role for family members as informal caregivers (Moharana et al., 2019). Additionally, the robot design included providing new schematic strategies that consider robots in family caregivers’ context, suggesting innovative actions and functions of robots. Still, another form of development design addresses links between the features of robots with the relationship to the phase of dementia, which is often an integral criterion in caregiving activities (Moharana et al., 2019).

Based on the theory of nursing and caring from a Japanese perspective, innovative ideas intended for an aging community can be better understood (Tanioka et al., 2017). A proposed model for future healthcare involves human caring articulated through human-to-human relationships and between humans and nonhumans, particularly healthcare robots with their supportive roles (Tanioka, Yasuara, et al., 2019). With robots in healthcare settings, new interactions roles of healthcare providers emerge. A new role for nurses and other healthcare workers is that of intermediaries, whose role is to establish communicative relationships between older persons and intelligent machines (Osaka et al., 2017; Osaka, 2020).

The Transactive Relationship Theory of Nursing (TRETON), by Tanioka (2017), explains the practice process relating to transactive engagements between persons (patients) and intelligent humanoid robots. Within the nursing encounters involving healthcare robots, patients and nurses are in transactive engagements. Transactions between persons and healthcare robots are seen as mechanisms to support interventions for ensuring excellent healthcare for older persons in situations of scarce human resources (Tanioka, 2017).

This paper aims to examine the experience of older persons with schizophrenia and with dementia in the interaction with healthcare robots and intermediaries in a transactive relational engagement.

Case Presentation

In this case study, the central feature of the healthcare robots is an intelligent machine capable of performing sophisticated technological skills of care. For example, healthcare robots can perform nursing tasks such as having a directed communication with older persons with schizophrenia and dementia. Previous relationships between patients and nurses were only two-way relationships. However, with healthcare robots, it developed into a three-party interactive transactive relationship (Tanioka, 2017).

Description of the Patients

There were two patients in the study from different institutional settings.

Patient A was a 52-year-old woman diagnosed with schizophrenia and mild early-onset dementia. She was admitted to the psychiatric hospital in 2018. She had problems with being unable to tolerate her hallucinations and troubles with her family because of her behavior. When walking, her body tilted to the right side and was bent over, and she often fell. Other patients often reported that she frequently made loud voices and laughed loudly, especially when she heard voices (auditory hallucination). Pepper was selected for her as she could have a conversation cooperatively and stand in front of Pepper, touch Pepper, and interact with Pepper.

Patient B was a 72-year-old woman diagnosed with severe Alzheimer’s disease. She had lived in the institution since September 2019. She needed assistance and close monitoring in performing daily activities, for example changing clothes, and communication. Kabochan was
selected for her as she could do only limited interaction while sitting.

Settings
For one of the cases, data were collected at an institution for older persons and another from a psychiatric hospital in a prefecture in western Japan. The institution for older persons provided daily and long-term nursing care services, particularly ensuring personal hygiene maintenance such as bathing, exercise, meals, and activities of daily living. The healthcare staff provided daily healthcare activities that started in the morning and continued until evening. The other institution is a private hospital for patients with mental health problems such as dementia and schizophrenia. In these settings, both the Pepper and Kabochan were regularly used for physical exercises and recreational activities.

Patient A and Patient B were patients in one of these settings and were familiar with the healthcare robots. They were able and willing to participate and familiar with the two robots, Pepper and Kabochan.

Procedure for Data Generation
Data were collected in November 2019. Digital video recordings were made during similar interactions in two separate transactive care situations. Research assistants were trained to observe and note the interactions among the older persons, Pepper and Kabochan, and the intermediary. During the data collection period, the researchers recorded field notes regarding significant situational events between the older person, Pepper, Kabochan, and the nurse intermediary. The field notes also included researcher reflections during the interactions. Observation notes and recorded dialogues were transcribed and translated into English. Those data supported with recorded scenes (pictures) were analyzed and interpreted carefully by reading and rereading the transcriptions and carefully watching and listening to audiovisual recordings. The significant data were highlighted and grouped into the same identified thematic categories. (Please see Figure 3 for the examples of data used for analysis).

Clinical Examination
The first situation was between Patient A and Pepper. Pepper is a humanoid robot manufactured by SoftBank Robotics, with applications made by Xing Company, Japan (Tanioka et al., 2018). This clinical examination utilized the “Kenko Okoku” Talk application for Pepper to enhance human-robot interaction through improved communication between older people and humanoid robots (Miyagawa et al., 2019). This Pepper has been used for communication purposes and could identify humans and respond to conversations.

