

"For this scheduling, I really hope that my friends (staff) will be obedient so that they are giving the service according to what I made" (Head nurse, P5)

Discussion

This study aimed to explore the experiences of nurse managers in managing staff nurses' work schedules during the COVID-19 pandemic. Four themes were developed and explained in the following discussion.

Theme 1. Nurse Shortage

This theme indicated the challenge of nurse managers in managing the nurse workforce during the COVID-19 pandemic. However, an effective and efficient schedule should be made, with an adequate number of nurses in each shift (Rashwan, 2017). The lack of nurse staff in this study occurred because many nurses got sick and needed to self-isolate. This study supports the review conducted by Al Thobaity and Alshammari (2020) found that staff shortages are a problem that nurses face when dealing with COVID-19. Data from the International Council of Nurses (2021) also show that in several countries, nurses are the health workers who are most exposed to COVID-19. Therefore, nurse resilience needs to be improved by ensuring physical and psychological safety and health to maintain the number of nurses (International Council of Nurses, 2021; Zahednezhad et al., 2021). Hospitals can play a role in preventing nurses from falling ill, especially by providing a passive shift pattern with three working days and two days off to provide rest time for nurses.

Additionally, in this study, the nurse managers understand the importance of schedule management and its impact on care services. This understanding could be considered one of the nurse managers' competence to ensure high-quality care, although with a lack of personnel. However, structural components of staff tend to affect the care process and quality of service (Voyce et al., 2015). Thus, the nurse managers' competence in scheduling is highly needed.

Theme 2. Workforce Scheduling Strategy

According to the study findings, the first strategy used by the head nurses to overcome the shortage was to make the staff effective, based on the nurses' competence and composition. If it could not be anticipated, the head nurses asked for help from other rooms and proposed the addition of new personnel, such as adding volunteers to the heads of the installation or the nursing managers. Nurse managers make an effort to recruit nurses, both volunteers and non-volunteers, to compensate for staff shortages during a pandemic (Poortaghi et al., 2021). The strategy carried out by the nurse managers was adjusted to the span of control. It is noteworthy that the head nurses could only make staff effective, while the head of the installation mobilized nurses between rooms by asking for help from non-COVID-19 rooms. At the same time, the rotation of nurses between rooms or units was carried out by the nursing managers in coordination with the head nurses in the units. The head nurses coordinated the implementation of the directive function in consultation with other departments or management. However, nurse managers need to understand

the organizational structure and recognize who will make decisions (Marquis & Huston, 2017) to get feedback and good results. However, managing schedules during a pandemic is not easy. Mobilizing nurses and new volunteers between rooms was a challenge for nurse managers to maintain a skill mix during a pandemic. However, a combination of senior and junior nurses in shifts could foster understanding and reduce work stress (Gao et al., 2020; Kuppuswamy & Sharma, 2020), as well as improve the quality of care, reduce fatigue, and increase job satisfaction (Kernick, 2018).

Another effort needed to overcome the shortage of personnel while still paying attention to patient safety is the strategy to overcome the labor shortage from the Centers for Disease Control and Prevention (CDC), which hospitals need to understand and meet the minimum number of staff needed to create a safe work environment during a pandemic. Hospitals can work with other health services to recruit additional nurses, adjust service schedules, rotate nurses to service sites, and assist nursing students and volunteers. If the shortage of personnel is not met, the hospital may allow nurses who are suspected or confirmed to be infected with SARS-CoV-2 but are healthy enough and willing to work, but according to the priority of tasks recommended by the Centers for Disease Control and Prevention (Cdc) (2021).

Besides, another scheduling strategy developed in this study was planning and analyzing the schedule during the pandemic, which could be done by counting the number of nurses per shift, working hours, and working days. With schedule planning, the number of staff in the units will be well controlled because it was done by counting the number of nurses according to the number of patients per shift so that nurses will not be tired. This is in line with Gao et al. (2020) stated that, by scheduling, the head nurses could dynamically adjust the nurses' working hours to ensure patient safety and service quality. However, schedules are drawn up manually and using computers, so a flexible formula is needed for scheduling nurses shifts under conditions of an insufficient number of nurses in the form of software that is helpful in scheduling during a pandemic (Seccia, 2020).

In addition to the second strategy, the nurse managers' briefing function was implemented by communicating official schedule updates through social media platforms, such as WhatsApp. The head nurse created a WhatsApp group to inform of the scheduling changes. This is in line with a review conducted by Farsi (2021) stated that social media platforms, such as WhatsApp, are currently used to obtain and disseminate information quickly, cheaply, and more easily accessible, including in the field of nursing.

Theme 3. Change of Shift Schedule

During the COVID-19 pandemic, the nurse shift pattern at the hospital was eight hours in the morning, afternoon, and evening. This is in line with Gao et al. (2020) that the shift pattern during the pandemic is a shift of four or eight hours in isolation rooms and shifts of eight or 12 hours in semi-contaminated areas with a pattern of the morning, afternoon, and evening shifts (Gao et al., 2020). However, not applying overtime or long shifts and implementing middle shifts were some of the nurse managers' efforts to avoid stress and fatigue among nurses during the pandemic (Suter et al., 2020). Meanwhile, permanent shift rotation for five working days and

shift rotation for six to eight working days were carried out to overcome fatigue and adjust to the adequacy of the existing workforce. This is not in line with the statement by [Kuppuswamy and Sharma \(2020\)](#) that nurses are placed in the COVID-19 isolation room for 14 days on duty and then quarantined for 14 days where the hospital provides accommodation. There is a difference in shift rotation between the results of this study and the other studies, showing that policies made regarding the length of the rotation of nurses in isolation rooms should be adjusted to the ability of a country or region regarding the adequacy of existing personnel.

During the pandemic, nurse managers frequently changed schedules. A previous study stated that changes in the schedule were carried out flexibly to meet the workforce's composition and reduce the occurrence of stress and fatigue ([Asmaningrum et al., 2020](#)). The schedule was made in the form of a team with a fixed composition of nurses for every shift. Therefore, nurses had mental readiness in the team. In addition, monitoring the schedule for each shift was carried out to overcome the shortage of personnel. Dynamically adjusting nurses' working hours and increasing the number of nurses on duty can ensure patient safety and maintain service quality. In other words, flexible shifts can further ensure that nurses have time off and reduce their workload and stress, especially during middle and night shifts ([Gao et al., 2020](#)).

Theme 4. Expecting Guidance from Superiors and Compliance from Staff

No doubt, a team approach is needed between the nursing manager and the head nurses to build trust and support ([Marquis & Huston, 2017](#)) to avoid confusion in the schedule management. Schedule management requires guidance, exemplified to make it easier to make a schedule. According to the findings of this study, the head nurses expected their top nurse managers could provide guidance and direction in making official schedules and improving communication to find out the difficulties faced in increasing nurses' satisfaction in scheduling implementation. In other words, the competence of top nurse managers is also needed in carrying out resource management and strategic management, such as making contingency plans for both internal and external disaster management and planning and implementing emergencies ([Morse & Warshawsky, 2021](#)).

In addition, policies regarding schedule management are also needed, especially in isolation rooms. Policymaking related to workforce management, including scheduling, needs to be carried out to implement the nursing manager's planning function ([National Health Service \(Nhs\) England, 2019](#)). Hospitals can also provide training related to the competencies that nurse managers must possess. At the same time, professional organizations can add continuing education programs related to advanced disaster nursing to nurses at Clinical Nurse levels 1 and 2 to be ready to face crises. The career ladder policy in Indonesia is outlined within the Regulation of Health Ministry No. 40 the year 2014 on the career ladder. The nursing career ladder starts from clinical nurse level I up to V ([Indonesian Ministry of Health, 2014](#)).

Besides, the nurse staff compliance regarding the schedules is also needed. It is understandable that nurses' shift cycles during the pandemic tend to be irregular, and this causes nurses to have no guarantee that they can go on

vacation on weekends, resulting in nurses' non-compliance with scheduling ([Lee & Jeong, 2021](#)). Hospitals can use a sedentary shift pattern with three working days and two days off to give nurses time to rest, reduce jealousy between nurses, and provide definite days off to reduce the incidence of nurses falling ill. However, the nurse manager's control function must be implemented by evaluating the staff's implementation of the service schedule.

Implications of the Study

The findings of this study show that adequate human resources are critical in managing schedules during the COVID-19 pandemic. Therefore, nurse managers should strategically carry out interventions to overcome staff shortages by changing schedules according to pandemic conditions, recruiting volunteers, and increasing communication regarding schedule management through social media while still paying attention to the competence of nurses on duty. In addition, guidance from top nurse managers regarding schedule management and policy is needed among head nurses during the pandemic.

The study findings also provide encouragement to health organizations about the need for adequate hospital resources, flexible work schedules, and adequate rest periods during the pandemic in order to reduce the incidence of sick nurses. Also, the findings encourage national and international nurse managers about the efforts to manage work schedules in critical situations and that working hours and work schedules in each country will differ according to the adequacy of available resources.