The second situation was among Patient B, Kabochan with Pechat, and the nurse as an intermediary. The intermediary facilitated the conversation between Patient B and Kabochan by repeating and supporting the question and answer for Patient B when she indicated that she did not hear the words uttered by Kabochan.

Data Analysis
Data were generated from two nursing care activities involving conversations and observations recorded through sophisticated audio-video technologies. These observations recorded interactions among older persons with mental health conditions, healthcare robots (Pepper and Kabochan), and a nurse as an intermediary. Osaka (2020) has described the role of an intermediary as a nurse or healthcare provider who is “the critical component of a responsive management program” (p. 267).

A qualitative thematic analysis following Lambert and Lambert (2012) was used to analyze and interpret the data. Lambert and Lambert (2012) described a process of thematic analysis as an approach in qualitative descriptive study, in which interviews, written descriptions, or observational recordings are used as data. In the qualitative descriptive analysis, a window to the experiential occasion is not moderated by adhering to established criteria such as saturation point and the number of patients, but by the philosophical underpinnings appreciated as the guiding principles for robust analysis and interpretation of data. In essence, a descriptive statement ultimately answers the research question describing the phenomenon being studied (Sandelowski, 2000).

The framework for the analysis and interpretation was grounded from TRETON (Tanioka, 2017). TRETON clarifies the shared engagement that occurs in nursing situations involving healthcare robots as partners. Generated data using observational and conversational dialogue during a transactive relational engagement between healthcare robots, older persons with mental health conditions, and the nurse as intermediary were analyzed and interpreted. Interpretation of the data emphasized the dialogical engagement context, as described and explained by Vaismoradi et al. (2013). The presentation of the findings was done through a straightforward descriptive statement in which the organization of the results greatly depended on the researchers’ understanding of the descriptions and how the data were extracted (Lambert & Lambert, 2012).

Trustworthiness
Trustworthiness and rigor were established through triangulation and detailed transcription (Gunawan, 2015). Triangulation was conducted by generating data from multiple sources, including digital-video recordings, photographs, conversational dialogue, observation, and reflections field notes, which were also transcribed. Detailed descriptions of the patients, the settings, and the data collection process were presented. Audit trails were done by the researchers supporting the derived themes. Additionally, findings, discussions, and conclusions were confirmed to fit the data gathered. The research team consisted of five experienced scholars and researchers with two doctoral students as co-researchers. No conflicting
relationships between the research team members and with patients were found to influence the findings.

**Ethical Considerations**
The study was approved by the Ethics Committee of the Tokushima University Hospital (# 3046) and the Mifune Hospital Clinical Research Ethics Review Committee (#201180502). Patients and their responsible family members approved their participation, including being audiotaped and having excerpts from transcripts and altered photos from the audio-video recordings used in the research reports. Photographs taken during the data generation were blurred to protect identities.

**Results**
The themes revealed from this study were derived from all collected data, including dialogue between patients and healthcare robots, observation and field notes, and recorded videos. Results were presented from both situations of Patient A with Pepper, and Patient B with Kabochan, and the nurse as an intermediary.

Initially, when Patient A was introduced to Pepper, she was freely welcomed by Pepper. She stood in front of Pepper and touched its arm while they were interacting. Subsequently, her conversation with Pepper seemed to exhibit familiarity, as if they have known each other for a long-time. In the interaction with Patient B, in the beginning, Patient B showed a lack of interest in Pepper, but after some time, she became more interested and seemed to have enjoyed interacting with Pepper until the end of the session, which could be seen from her facial expressions and laughter.

Findings from both cases revealed observations and reflections that thematically reflected behaviors exhibited as expressions of joy. This was uncovered from the three thematic categories described as *feeling for the other, inspiring meaningful responses, and demonstrating expressions of joy.*

**Feeling for the other**
The conversation between Patient A or B and the healthcare robots, whether Pepper or Kabochan with Pechat, revealed the theme of “feeling for the other.” The behavioral displays of patients, such as when Patient A empathetically responded to Pepper complaining about their knees and waist, reflect this theme:

*Pepper:* “Uh-uh. I’m a robot, but sometimes my knees and waist get tired…. By the way, I am a robot, and I sometimes can’t work.”
*Patient A:* “I’m sorry to hear that.”

Figure 1 shows Patient A interacting with Pepper robot. When talking with Pepper robot, she stood up in front of Pepper, maintained eye contact, and touched Pepper’s hands as though communicating a sense of comfort, familiarity, and friendship with Pepper.