In addition, the results of this study reveal the experience of nurse managers in managing schedules during the COVID-19 pandemic and that nurse managers feel confused in managing schedules. To obtain more information about personnel management strategies, further research is needed in various more diverse institutions.

Conclusion

It is concluded that the shortage of human resources is a major problem for nurse managers during the pandemic. Effective managing personnel, mobilizing, rotating, and recruiting volunteers are the strategies that can be used by the hospitals. The use of a sedentary shift pattern and sufficient holidays can reduce the incidence of nurses being sick and increase nurses' compliance with scheduling. Besides, a staffing calculation formula is needed by considering the unpredictable shortage of staffing. The nursing manager can guide the head nurses to reduce confusion in schedule management.

Declaration of Conflicting Interest

The authors declare no conflict of interest in this study.

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Authors' Contributions

All authors contributed to the conception of this study, drafting and revising the work critically, approved for the final version, and agreed to be accountable for all aspects of the work.

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Data Availability

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

References

- Al Thobaity, A., & Alshammari, F. (2020). Nurses on the frontline against the COVID-19 pandemic: An integrative review. *Dubai Medical Journal*, 3(3), 87-92. <https://doi.org/10.1159/000509361>
- Asmaningrum, N., Nur, K. R. M., Purwandari, R., & Ardiana, A. (2020). Nursing work arrangement in health care settings during the pandemic of Covid-19: Nurse managers' perspectives. *NurseLine Journal*, 5(2), 231-240. <https://doi.org/10.19184/nlj.v5i2.20544>
- Centers for Disease Control and Prevention (CDC). (2021). Strategies to mitigate healthcare personnel staffing shortages. Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/hcp/mitigating-staff-short-ages.html>
- Colorafi, K. J., & Evans, B. (2016). Qualitative descriptive methods in health science research. *HERD: Health Environments Research & Design Journal*, 9(4), 16-25. <https://doi.org/10.1177%2F1937586715614171>
- Farsi, D. (2021). Social media and health care, Part I: Literature review of social media use by health care providers. *Journal of Medical Internet Research*, 23(4), e23205. <https://doi.org/10.2196/23205>
- Fernandez, R., Lord, H., Halcomb, E., Moxham, L., Middleton, R., Alananzeh, I., & Ellwood, L. (2020). Implications for COVID-19: A systematic review of nurses' experiences of working in acute care hospital settings during a respiratory pandemic. *International Journal of Nursing Studies*, 111, 103637. <https://doi.org/10.1016/j.ijnurstu.2020.103637>
- Gao, X., Jiang, L., Hu, Y., Li, L., & Hou, L. (2020). Nurses' experiences regarding shift patterns in isolation wards during the COVID-19 pandemic in China: A qualitative study. *Journal of Clinical Nursing*, 29(21-22), 4270-4280. <https://doi.org/10.1111/jocn.15464>
- Hu, D., Kong, Y., Li, W., Han, Q., Zhang, X., Zhu, L. X., ... Yang, J. (2020). Frontline nurses' burnout, anxiety, depression, and fear statuses and their associated factors during the COVID-19 outbreak in Wuhan, China: A large-scale cross-sectional study. *EClinicalMedicine*, 24, 100424. <https://doi.org/10.1016/j.eclinm.2020.100424>
- Huang, L., Lin, G., Tang, L., Yu, L., & Zhou, Z. (2020). Special attention to nurses' protection during the COVID-19 epidemic. *Critical Care*, 24, 120. <https://doi.org/10.1186/s13054-020-2841-7>
- Indonesian Ministry of Health. (2014). *Regulation No 40 Year 2014 on Career Ladder*. Jakarta: Ministry of Health, Republic of Indonesia Retrieved from <https://peraturan.bpk.go.id/Home/Details/119077/permenkes-no-40-tahun-2014>
- International Council of Nurses. (2021). ICN COVID-19 update. Retrieved from <https://www.icn.ch>
- Kernick, D. (2018). Skill-mix change and the general practice workforce challenge. *The British Journal of General Practice*, 68(669), 176. <https://dx.doi.org/10.3399%2Fbjgp18X695429>
- Kuppuswamy, R., & Sharma, S. K. (2020). Efficient utilization of nursing manpower during the COVID-19 pandemic. *Pondicherry Journal of Nursing*, 13(2), 39-42. <https://doi.org/10.5005/jp-journals-10084-12145>
- Lee, J., & Jeong, I. S. (2021). Compliance with recommendations on work schedule for shift nurses in South Korea. *Safety and Health at Work*, 12(2), 255-260. <https://doi.org/10.1016/j.shaw.2021.01.006>
- Marquis, B. L., & Huston, C. J. (2017). *Leadership roles and management functions in nursing: Theory and application* (9th ed.). Philadelphia: Lippincott Williams & Wilkins.
- Marzilli, C. (2021). A year later: Life after the Year of the Nurse. *Belitung Nursing Journal*, 7(2), 59-61. <https://doi.org/10.33546/bnj.1509>
- Morse, V., & Warshawsky, N. E. (2021). Nurse leader competencies: Today and tomorrow. *Nursing Administration Quarterly*, 45(1), 65-70. <https://doi.org/10.1097/naq.0000000000000453>
- National Health Service (NHS) England. (2019). *Nursing and midwifery e-rostering: A good practice guide*. Retrieved from https://www.england.nhs.uk/wp-content/uploads/2020/08/20190903_UPDATED_Nursing_Midwifery_E-Rostering_Guidance_September_2019.pdf
- Polit, D., & Beck, C. (2018). *Essentials of nursing research: Appraising evidence for nursing practice* (9th ed.). Philadelphia: Lippincott Williams & Wilkins.
- Poortaghi, S., Shahmari, M., & Ghobadi, A. (2021). Exploring nursing managers' perceptions of nursing workforce management during the outbreak of COVID-19: A content analysis study. *BMC Nursing*, 20(1), 1-10. <https://doi.org/10.1186/s12912-021-00546-x>
- Rashwan, W. (2017). *An integrated framework for staffing and shift scheduling in hospitals*. (PhD Thesis), Technological University Dublin, Ireland. Retrieved from <https://arrow.tudublin.ie/busdoc/25/>
- Salleh, I. S., Ali, N. S. M., Yusof, K. M., & Jamaluddin, H. (2017). Analysing qualitative data systematically using thematic analysis for deodoriser troubleshooting in palm oil refining. *Chemical Engineering Transactions*, 56, 1315-1320. <https://doi.org/10.3303/CET1756220>
- Seccia, R. (2020). *The nurse rostering problem in COVID-19 emergency scenario*. Retrieved from http://www.optimization-online.org/DB_FILE/2020/03/7712.pdf
- Sundler, A. J., Lindberg, E., Nilsson, C., & Palmér, L. (2019). Qualitative thematic analysis based on descriptive phenomenology. *Nursing Open*, 6(3), 733-739. <https://doi.org/10.1002/nop2.275>
- Suter, J., Kowalski, T., Anaya-Montes, M., Chalkley, M., Jacobs, R., & Rodriguez-Santana, I. (2020). The impact of moving to a 12h shift pattern on employee wellbeing: A qualitative study in an acute mental health setting. *International Journal of Nursing Studies*, 112, 103699. <https://doi.org/10.1016/j.ijnurstu.2020.103699>
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, 19(6), 349-357. <https://doi.org/10.1093/intqhc/mzm042>
- Voyce, J., Gouveia, M. J. B., Medinas, M. A., Santos, A. S., & Ferreira, R. F. (2015). A Donabedian model of the quality of nursing care from nurses' perspectives in a Portuguese hospital: A pilot study. *Journal of Nursing Measurement*, 23(3), 474-484. <https://doi.org/10.1891/1061-3749.23.3.474>
- Zahednezhad, H., Zareiyan, A., & Jame, S. Z. B. (2021). Relationship between quality of work-life, resilience and burnout among nursing professionals during COVID-19 pandemic in Iran: A cross-sectional study. *Belitung Nursing Journal*, 7(6), 508-515. <https://doi.org/10.33546/bnj.1702>

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Suicide prevention: A qualitative study with Thai secondary school students

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Abstract

Background: Suicide is the second leading cause of death among adolescents around the globe. Therefore, understanding its causes and prevention is needed.

Objective: This study aimed to explore Thai secondary school students' perceptions related to causes and preventions of suicide and the learning needs of suicide prevention.

Methods: A descriptive qualitative approach was employed in this study. Purposive sampling was used to select 32 adolescents for focus group discussions and ten adolescents for in-depth interviews. Data were collected from September 2019 to March 2020 and analyzed using content analysis.

Results: Causes of suicide included seven sub-categories: parents' expectations of children's academic achievement, bullying, family problems, teenage love, lack of stress management skill, imitation behavior on social media, and substance use behavior. Suicide prevention consisted of five sub-categories: peer support, parental support, school support, health professionals and significant support, and knowing the value and believing in self. In addition, students' learning needs had two sub-categories: developing online learning platforms regarding suicide prevention and mental health promotion and prevention projects.