**Inspiring meaningful responses**
Despite the mental health conditions of Patient A, meaningful responses were expressed during the conversation with Pepper, such as:

*Pepper:* What kind of food do you like?
*Patient A:* Cheese
*Pepper:* I see, and I like a fried egg.
*Patient A:* That is delicious, isn’t it?
*Pepper:* Talking about food is making me hungry.
*Patient A:* Do you want something to eat?

While Pepper is an interactive robot with artificial intelligence, when its programming includes words and phrases that convey some form of emotion or affection, it might meaningfully respond to patients. In this situation, Patient A’s response was appropriate to the statement raised by Pepper. Patient A was shown to be a caring person.

Patient B could also express a meaningful response when Kabochan with Pechat, with the intermediary, did join in the singing to end the session:
Kabochan: Can I sing?
Intermediary: Let’s end the session with singing together.
Patient B: Can I sing?

**Demonstrating expressions of joy**

Patients A and B displayed expressions of happiness, such as tenderly touching Pepper, smiling while raising Kabochan, and stroking Kabochan’s arm. At the beginning of the conversation using Kabochan, Patient B closed her eyes and did not show any interest in the surroundings (Figure 2, No. 1). However, when the nurse, as the intermediary, handed Kabochan to her and encouraged her to talk to Kabochan, she opened her eyes, smiled slowly, and started talking to Kabochan (Figure 2, No. 2). Once Patient B was holding Kabochan, she engaged without hesitation in the conversational dialogue with Kabochan as managed by the researcher using the Pechat application on a smartphone. These situations are captured in the pictures displayed in Figure 2.

As Kabochan said, “Lift me up!” Patient B smiled and obligingly raised Kabochan (Figure 2, No. 3). Then, she gently stroked Kabochan’s arm, and Kabochan called her name, “Ma’am. B” (Patient B’s name), and Patient B answered, “Yes” while smiling (Figure 2, No. 4). (Observation note)

In these interactions with Kabochan, Patient B’s behavior, as seen through her facial expressions, changed from being withdrawn and eyes closed to eyes open and active engagement. This change shows improvement in her interest in the surroundings and engagement with others. (Observation note)

The evidence of data for analysis derived from representative excerpts of interactions between patients and robots, observation notes, and recorded scenes (pictures) is presented in Figure 3.

![Figure 2 Patient B with Kabochan](image)

![Figure 3 Evidence of interactive conversation between the patient, healthcare robots, and intermediary](image)
Discussion

From the analysis and interpretation of generated data, a constitutive pattern was revealed. The three thematic categories from the two cases were feeling for the other, inspiring meaningful responses, and demonstrating expressions of joy. These themes revealed the experience of the older persons with schizophrenia and with dementia as an experience of joy. It is a relational engagement of ‘joy’ experienced by older persons with schizophrenia and dementia, the healthcare robot, and the intermediary.

Feeling for the other

Feeling for the other was seen from the interaction between Patient A with Pepper. There was a welcoming feeling freely expressed at the beginning of their conversation. Despite her mental health condition, she could empathize with Pepper and appropriately responded to the spoken statements. The communicative interaction provided the opportunity for Patient A to share her physical complaints and express her concern for Pepper’s complaints.

A study by Miyagawa et al. (2019) showed that interactions between older people and humanoid robots could be mediated. The findings of that study suggested that developing dialogue patterns that enable humanoid robots to sympathize or show empathic understanding with older persons are critically important.

Inspiring meaningful responses

The second theme, inspiring meaningful responses, was derived from the conversation in which Patient A seemed to feel safe and comfortable in the environment with a robot in her surroundings. In one observation, Pepper said, “you must have been popular with boys when you were young”, Patient A said, “it’s wrong” (meaning that admitting being popular with the boys at a young age may not fit well in the Japanese culture of shame). From this conversation, her expression of humility can be understood. The confidence to reply appropriately to Pepper showed that Patient A expressed her honesty and humility (Mayeroff, 1971).

Demonstrating expressions of joy

The third theme was identified in the changes in physical expressions. Patient B, at the beginning of the interaction with the healthcare robots, did not show interest in her surroundings, even with Kabochan. However, when the nurse in an intermediary role initiated and facilitated interaction by starting to interact with Kabochan, eventually Patient B showed expressions of happiness. Her interest in her surroundings began to increase. Here, the nurse as an intermediary played a significant role in stimulating transactive relational interactions. The nurse was tuned in to Patient B’s facial expression and helped to facilitate her expression of joy. The intermediary intentionally observed the situation and managed the conversation (from the smartphone) to respond to a particular condition, such as calling Patient B’s name. Controlling the robot’s conversation with human beings during the interaction was previously used in other studies. Similar to this finding, Moharana et al. (2019) found in their research that interaction with robots brought joy and entertainment for older people with dementia.

General Impression

When using social robots for people with inadequate facial processing, for example, people with schizophrenia, clinical symptoms are important considerations. The use and acceptance of humanoid robots may negatively impact persons with symptoms associated with schizophrenia (Raffard et al., 2016). Patient A actively accepted the sympathetic dialogue with Pepper, and she could respond with compassionate words. Patient A lived with symptoms of schizophrenia, yet she could express a compassionate attitude toward Pepper. This may have been related to Pepper’s long-term presence in the facility. Patient A’s communication with Pepper provided evidence of herself as a caring person and reinforced the presence of her being as a whole person whose potential for healthy engagements is sometimes realized, even in the presence of schizophrenic symptoms. Such empathetic natural language functions of the robot may advance patient rehabilitation in mental health settings (Martí et al., 2006).

This approach used the WoZ environment, from the story of the “Wizard-of-Oz,” in which the empathic reactions of human beings to robots were explored, with the robot’s verbal and non-verbal expressions being manipulated by unseen humans. These studies showed that the patients displayed some emotional attachments toward the robots (Lakatos et al., 2014; Vallverdú et al., 2018).

These two patient findings illuminate the healthcare robots’ value of possibilities in mental health care and the role of the nurse as a facilitator of transactional engagements. Tanioka, Yasuhara, et al. (2019) and Osaka (2020) assert that the healthcare worker as an intermediary person plays an essential role in facilitating communication between healthcare robots and patients. However, the quality of applications for existing healthcare robots is inadequate (Tanioka et al., 2021). The dialogues between healthcare robots and patients often end with errors. Also, the verbal expressions and response timing of healthcare robots are delayed and different from those of nurses (Miyagawa et al., 2019). Despite, as the role of intermediary competency is increased, empathic conversations will create caring environments within the transactive relationships among older persons, healthcare robots, and intermediaries.

The findings of this study can contribute to the development of appropriate nursing care processes involving healthcare robots in situations of mental health conditions such as schizophrenia and/or dementia among older persons (Lee et al., 2018). Healthcare robots need to be imbued with communication functions that are based on caring in nursing. To reconstruct a similar human-like interaction, it is crucial for a social robot to understand humans’ needs and modify their behaviors accordingly (Tanevska et al., 2020). Importantly, without guarantees of
safety, and the starter of healthcare robots in health facilities will not continue. Due to the different regulations in each country, it is essential to examine the national policies and related regulations for healthcare robots’ use. As the initial stage, developing guidelines for the use of healthcare robots are encouraged (Yasuhara et al., 2020). These qualitative case studies were conducted with two patients involving two nursing situations. Thus, the findings of this study cannot be representative of all situational involvements with healthcare robots; however, the results can inform healthcare providers as well as robotic engineers on ways healthcare robots can be used in healthcare practice, particularly in settings with older persons who have mental health conditions. In addition, further studies are needed in relation to the use and benefits of transactive engagements with healthcare robots.

**Conclusion**

This study provided initial evidence that the transactive engagements of robots and nurse intermediaries in psychiatric and mental health settings with older persons can result in occasions of ‘joy’ for the patient. Understanding the experiences of older persons can inform healthcare providers about prioritizing health concerns of older persons and provide new insights regarding the development of nursing care for persons with mental health conditions. Findings suggest that transactive engagements with robots in the aforementioned settings facilitate the experience of joy among older persons in psychiatric-mental health settings. However, these findings are not expected to be prescriptive but rather indicate the importance of this study as an early step in testing the value of healthcare robots in nursing situations.

**Declaration of Conflicting Interest**

All authors have declared no actual or potential conflict of interest.

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**Authors’ Contributions**

TT: Conceptualization, data collection, analysis, writing and revising the manuscript. FB: Data collection, analysis, writing and revising the manuscript. TY: Data collection, analysis, reviewing and revising the manuscript. KO: Conceptualization, data collection, reviewing and revising the manuscript. RL: Conceptualization, analysis, writing and revising the manuscript. BK: Data analysis, reviewing and revising the manuscript. SS: Data analysis and interpretation, reviewing and revising the manuscript. All authors agreed and approved the manuscript for publication.

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**Data Availability Statement**

The datasets generated during and/or analyzed during the current study are not publicly available due to ethical restrictions but are available from the corresponding author on reasonable request.