Conclusion: The findings of this study could guide nurses and other health professionals to develop a suicide prevention program for secondary school students. The study results could also be used as essential evidence for driving health care policy in promoting and preventing suicide in adolescents with the involvement of key stakeholders.

Keywords

suicide risk behavior; adolescent; students; qualitative study; bullying; nursing; Thailand

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Background

Suicide is the second leading cause of death among adolescents worldwide ([World Health Organization, 2020](#)). The [Centers for Disease Control and Prevention \(2020\)](#) has reported that, during 2019, 19% of students reported seriously considered attempting suicide, 16% made a suicide plan, and 9% made a suicide attempt. Moreover, nearly 3.4 million adolescents aged 15-19 years worldwide have suicidal ideation, with half of them attempting suicide ([Zalsman, 2012](#)). The [World Health Organization \(2020\)](#) stated that adolescent mental health conditions account for 16 percent of the global burden of disease and injury in people aged 10 – 19 years, of which half of the mental conditions start by 14 years of age, but most cases are undetected and therefore undertreated.

The consequences of not addressing adolescent mental health conditions extend to adulthood, impairing both physical and psychological health and limiting opportunities to lead fulfilling lives as adults ([World Health Organization, 2020](#)). Despite great efforts towards suicide prevention in Thailand, the suicide rate has not decreased significantly. Adolescent suicide is the fourth highest cause of death among Thai

adolescents ([Kittiteerasack, 2012](#)). In recent years, evidence indicates that 20.6% of the adolescents in central Thailand aged 12 - 19 years had suicidal ideation ([Rungsang & Chaimongkol, 2017](#)).

The causes of suicide risk behavior among Thai adolescents are complicated. However, previous research studies in Thailand reported that Thai adolescent suicide risk behavior is associated with the risk factors including adverse life events ([Thanoi et al., 2010](#)), rumination ([Thanoi et al., 2010](#)), stressful events ([Rungsang & Chaimongkol, 2017](#)), negative psychological attributes ([Rungsang & Chaimongkol, 2017](#)), resilience ([Thanoi et al., 2010](#); [Chaniang et al., 2020](#)), and social support ([Thanoi et al., 2010](#); [Chaniang et al., 2020](#)).

A qualitative study on attempted suicide triggers in Thai adolescents found that severe verbal criticisms, expulsion to die by a significant family member, disappointed and unwanted by boyfriend in a first serious relationship, unwanted pregnancy, and mental illness lead to intense emotions and irresistible impulses ([Sukhawaha et al., 2016](#)). Another qualitative study on the perception of adolescents, teachers, and parents towards causes and prevention of suicide in secondary school students in Chiang Mai, Northern Thailand, found that parents' expectations, lack of skills to confront

problems, feeling lonely from inadequate support, and lack of parental skills were described as the causes of students' suicide risk behavior (Chaniang et al., 2019). On the other hand, cultivating self-esteem, parental support and caring, peer support, and supportive school environments were explained as the protective factors for adolescent suicide risk behavior (Chaniang et al., 2019).

Nakhon Phanom Province was selected for our study, located in the North-Eastern part of Thailand. The Outpatient Department, Renu Nakhon Hospital, Renu Nakhon District, Nakhon Phanom province, reported that from the years 2016 to 2021, 89 cases of adolescents had depressive symptoms and 33 cases of attempted suicide (Renu Nakhon Hospital, 2021). Therefore, a study related to suicide prevention is needed. Besides, a lack of local studies has been conducted regarding this issue, which is considered the literature gap. To our knowledge, only one quantitative study was conducted by Chaniang et al. (2020) revealed that emotional distress, rumination, and perceived negative life event were positively significantly associated with suicide risk behavior among secondary school students. In contrast, social support and resilience were negatively significantly associated with suicide risk behaviors among secondary school students (Chaniang et al., 2020). However, these results might not capture all suicide causes and prevention efforts. Thus, a qualitative study will provide new knowledge regarding this topic. Our study aimed to explore Thai secondary school students' perceptions of suicide causes and prevention and the needs of suicide prevention.

Methods

Study Design

A qualitative descriptive design (Lambert & Lambert, 2012) was used in this study.

Setting and Participants

This study was conducted at a public school in a remote area in Nakhon Phanom Province, Thailand. This setting was selected based on the increasing number of secondary school students' suicide risk factors, such as the number of student experiences of depressive symptoms and suicide. Purposive sampling was used to select potential secondary school students in Grade 11 based on the following inclusion criteria: (i) able to express personal thoughts and opinions on suicide-related topics, (ii) able to expressively and proficiently speak Thai, and (iii) willing to participate. The exclusion criteria of the participants were those having been diagnosed with depression or attempted suicide.

Data Collection

Data were collected using focus group discussions (FGDs) and in-depth interviews from September 2019 to March 2020. FGD guidelines were developed by the research team to explore the individual and contextually related factors causing suicide, prevention of suicide, and the need for suicide prevention in schools. FGDs were conducted with thirty-two adolescents who were studying in Grade 11. Each FGD consisted of eight adolescents per group, and each group had a moderator and a note-taker to facilitate the discussion and

manage the group. These activities allowed the facilitator to participate actively and respond verbally to the topics in the FGD. In addition, the researcher used open-ended questions to encourage adolescents to think and share their ideas and experiences on suicide risk behaviors and adolescent suicide prevention. The researcher took a role as a moderator and was responsible for note-taking.

Each FGD lasted approximately 60 to 90 minutes or until repeated information was identified. The FGD process was audio-recorded. There were four main questions in FGD, namely (i) "in your opinion, what are the risk factors of adolescent suicide?", (ii) "in your opinion, what are the protective factors for preventing adolescent suicide?", (iii) "in your opinion, who should be involved in adolescent suicide prevention in schools, why, and how?", and (iv) "in your opinion, what is/are characteristics of suicide prevention program in school?" The guideline contents were reviewed by three experts majoring in adolescent suicide risk behaviors and qualitative research methods.

Additionally, there were ten individual in-depth interviews conducted in a private place at a convenient time based on the participants' preferences. The research team also developed an in-depth interview guideline, and the questions were the same as those for FGD.

Data Analysis

Data were analyzed iteratively using content analysis (Miles & Huberman, 1994). Transcripts from each group were read, and categories were reviewed several times to ensure that the concepts pertaining to the same phenomena were placed in an appropriate category. The primary author identified the categories and content throughout the data collection and analysis processes and verified by two co-authors for coding consistency, the emergence of categories, and extraction of statements to support each category and sub-category. Coding, categories, and key findings were discussed by the co-authors until consensus was reached.

Trustworthiness

The researchers used four criteria of Lincoln and Guba (1985) to establish the trustworthiness of the study. The credibility was established through triangulation and member checking, while the transferability was achieved through the thick description. Field notes were made throughout the study to achieve dependability, and the advisory team provided their expertise as auditors. Confirmability of the analysis was established by using an analysis audit trail and method triangulation that included both the individual in-depth interviews and FGDs.

Ethical Considerations

This study was approved by the Ethics Review Board of the Nakhon Phanom University, Thailand (Approval number Full-40/62 Exp.). The data collection procedures were carefully designed to protect confidentiality. All potential participants were informed verbally and in written form about the study methods, potential risks and benefits of participation, and the duration of the study. All potential participants were also informed that their participation was voluntary, and they had the right to refuse or withdraw from the study at any time without impact on them. Once they agreed, the students and

their parents were asked to sign a written informed consent. Participants' confidentiality and anonymity were guaranteed throughout the research.

Results

There were three categories: 1) causes of suicide, 2) prevention of suicide and 3) learning needs of preventing suicide (Table 1).

Category 1: Causes of suicide

Seven sub-categories were identified as causes of suicide among secondary school students, including parents' expectations of children's academic achievement, bullying, family problems, teenage love, lack of stress management skills, imitation behavior on social media, and substance use behavior.

Sub-category 1.1: Parents' expectations of children's academic achievement

Most participants revealed that the expectations on the students' academic achievement from parents led to increased stress, emotional tensions, and disappointment of unmet expectations. Some of the students also stated that they were unable to discover their skills and talents as they must live up to parents' expectations that cause mental health problems, such as hopelessness, despair, and stress. Moreover, it can lead to depression as well as being a significant factor for suicidal behavior in secondary school students.

This category relates to families with most people in this study working mainly in farming since most parents are poor, they put all their hopes on their children. They have a strong desire for their children to study well, get a job and look after them in the future. It would seem some parents expect and put their children under too much pressure. Sometimes children also want to do something else apart from academic studies. Furthermore, they are pushed to achieve high scores, which could lead to increased stress and even depression. One student stated:

"If children cannot do it, they will get rebuked by their parents." (Male student volunteers, No. 01)

A female student describes the following experience of a friend, which highlights the significance of family pressure:

"When I was in Mattayom 4 [Grade10], I had one classmate. He got poor scores on his exams and was transferred to another classroom. His father was furious. He scolded his son about the low grade and classroom transfer. In my opinion, his parents are very strict as my classmate must do what his parents wanted him to do, and he was not allowed to play outside with friends. Eventually, he ended his own life with a gun. His close friend said that his father put too much pressure on him to get a good grade and other things. Finally, he couldn't stand it and then committed suicide." (Female student volunteers No. 06)

Sub-category 1.2: Bullying

Most student volunteers revealed that bullying behaviors among a group of friends could be described as both physical and verbal. Bullying in school has considerably affected students' lives and can cause negative behaviors, such as

skipping classes or dropping out of class. In addition, some students stated that secondary school students who were bullied were more likely to suffer from sadness or hopelessness that might lead to a higher risk of suicidal ideation and risk behaviors. The following participants described the impact of bullying on adolescents and how it turned into thoughts of self-harm:

"Being bullied is one of the viral factors that cause adolescents to overthink and die by suicide. While I was taunted about my imperfections, for example, weight or appearance, I felt hurt and wanted to remove all these things from my body. It appears that weaklings always get bullied, extorted, and do other stuff. Consequently, I have pent-up all feelings and tried to get them off my chest by self-harm sometimes." (Male student volunteers No. 02)

"Because I was different from others and had no friends, the bullying happened to me. The situation was getting worse day by day. I couldn't take this and might kill myself. I was bullied excessively. Sometimes it made me feel embarrassed and got hurt. I ignored those who bullied me at first, but they kept saying bad things about me, and more than that, I was physically assaulted. It was really bad for me. I didn't know why I should go to school if I was bullied there. I could see no way out because I had no friends. I was unhappy." (Female student volunteers No. 09)

Sub-category 1.3: Family problems

Most students revealed that family problems, such as parental arguments, separation, financial issues, including spending less time with children, caused a lack of effective communication among family members. This leads to children not speaking to parents about their needs, potentially resulting in underprivileged children. These problems can affect students' thoughts and emotions which may produce stress, frustration, or depression. Moreover, students may have suicidal thoughts or suicide attempts. The following students described this category:

"Whenever my parents get into a fight, I am so annoyed. Actually, they broke up once, but they keep fighting each other all the time. I saw my father hit my mother. It was me who tried to stop him and moved him off of her. Every time they fight over things, I feel extremely annoyed. I hope to finish school soon. I can't wait to study at university and live on my own. I don't want to come back home and face the same situation. I am tired of this thing." (Female student volunteers No. 06)

"A parental separation is mainly caused by problems that occur in the family. This may be a reason why children often go outside and don't want to stay home. They rely on friends more than their parents as well. One of my friends told me that when she visited cousins on her father's side, she felt unwelcomed and got bullied. Those cousins said she was addicted to drugs and got around; unfortunately, her father believed in that accusations and hit his daughter. My friend had thoughts about dying, just only dying. She slit her wrists and could get hit by a car." (Male student volunteers No. 08)

Some students mentioned hurtful verbal communication between parents and teens that influenced students' thoughts and feelings, leading to suicidal ideation in students.

"My parents have no time for me. I feel like I don't get enough love and attention from them. Besides, our family has a lot of debts. I know my parents are stressed out, and I feel it too." (Male student volunteers No. 05)

"When my father comes home, he often starts a fight. Even I did nothing, and he was shouting at me and destroying things. So I feel really upset and question myself that why my father is doing like this;

why he is not like other parents. It makes me feel stressed, and I don't want to live like this anymore." (Female student volunteers No. 09)

Sub-category 1.4: Teenage love

Students expressed that when teenagers were in a relationship, it was defined as an "innocent love or a puppy love." Being in a relationship with someone could be a wonderful time. On the other hand, when it comes to a breakup, it could cause all kinds of stressful emotions and lead to thoughts of ending one's life. Some students stated that students who faced the problem might think about suicide and make an attempt to do it. Some can cut their wrists to express feelings of sadness. The following participants described this category:

"As a teenager, our love was so innocent. But we were too young; it took a short time to break up, and it was terribly sad. So at that time, we broke up, we felt like we weren't good enough that made it stressful, and we had thoughts of dying by suicide." (Male student volunteers No. 04)

"When I was seeing someone, I loved her so much and felt like we had been together for years. After we both broke up, I was deeply sad and didn't want to live anymore. Because she left me, I ended up taking my own life by hurting my wrists." (Male student volunteers No. 08)

Sub-category 1.5: Lack of stress management skill

Most of the student volunteers described that they frequently faced issues by running away from problems or not ventilating about them. Furthermore, some of them were too afraid to talk about the problem with their parents and did not know a proper way to deal with it. Some described that they had no one to talk to and share their feelings. This problem may lead to a risk of suicidal ideation and suicide attempts. The following participants stated:

"I don't want to talk to anyone. I prefer isolating myself from other people. Sometimes, I am afraid to talk to my friends and feel like there is no one I can ask for support. I think about committing suicide." (Male student volunteers No. 04)

"One of my friends was in trouble, but she didn't dare to tell a class teacher as she thought she was not that close. So, I told her to talk with a guidance counselor who could help and give her advice. However, I was not so sure if she had already told the teacher." (Female student volunteers No. 10)

Sub-category 1.6: Imitation behavior on social media

Most of the students revealed that imitation behavior on social media influenced students to compare themselves to people they saw on social media, especially high profile' superstars. Some of them considered those superstars as role models or spiritual anchors in their life. If those superstars had taken their own life, they would feel deeply sad for the loss of people they admired. In addition, some students stated that living an unhappy life can lead to depression and suicidal behavior. The students stated:

"Comparing ourselves to what we saw in the cyber world makes us feel depressed subconsciously. If we consume negative media content, it may influence our thoughts and actions, bringing about bad things. While being on social media, it seems that we create isolation from the actual world as we don't speak to anyone. Thus, it makes us feel stressed." (Female student volunteers No. 05)

"I realized that many Korean pop stars have suffered from depression because of online criticism and negative feedback. For example, I was a big fan of one band, which comprised four members. The first member, known as xxx, decided to end his life...I was shocked, but I understood that it was heartbreaking to lose someone we loved.... When losing them, their fans might feel like they lost broken parts and didn't want to live anymore. They couldn't be happy without people they loved. That can be the reason why some fans died by suicide. I think it is absolutely true if we lose someone so important to us and there is no one left, we may end it all." (Female student volunteers No. 10)

Sub-category 1.7: Substance use behavior

The students indicated that substance use behavior began from cigarette smoking followed by other substances, for example, amphetamines. Some of them stated that using too many substances or the wrong way could cause significant problems such as being arrested or physical and mental health illnesses. The students expressed this:

"Cigarette smoking is a bad habit that good students don't do. Smokers are more likely to try using other drugs. If students take drugs, they can get caught red-handed and don't know what to do. Eventually, they might kill themselves." (Male student volunteers No. 01)

"The use of drugs, for example, amphetamine, can cause mental health issues including anxiety, hallucination, and other problems. Some people feel frightened about things around them. Moreover, it also occurred in my village in which someone addicted to drugs and took his own life like this." (Male student volunteers No. 04)

Category 2: Prevention of suicide

There are five main sub-categories related to the prevention of suicide for secondary school students, including peer support, parental support, school support, health professionals and significant person support, and knowing the value and believing in self (self-awareness and self-worth).

Sub-category 2.1: Peer support

Most students revealed that support from friends has an essential role in preventing suicide for adolescents because they spend most of their time with friends rather than family. Some of the students reported that friends significantly influence a students' life, and having friends who always provide support, encouragement, counseling, and are be able to keep others' secrets can help prevent suicide among students. The students expressed:

"From my point of view, many teenagers are addicted to their friends, and they are likely to open up to friends more than family. When they are under stress thanks to family problems or whatever, they'd rather spend time with friends. It's fine if we have good friends. On the other hand, bad friends can bring us unhealthy or dangerous risks such as drug addiction. Sometimes I can't talk to my parents about my problem, but I feel more comfortable talking to my friends. They listen to me, and then we share opinions on how to solve the problem." (Male student volunteers No. 08).