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Social stigma towards nurses: Time to refocus on what matters most

Yusrita Zolkefli*

Dear Editor,

I read the article "Social stigma towards nurses taking care of patients with COVID-19 in Indonesia: A mixed-methods study" by Manik et al. (2021) with great interest, but also with a sense of disappointment, sadness and anger, particularly in regard to the social stigma encountered by these nurses, which partially originates from their colleagues. While fear is understandable due to the sense of uncertainty brought about by the pandemic, being labelled a "plague spreader" and ostracised by their communities is uncalled for and cruel. This timely paper provides a first-hand narrative of the nurses' job and a critical analysis of the reality that nurses face in carrying out their professional responsibility to care for patients during a pandemic crisis. We learned the implication of stigmatisation of COVID-19 patients and its effects on the healthcare system, their families and healthcare professionals who come into close contact with people affected by the virus. Numerous acts of violence, harassment and stigmatisation have been reported in association with the COVID-19 pandemic, with 67 per cent of these recorded cases of violence and harassment directed at healthcare professionals (Devi, 2020).

This paper serves as a wake-up call to health organisations to refocus tangible and coherent strategies on what matters most on these frontlines: creating a safe, non-judgmental and professional environment that supports nurses in their daily professional responsibilities while also allowing them to manage the danger and threat of moral injury that they could face during the pandemic. Is this, however, viable? The answer is yes. First, during these perplexing and unpredictable times, health organisations must be prepared to tell their managers if they require psychological support and resources available and be prepared to tell their managers if they require assistance. Nurses must not be afraid to communicate real or perceived difficulties to managers related to stigma or concerns about their mental health. At the same time, whether or not the nurses are directly affected by the social stigma associated with the pandemic, the importance of social support from colleagues cannot be overstated. Colleagues are like family, and we are responsible for shielding them from any undesirable stigmas that may arise during the pandemic. Such acts of solidarity (through social media groups, for example) can be one of the salient ways to keep all staff protected.

Third, it is also critical that affected nurses be ready to take the psychological support and resources available and be prepared to tell their managers if they require assistance. Nurses must not be afraid to communicate real or perceived difficulties to managers related to stigma or concerns about their mental health. At the same time, whether or not the nurses are directly affected by the social stigma associated with the pandemic, the importance of social support from colleagues cannot be overstated. Colleagues are like family, and we are responsible for shielding them from any undesirable stigmas that may arise during the pandemic. Such acts of solidarity (through social media groups, for example) can be one of the most effective ways to counter stigma. Fourth, social stigmas can ensure that nurses' morale is maintained despite the pandemic catastrophe. Manik et al. (2021) also added an essential and courageous voice to the debate about healthcare professional solidarity. Health organisations can no longer naively admire the enormous sacrifices made by nurses if we mistreat them. It is then necessary to reaffirm the points I made earlier about the importance of nursing leaders recognising and responding to moral distress (Zolkefli, 2020). Second, health organisations have an institutional responsibility to ensure that it is safe for employees to discuss mental health issues and reassure nurses about the potential consequences of such disclosure on their careers. The team leaders or nurse managers are considered to be the ones that provide psychological support to the nurses. While it is a manager's moral responsibility to foster a positive, ethical practice climate, it is also critical for the nurse leader to be open and welcoming to personnel with ethical concerns (Makaroff et al., 2014). The manager's responsibility on the ward also involves promoting, encouraging and supporting staff in seeking help. This 'in-house' social support may be one of the salient ways to keep all staff protected.

Yours sincerely,

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be alleviated if the government consistently promotes the nurses’ solidarity activities. Because ambiguous information is the ‘catalyst of stigma’, consistent methods to prevent pandemic disinformation are fundamental.

In short, we must consider how long nurses can keep their resilience in the face of social stigma and what additional role nurse leaders might play in this context. In all honesty, now is not the time to ask nurses to manage social stigma, stress and psychological well-being while remaining resilient in the quiet. Nurses have not only been put in a vulnerable position, but they are also very well aware that their physical and mental fortitude has been sorely stretched. Even though we must accept that nursing staff has shrunk, most nurses claimed that it is their duty to continue caring for patients. While it is critical to developing healthy coping strategies and mechanisms in managing social stigma, especially in the high-stakes environment of COVID-19, it is equally crucial to provide concerted and robust support to the nursing community when and where it is needed.

Keywords
COVID-19; social stigma; nurses; leadership; mental health; violence; anger; morals

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