"When things happen, my friends always stay by my side. They listen to my problems, try to understand me, as well as give me support and encouragement. Importantly, they keep my secrets. Besides, when I share my feelings with friends, I feel so comfortable and relieved. It looks like I get something off my chest. Also, they have a positive impact on my attitude and study outcomes. I am glad to have friends like them." (Female student volunteers No. 09)

Sub-category 2.2: Parental support

Most students indicated that family members are essential to suicide prevention in secondary school students. Some students stated that family could help increase protective factors for their children, such as providing encouragement and support, creating a warm environment, finding solutions, and monitoring the person during the period of crisis. The students expressed this:

"When I was a kid, I dreamed of being a doctor. Since we're growing up every day, I keep changing my mind about my future career. Currently, I want to be a deputy district chief, so I'm planning to study in the faculty of Political Science. I talked with my parents about it and asked them what they think if I decide to study in this field. They said just go for it, and they'll support every path I choose. Besides, when I was a Mattayom 3 student, I did a lot of things to discover myself, such as playing guitar, playing sports, and so on. It was my parents who bought me the guitar. I think I am really lucky to have them." (Male student volunteers No. 08)

"For me, family is the people who instruct, understand, and care about their children most. Parents should spend quality time with their children or participate in activities together like having meals or watching movies, including fostering a loving and comfortable environment. They can simply ask their children how their day has gone. Moreover, they have to build a positive sense of self-worth for their kids so that it will help lift them up when they are depressed." (Female student volunteers No. 09)

Sub-category 2.3: School support

Most students informed that teachers are like second parents and school teachers play an important role in suicide prevention among students by providing counseling, monitoring behavior, and giving proper guidance to keep the students safe from suicide. Students stated:

"In my school, a guidance teacher announced all students who experienced depression or who are stressed could come to talk with her anytime. ...the school teacher should pay close attention to students and report to the guidance teacher when spotting signs of depression or risk behaviors." (Male student volunteers No. 04)

"School teachers are always supportive. Besides parents, teachers are someone with whom students can comfortably talk and share stories.... For me, I'd say teachers are my second parents because they understand me well and teach me without prejudice...teacher who

teaches me concerning essential life skills such as real-world skills, interaction skills, always stays by my side, gives me support as well as makes me feel better when I am under stress..." (Male student volunteers No. 08)

Sub-category 2.4: Health professionals and significant person support

The students mentioned that support and assistance from health professionals have essential persons in protecting adolescents from suicide. Some students stated that care and encouragement from loved ones could reduce the risk of suicide in students. This is expressed by the students:

"A psychiatrist will help us manage our mental health and wellbeing." (Male student volunteers No. 02).

"A psychologist specializes in this field. It's like when we share problems with our parents, but it's beyond their ability, so they take us to see the psychologist. In the worst case, a social worker can also help... moreover, for me my beloved aunty, a sister who always care and stay beside me when I am facing with the worse circumstantial in life..." (Female student volunteers No. 09)

Sub-category 2.5: Knowing the value and believing in self (self-awareness and self-worth)

Most students expressed that having self-awareness and self-worth is critical to preventing suicide among secondary school students. The students said:

"Life is important. It all depends on how we look at things and gets better if we receive support from people around us.... some people are upset when things go wrong. However, if people figure out what they exactly want to do, they can do it well because they are passionate about it. So, I think if we have a chance to do something great in life, just go for it. One day we will succeed...we might not even think about suicide." (Male student volunteers No. 08)

"For me, if I were a positive person, I could overcome any obstacles. Being positive can help us feel better as we will become a person who can think positively in all situations and encourage ourselves by saying "Don't worry. It's fine. I did a great job", something like that. On the other hand, if we focus on negative things and ignore what others say, we might get too much stressed and end up with suicide. Therefore, we should stay positive, value ourselves, and appreciate how far we have come from where we started. Don't let the bad things bring us down because we are the best." (Female student volunteers No. 09)

Table 1 Categories and sub-categories of student perspectives toward suicide prevention

Categories	Sub-categories
Causes of suicide	<ul style="list-style-type: none"> • Parents' expectations of children's academic achievement • Bullying • Family problems • Teenage love • Lack of stress management skill • Imitation behavior on social media • Substance use behavior
Prevention of suicide	<ul style="list-style-type: none"> • Peer support • Parental support • School support • Health professionals and significant people support • Knowing the value and believing in self (self-awareness and self-worth)
Learning needs for preventing suicide	<ul style="list-style-type: none"> • Developing online learning platforms regarding suicide prevention • Mental health promotion and prevention projects in school

Category 3: Learning needs of preventing suicide

Most students revealed that developing an online learning platform regarding suicide prevention and mental health promotion and prevention projects in school may help prevent future suicide.

Sub-category 3.1: Developing online learning platforms regarding suicide prevention

The students reported that developing online learning platforms for raising awareness about suicide prevention may help prevent future suicide among students. They expressed:

"It might be a good idea if we have an online support community for depression and suicide where provides useful information, shares experiences, and discusses coping skills." (Male student volunteers No. 05)

"I think the media can be videos that provide an overview of what depression is, including causes, symptoms, treatment, and prevention. If it's too much to handle, we should see a psychiatrist. He may prescribe medicines to treat our mental health. Another interesting idea is to set up a hotline number to allow people to get immediate support and advice from experts." (Female student volunteers No. 10)

Sub-category 3.2: Mental health promotion and prevention projects in school

The students stated that implementing mental health promotion projects in school by giving students knowledge about suicide prevention and teaching students how to manage stress, solve a problem, and respond to bullying in school can help students reduce the risk of suicide behaviors. This is expressed by the participants:

"Educate all students, especially those at high risk, concerning depression and how to prevent ourselves access to means for suicide." (Male student volunteers No. 01)

Furthermore, some students expressed that suicide risk behavior and prevention training designated for students, parents, and schools can also help to prevent suicide in students.

"From my point of view, schools have to organize activities such as training, workshop, or camp to raise awareness and provide insights on depression, including allowing students to think and speak out." (Female student volunteers No. 10)

Discussion

This is the primarily qualitative study of students toward suicide prevention in secondary school students in Renu Nakhon district, Nakhon Phanom, North Eastern, Thailand. This study provides a rich description of significant causes of suicide from secondary school students' perspectives. It is in line with [Grimmond et al. \(2019\)](#) stated that adolescent suicide has multiple factors related to various causes and risk factors that interact with one another.

Some of the study findings are also consistent with the study investigated by [Chaniang et al. \(2019\)](#), who explored perceptions of adolescents, teachers, and parents towards causes and prevention of suicide in secondary school students in Chiang Mai. However, this study found another different cause of suicide, bullying, as one of the causes of an

increased level of risk factors that influence suicidal behaviors among secondary school students, which is consistent with [Cooper et al. \(2012\)](#) and [Kim and Leventhal \(2008\)](#).

Moreover, this study showed that teenage romance is a common source of stress leading to adolescent suicide, particularly when it results in the breakdown of the relationships, which is consistent with [Orri et al. \(2014\)](#) and [Sukhawaha et al. \(2016\)](#). Our study also discovered that imitation behavior on social media is the cause of secondary school student suicide and plays a significant role in preventing suicide for students. This is in line with the study conducted by [Robinson et al. \(2016\)](#) and [Patton et al. \(2014\)](#). Furthermore, our study finding was consistent with the study of [Boonyamalik \(2005\)](#), showing that substance use is considered one of the main factors linked to suicidal behavior among high school students.

This study also provides nurses and healthcare professionals strategies regarding suicide prevention among secondary school students in Thailand. First, most of the students mentioned that peer support is significant to an adolescent's life, which is congruent with [Pfeiffer et al. \(2019\)](#). Second, parental support is essential for preventing suicide. Parents can help increase protective factors for their children, such as providing encouragement and support, which is consistent with [Walls et al. \(2014\)](#). Third, most students also mentioned that school teachers are like their second parents; thus, they play an important role in suicide prevention among students by providing counseling, monitoring the students' behavior, and giving proper guidance to keep the students safe from suicide, which is consistent with [Shilubane et al. \(2015\)](#). Fourth, health professionals' and significant others' support can be particularly helpful in preventing suicide, which is in line with [Holliday and Vandermause \(2015\)](#). In addition, knowing the value and believing in self is a protective factor that can help and protect adolescents from the risk of behavior and suicide, which is congruent with [Matel-Anderson and Bekhet \(2016\)](#). Also, the findings of this study suggest the development of an online learning platform regarding secondary school students' suicide prevention, or an app as done by a previous study for depression and suicide ([Dwidiyanti et al., 2021](#)), and conducting mental health promotion and prevention projects in schools, especially regarding warning signs of suicide, access to help, and who should receive it.

However, as this study was conducted among the secondary school students living in Renu Nakhon district, Nakhon Phanom Province, Thailand; therefore, the finding might not fully capture the cultural diversity across Thailand nor represent a larger population of adolescents.

Conclusion

This study provided information and understanding of the students' perspectives towards causes and preventions of suicide as well as the needs for suicide prevention. The findings could be used as baseline information for health care providers, especially school nurses and mental health and psychiatric nurses, to design and develop effective programs and strategies for reducing causes and enhancing protective factors related to suicide among secondary school students.

Declaration of Conflicting Interest

The authors declare no conflict of interest in this study.

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All authors equally contributed in every stage of the study.

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Data Availability

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

References

- Boonyamalik, P. (2005). *Epidemiology of adolescent suicidal ideation: Roles of perceived life stress, depressive symptoms, and substance use*. (Doctoral Dissertation), The Johns Hopkins University. ProQuest Dissertations Publishing. Retrieved from <https://www.proquest.com/>
- Centers for Disease Control and Prevention. (2020). *CDC releases 2019 youth risk behavior survey results*. Retrieved from <https://www.cdc.gov/healthyyouth/data/yrbs/feature/>
- Chaniang, S., Fongkaew, W., Sethabouppha, H., Lirtmunlikapom, S., & Schepp, K. G. (2019). Perceptions of adolescents, teachers and parents towards causes and prevention of suicide in secondary school students in Chiang Mai. *Pacific Rim International Journal of Nursing Research*, 23(1), 47-60.
- Chaniang, S., Meuangkhwa, P., & Klongdee, K. (2020). Factors related to suicide risk behaviors among secondary school students in Nakhon Phanom Province. *Journal of the Police Nurses*, 12(1), 28-35.
- Cooper, G. D., Clements, P. T., & Holt, K. E. (2012). Examining childhood bullying and adolescent suicide: Implications for school nurses. *The Journal of School Nursing*, 28(4), 275-283. <https://doi.org/10.1177%2F1059840512438617>
- Dwidiyanti, M., Munif, B., Santoso, A., Rahmawati, A. M., & Prasetya, R. L. (2021). DAHAGA: An Islamic spiritual mindfulness-based application to reduce depression among nursing students during the COVID-19 pandemic. *Belitung Nursing Journal*, 7(3), 219-226. <https://doi.org/10.33546/bnj.1494>
- Grimmond, J., Kornhaber, R., Visentin, D., & Cleary, M. (2019). A qualitative systematic review of experiences and perceptions of youth suicide. *PloS One*, 14(6), e0217568. <https://doi.org/10.1371/journal.pone.0217568>
- Holliday, C., & Vandermause, R. (2015). Teen experiences following a suicide attempt. *Archives of Psychiatric Nursing*, 29(3), 168-173. <https://doi.org/10.1016/j.apnu.2015.02.001>
- Kim, Y. S., & Leventhal, B. (2008). Bullying and suicide: A review. *International Journal of Adolescent Medicine and Health*, 20(2), 133-154. <https://doi.org/10.1515/IJAMH.2008.20.2.133>
- Kittiteerasack, P. (2012). Trends and assessment of suicidal behavior (in Thai). *Thai Journal of Science and Technology*, 20(5), 468-477.
- Lambert, V. A., & Lambert, C. E. (2012). Qualitative descriptive research: An acceptable design. *Pacific Rim International Journal of Nursing Research*, 16(4), 255-256.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. California: Sage Publication.
- Matel-Anderson, D. M., & Bekhet, A. K. (2016). Resilience in adolescents who survived a suicide attempt from the perspective of registered nurses in inpatient psychiatric facilities. *Issues in Mental Health Nursing*, 37(11), 839-846. <https://doi.org/10.1080/01612840.2016.1193578>
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks: Sage.
- Orri, M., Paduanello, M., Lachal, J., Falissard, B., Sibeoni, J., & Revah-Levy, A. (2014). Qualitative approach to attempted suicide by adolescents and young adults: The (neglected) role of revenge. *PloS One*, 9(5), e96716. <https://doi.org/10.1371/journal.pone.0096716>
- Patton, G. C., Coffey, C., Romaniuk, H., Mackinnon, A., Carlin, J. B., Degenhardt, L., . . . Moran, P. (2014). The prognosis of common mental disorders in adolescents: A 14-year prospective cohort study. *The Lancet*, 383(9926), 1404-1411. [https://doi.org/10.1016/S0140-6736\(13\)62116-9](https://doi.org/10.1016/S0140-6736(13)62116-9)
- Pfeiffer, P. N., King, C., Ilgen, M., Ganoczy, D., Clive, R., Garlick, J., . . . Ahmedani, B. (2019). Development and pilot study of a suicide prevention intervention delivered by peer support specialists. *Psychological Services*, 16(3), 360-371. <https://psycnet.apa.org/doi/10.1037/ser0000257>
- Renu Nakhon Hospital. (2021). *Case report statistic of the outpatient department from 2016-2021*. Nakhon Phanom: Renu Nakhon hospital.
- Robinson, J., Cox, G., Bailey, E., Hetrick, S., Rodrigues, M., Fisher, S., & Herrman, H. (2016). Social media and suicide prevention: A systematic review. *Early Intervention in Psychiatry*, 10(2), 103-121. <https://doi.org/10.1111/eip.12229>
- Rungsang, B., & Chaimongkol, N. (2017). The prevalence of suicidal ideation among high school students in Thailand and its potential related risk factors. *Thai Pharmaceutical and Health Science Journal*, 12(1), 31-35.
- Shilubane, H. N., Bos, A. E. R., Ruiter, R. A. C., van den Borne, B., & Reddy, P. S. (2015). High school suicide in South Africa: Teachers' knowledge, views and training needs. *BMC Public Health*, 15(1), 1-8. <https://doi.org/10.1186/s12889-015-1599-3>
- Sukhawaha, S., Arunpongpaissal, S., & Rungreangkulkij, S. (2016). Attempted suicide triggers in Thai adolescent perspectives. *Archives of Psychiatric Nursing*, 30(3), 334-341. <https://doi.org/10.1016/j.apnu.2015.12.005>
- Thanoi, W., Phancharoenworakul, K., Thompson, E. A., Panitrat, R., & Nityasuddhi, D. (2010). Thai adolescent suicide risk behaviors: Testing a model of negative life events, rumination, emotional distress, resilience and social support. *Pacific Rim International Journal of Nursing Research*, 14(3), 187-202.
- Walls, M. L., Hautala, D., & Hurley, J. (2014). "Rebuilding our community": Hearing silenced voices on Aboriginal youth suicide. *Transcultural Psychiatry*, 51(1), 47-72. <https://doi.org/10.1177%2F1363461513506458>
- World Health Organization. (2020). Adolescent mental health. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>
- Zalsman, G. (2012). Genetics of suicidal behavior in children and adolescents. In D. Yogesh (Ed.), *The neurobiological basis of suicide*. Boca Raton, FL: CRC Press/Taylor & Francis.

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Healthcare professionals' opinions regarding health coaching for patients with diabetes: A pilot exploration in Indonesia

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Abstract

Background: Diabetes management is applied for the entire patients' lives, so it requires lifelong sustainable self-management actions to have a positive impact. Integrated care as coaching intervention is considered a program that facilitates and supports patients in managing diabetes more effectively and optimally. However, there are limited studies regarding this program in Indonesia.

Objective: This study aimed to explore the opinions of healthcare professionals concerning the importance of health coaching for patients with diabetes in Indonesia.

Methods: An invitation letter via email was distributed individually to participants from the three provinces of Java, Indonesia, between June and August 2020. The open-ended questions that consist of two sections were developed to explore the matter related to health coaching for patients with diabetes. A descriptive analysis of the participants' answers was used to explain the data comprehensively and accurately reveal the complete information.

Results: A total of seven healthcare professionals from four professions participated in the study. Based on healthcare professionals' opinions, this study revealed that the most common reason health coaching needs to be implemented is related to self-management in dealing with diabetes. Health coaching as a tailored-intervention strategy in diabetes self-management requires a multidisciplinary approach and considers the local wisdom to achieve the expected goals in all aspects of patients' lives. Thus, health coaching as an integral part of diabetes self-management is considered an appropriate program to cope with this problem.

Conclusion: Health coaching for patients with diabetes is useful and reasonable to implement among patients with appropriate strategies, especially in Indonesia and beyond.

Keywords

diabetes; health coaching; healthcare professional; self-management; nursing; Indonesia

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Background

Individual diabetes management, or called self-care or self-management, is a program that handles and manages diabetes to be carried out by patients independently with the aim of preventing or reducing complications and improving the quality of life. In Indonesia, diabetes management is known for its five pillars, including education, nutrition management, physical activity, medication management, and glycemic control (Indonesian Endocrinology Association, 2015).

Diabetes management is applied to the entire life of patients, so it requires lifelong sustainable self-management actions to be successful and give a better result in life. Indeed, a previous publication revealed that self-management behaviors that can be influenced by support from either family

members or health workers are strongly associated with HbA1c (Thoijampa & Acob, 2020). These supports are involved in maintaining a healthy lifestyle and optimizing diabetes management.

A study looked into patients with diabetes who did not comply with strategic management summarized in the five pillars of diabetes management (Wong-Rieger & Rieger, 2013). Unfortunately, patients are less likely to follow and adhere to the recommendations given, thus resulting in uncontrolled diabetes. Moreover, patients need long-term support to self-manage their health conditions, but limited healthcare services are available. Therefore, such a program that facilitates this activity is needed as a solution.

Globally, supporting activities that help patients change their health behaviors are often known as health coaching. This is a kind of integrated care intervention implemented in

healthcare services. Health coaching is a process that focuses on involving individual patients to identify and achieve health goals through education and individual support (Kivelä et al., 2014; Palmer et al., 2003). It also helps patients increase their awareness to optimize individual potency regarding their health status.

One study has shown that health coaching can significantly improve the self-management behaviors of patients with chronic diseases (Kivelä et al., 2014). Therefore, health coaching is considered a program that facilitates and provides support to patients in managing diabetes more effectively and optimally. However, other studies have stated that patient participation in health coaching activities is influenced by barriers of communication, knowledge, and beliefs (Burton & Thompson, 2018; Thom et al., 2015).

Health coaching is an individually tailored intervention that needs to be applied to manage patients' symptoms and complaints (Hermens et al., 2014; Héroux et al., 2017; Vanacker et al., 2017). Patients with diabetes need to work together with a healthcare team that compiles a treatment plan in a healthcare facility. However, there are limited studies regarding health coaching in Indonesia. The latest quasi-experimental study revealed that patients with type 2 diabetes have an improvement in metabolic markers and implement self-management in daily life when they follow the self-management-based coaching program (Pamungkas & Chamroonsawasdi, 2020). Assisting the patients to deal with the problem is necessary for an appropriate strategy to apply for this program.

Nowadays, the implementation of health coaching in Indonesia has not been sufficiently developed. There is no standardized regulation published by the government regarding health coaching implementation. The specific programs that are applied are reported to be less effective in reducing the glycated hemoglobin levels of diabetes patients (Rosdiana et al., 2017). Moreover, several studies have shown various problems regarding dietary adherence, physical activity, and control of blood glucose in diabetic patients (Chairani & Dk, 2018; Gajati & Kusumaningrum, 2020; Rachmawati & Kusumaningrum, 2017). These problems occur not only in Indonesia but also worldwide (Crichton et al., 2013; Iversen et al., 2015; Knight et al., 2016; Ram et al., 2014). However, Indonesia's various ethnicities, cultures, beliefs, and socioeconomic levels may influence the implementation of the program in the country. Therefore, this study aimed to describe the importance of health coaching for patients with diabetes based on the opinions of healthcare professionals in Indonesia.

Methods

Study Design

This was a pilot exploration study focusing on identifying healthcare professionals' opinions on the importance of health coaching in diabetes management. In addition, an instant study protocol was conducted to a small-scale version of the complete survey was tested, from patient recruitment to data analysis.

Participants

A purposive sampling strategy was piloted to recruit participants. The sample size in this study was set at 3–80 participants as a recommendation from three professions (Grisham, 2009; Mullen, 2003). The characteristics of participants were determined on the basis of some considerations, including profession type, work duration with diabetes, and institution-based occupation.

To recruit healthcare professionals, including doctors, nurses, nutritionists, psychologists, and pharmacists who are interested in diabetes care, the diabetes educator association has been contacted as the responsible working group. However, because of difficulties in recruiting, each probable participant was contacted individually. As a result, the researchers agreed to enroll seven healthcare professionals from different professions. This study involved participants from the three provinces of Java, Indonesia, including East Java, Central Java, and DI Yogyakarta.

Data Collection

An invitation letter via email was distributed to participants individually between June and August 2020. The letter informed about the study and assured that all data would be kept confidential. After approving the written informed consent by signing the online consent form, participants directly answered all questions provided in google form links, consisting of open-ended questions exploring their opinion.

The open-ended questions were developed to guide the exploration of issues related to health coaching for patients with diabetes. It was divided into two sections pertaining to 1) participants' professional profiles and 2) healthcare professionals' opinions regarding health coaching for patients with diabetes. Indeed, researchers focused on ensuring that the interview questions were constructed to answer the research question. Each researcher reviewed the questions relating its language, wording, and relevance. The questions required self-completion by participants and verified whether it was comprehensible and appropriate to address the research question. The key points of healthcare professionals' opinions related to health coaching questions are described in Table 1.

Table 1 Key point of questions to explore the opinions

Questions
Why does health coaching for patients with diabetes need to be implemented?
What kind of action need to be undertaken in health coaching for patients with diabetes?
Who is involved in health coaching for patients with diabetes?
When and where is the health coaching for patients with diabetes applied?
How to proceed with the health coaching for patients with diabetes?

All comments were taken into consideration, then texting or messaging was performed to clarify participants' answers when needed. Errors were modified to get a clear understanding, as well as no further changes were considered necessary.

Data Analysis

All data were collected in excel form based on the answers entered in the google form. The analysis was mainly

descriptive, with data about the profession, duration of work with diabetes, and institution-based occupation, that analyzed for the frequency distribution, mean, minimum, and maximum values. In addition, a descriptive analysis of the participants' answers based on questions was used to provide a comprehensive explanation of the data and accurately reveal the complete information. The process involved the authors reading the answered contents, classifying data, examining the collected data, doing a detailed analysis of each answer, and combining all contexts comprehensively.

Trustworthiness/ Rigor

The rigor and trustworthiness in qualitative research could be conducted by triangulation, member checking, detailed transcription, and systematic plan and coding (Gunawan, 2015). In order to provide trustworthiness in this study, peer checking by an experienced colleague to re-analyze some of the data was performed. The peer reviewer involved in this study was a certified nurse who has the content expertise related to coaching and patient-centered care. He voluntarily acted as a reviewer of the project that critically evaluated the results.

Ethical Considerations

This was a part of the bigger study regarding the analysis and application of comprehensive diabetes health coaching in healthcare facilities that have been reviewed by The Ethics Committee of Health Research, Department of Nursing, Faculty of Medicine, Diponegoro University (Number: 107/EC/KEPK/D.Kep/VI/2020). Written online informed consent was also obtained from each participant who was willing to participate in this study.

Results

Characteristics of the Participants

A total of seven healthcare professionals from four professions in the health area willingly participated in this study. Details of the healthcare professionals who participated in this study are provided in Table 2. The professionals included a nurse, nutritionist, psychologist, and pharmacist whose work is related to diabetes for an average of 16.57 ± 10.91 years. In addition, more than half of the participants have been working in a university or education field (57.14%).

Table 2 Profile of the participants ($n = 7$)

Characteristics	Frequency	Percentage
Profession		
Nurse	2	28.57
Nutritionist	2	28.57
Psychologist	2	28.57
Pharmacist	1	14.29
Duration of work with diabetes		
(mean \pm SD, years)	16.57 ± 10.91	
Min	7	
Max	35	
Institution-based occupation		
Education	4	57.14
Hospital	2	28.57
Primary care	1	14.29

Healthcare Professionals' Opinions

Five themes based on the open-ended questions were established to decode the healthcare professionals' opinions. These themes included the reasons for health coaching for patients with diabetes, activities in health coaching for patients with diabetes, the person involved in health coaching for patients with diabetes, when and where is the health coaching for patients with diabetes applied, and the way to proceed health coaching for patients with diabetes.

The reasons for health coaching for patients with diabetes

The perception of the importance of health coaching for patients with diabetes varies among professionals. They are perceived as important to very important. Here, most healthcare professionals revealed that self-management to dealing with diabetes is the main reason this program is considered very important. A dietician stated:

The health coaching program is very important. Patients should know and understand their disease so that they can manage their condition. I think this is why the program should be implemented. (Dietician 2)

Furthermore, most healthcare professionals also described that health coaching for patients with diabetes should be applied nationally. They mentioned why health coaching should collaborate with other organizations that focus on diabetes. A nurse mentioned:

This program is expected may be easier to implement if it becomes part of national diabetes management policy, which is to guide and direct diabetes management application by healthcare professionals. Diabetes educator organization or committee needs to synergy in applying for this program and guarantee its continuity. (Nurse 1)

Despite most of the positive reactions toward health coaching programs, for some reason, a healthcare professional disagreed that health coaching needs to be integrated into another program nationally.

Actually, there was a national program that was implemented by the Diabetes educator organization or committee. ... this health coaching is much better implemented using its own design and characteristic. (Nurse 2)

The importance and reason of this program were clearly stated by all participants. They were excited that health coaching could be applied simultaneously. Moreover, these health professionals emphasized that the program should be called for.

I think the program is very good. However, what this program is called should be negotiated. (Psychologist 2)

Activities in health coaching for patients with diabetes

Healthcare professionals mentioned that diabetes management, including all aspects related to a healthy lifestyle such as diet, physical activity, medication, blood glucose control, and stress, was the most common problem of patients with diabetes. They also described the need to prevent further complications of diabetes and provide support, which finally will make a better change in health behaviors.

All of the health coaching activities aim to increase the knowledge and skills of patients with diabetes based on personalized learning. Those were planned as tailored-intervention for each patient involved in the action plan. ... including lifestyle improvement, stress management, blood glucose self-monitoring, blood glucose management, and medicine management. Indeed, one of the major aims of this program is improving self-management. (Pharmacist)

Healthcare professionals recommended that the application of health coaching for diabetes patients must be well prepared. Overall, it should involve thorough considerations regarding the necessary steps, including identifying the habits of the local community, which also involves local leaders, and determining the habits of the person to find limitations in providing education.

Dietary arrangements can be adjusted to the tastes of the local culture with food ingredients that are easily found daily at household amounts. (Nurse 1)

There needs to be a food guide for people with diabetes according to the culture or conditions of each area. ...coaching can access difficulties or obstacles in medication and find solutions to the difficulty. (Pharmacist)

Psycho-education needs to be given to patients and their families on the risk of complications if blood sugar conditions are not controlled. Discuss with the patient the best and most comfortable coping program that can be done. ... health coaching focuses on the strong why and willingness of patients that engage them to solve the problem come up in diabetes management. (Psychologist 2)

The person involved in health coaching for patients with diabetes

All healthcare professionals stated the people who are involved in health coaching for patients with diabetes, including all healthcare providers. It was pointed out that doctors, nurses, nutritionists, pharmacists, psychologists, physiotherapists, and social workers, certified in health coaching and have mastered the principles of behavior change may be involved in this program.

All healthcare professionals, who are trained in health coaching, should be involved in giving the optimal facility. (Psychologist 1)

For sure, to be more effective, each healthcare professional should be master in behavior change principles. (Nurse 2)

Additionally, many healthcare professionals mentioned that patients with diabetes who are well-educated and successful in dealing with their condition also need to be involved in health coaching for patients with diabetes as the role model. They suggested that participation can motivate patients to cope with their situation.

Health coaching should be provided by all health care workers in health care services, for example, doctor, nurse, dietician, physiotherapists, pharmacists, and social workers. ... well-educated patients with diabetes also need to involve as a peer group. (Dietician 1)

Time and place of health coaching for patients with diabetes applied

All healthcare professionals reported that health coaching for patients with diabetes should be applied as soon as patients are diagnosed with diabetes. It is also stated that it can be applied earlier when they are diagnosed with pre-diabetes.

The appropriate health coaching for patients should be done when patients are diagnosed with pre-diabetes and confirmed as diabetes. ... as soon as they are diagnosed, health coaching should be applied. (Dietician 1)

To apply health coaching for patients with diabetes, healthcare professionals suggested doing that program at a representative location, in either healthcare services or community settings. Many professionals recommended the program to take place at hospitals, clinics, or public health centers. Importantly, it should occur in a privacy-guaranteed place.

Health coaching should be applied at the representative place, which is comfortable and conducive to discussion, for instance, at patients' homes. (Pharmacist)

In my opinion, health coaching can be done at the hospital, public health center, clinic, or even at home. (Dietician 2)

The way to proceed with health coaching for patients with diabetes

Multidisciplinary approach

Healthcare professionals agreed that health coaching for patients with diabetes is a multidisciplinary intervention. They reported that health coaching is a program that involves various healthcare professionals to achieve the expected targets.

Health coaching is an integrative program. It is proved that multidisciplinary collaboration gives a positive consequence to the patients' goals. (Nurse 1)

All healthcare professionals also need to coordinate and collaborate in this program. Each healthcare professional, as a member of the team, play a role based on their competency and capacity. (Nurse 2)

Intervention strategies

Health coaching can be done individually or in groups at several sessions according to the patients' needs and based on the local and cultural conditions. The periodical meeting will improve the consistency to achieve the target.

Health coaching is appropriate to be implemented individually, one on one, using active listening and motivational interviewing approach. It can be planned periodically, for example, once a month, regularly, and gradually. (Nurse 2)

The individual approach and the small group that consists of 4 – 10 members are suitable to apply the intervention and interact with the patient intensively. (Dietician 1)

... for the adequacy of time, consider the response of the patient. Ideally, a maximum of 1 hour per meeting is sufficient because sometimes, when the concentration-time increases, the patient's attention decreases. (Psychologist 2)

Considering the geographic contour of Indonesia, especially Java, it should be noted that the location where the health coaching is located is important. Various methods, either offline or online, also recommended preventing bored situations between the coach and patients. A face-to-face meeting, phone monitoring, social media, and picnic can be done to modify the process. Many of them also recommended that health coaching can occur in patients' homes or at

community meetings, a traditional convention in Java that is called "*sarasehan*."

I, personally, prefer offline meetings than online. A face-to-face meeting is more effective in evaluating patients' achievements. The health coaching can be held when "sarasehan" in a community meeting. (Dietician 1)

Meeting between the coach and patients can be facilitated by directly meeting or social media. The online method can be done by WhatsApp group or Facebook. ... coach and patients can arrange a picnic as their support to daily patient activities. (Dietician 2)

By phone monitoring is one of the effective ways to intervene and evaluate what kind of activities patients do to manage their condition. (Pharmacist)

The specific topic can be shared online using zoom meeting, Google meeting, or online seminar. (Psychologist 2)

Discussion

The most common reason health coaching needs to be implemented is related to self-management in dealing with diabetes. The implementation of diabetes self-management needs to be carried out throughout the lives of patients with diabetes, so it requires lifelong sustainable self-management actions to have a positive impact. A previous quasi-experimental trial study in Taiwan concluded that health coaching might be an effective strategy to enhance self-management for diabetes patients (Chen et al., 2019). Furthermore, a case presentation also demonstrated that health coaching was successfully applied in alleviating diabetes distress and improving diabetes self-management (Chima et al., 2021). Thus, health coaching as an integral part of lifestyle treatment that benefits to facilitate behavior changes is perceived as an effective health program. Unfortunately, to the best of our knowledge, very limited health coaching information is available in Indonesia.

The implementation of health coaching in diabetes can be done in promotion, preventive, curative, and rehabilitative settings. The promotion and prevention settings are carried out in groups at risk of diabetes, including pre-diabetes people. The purpose is to control the risk factors of individuals, including maintaining a healthy diet, performing adequate physical activities, and performing routine health checks at healthcare services so they will not cause a diabetes incident. Furthermore, the curative and rehabilitation settings are applied to individuals who experience diabetes by managing this disease, including healthy behavioral changes, medication compliance, and blood glucose level control to prevent complications. In terms of health coaching's effect on diabetes control and lifestyle improvement, a randomized controlled trial proved that health coaching may be beneficial to the blood sugar control and healthy diet of patients with type 2 diabetes (Lin et al., 2021).

This study described health coaching as a diabetes management approach involving physical, psychological, emotional, and psychosocial support to prevent complications and improve patients' quality of life. A systematic review and meta-analysis on the effectiveness of health coaching on diabetic patients revealed that mixed results were reported for

the effect of health coaching on quality of life, self-efficacy, self-care skills, and depressive symptoms outcome (Radwan, 2019). It has a significant impact on HbA1c and HDL-C. A further explanation in a pragmatic cluster randomized controlled trial on the effect of a health coach intervention for management of individuals with type 2 diabetes mellitus in China described that both groups displayed a statistically and clinically significant within-group improvement of the same magnitude at 18-months for HbA1c, although it may need to further a rigorous research (Chapman et al., 2018).

Supporting self-management in treating diabetes can be performed by healthcare professionals, family members, friends, and peers that aim to maintain a healthy lifestyle and optimize diabetes management of people with diabetes, which results in increasing the quality of life (Dejonghe et al., 2017). Therefore, people with diabetes need to work with healthcare professionals who have developed a treatment plan for diabetes in health service facilities as part of diabetes health coaching. A previous study stated that coaches in diabetes health coaching should have 23 years of experience handling diabetes mellitus (Bennett et al., 2010). Unfortunately, to our knowledge, there are no health coaching-related programs and training in Indonesia. Also, the development of standards and credentials of professional health coaches has not been arranged yet.

Previous studies stated that health coaching involves all professions of health services, such as doctors, nurses, nutritionists, pharmacists, psychologists, and other healthcare professionals (Jeon & Benavente, 2016; Kohn, 2014; Lenzen et al., 2018). Others studies emphasize collaboration among healthcare professionals in supporting and assisting the patients in coping with their conditions using active listening and motivational interviewing approaches (Linden et al., 2010; Song et al., 2014; Thom et al., 2015). Additionally, healthcare providers collaborate with diabetes patients to develop goals or expectations desired by people with their illnesses, identify their potential that can be developed, make choices, and arrange activity plans to achieve predetermined goals (Johnson et al., 2018).

A study of diabetes patients in Turkey and Denmark concluded that there is a need for health coaching for the management of type 2 diabetes that focuses on multi-disciplinary approaches, including oral health (Cinar et al., 2018). Despite the positive opinion of health coaching, several barriers to its implementation in Indonesia were evident in this study. The government has not implemented a policy regarding standardized health coaching; thus, the application of health coaching is still unclear.

There are various conditions and circumstances that need to be considered in the implementation of this program. Besides, recommendations related to health coaching also vary among studies. The previous study developed a 12-week participatory learning program that consisted of three sessions to increase the patients' understanding of diabetes care (Pamungkas & Chamroonsawasdi, 2020). Moreover, another study recommended that the intervention period ranged from 12 to 48 weeks, and the follow-up period duration was mainly 24 weeks (Dejonghe et al., 2017). However, one study conducted an 18-month health coaching intervention to their participants using motivational interviewing and usual care (Chapman et al., 2018). Based on these explanations,

determining the appropriate time should be considered, especially for a population in a developing country, like Indonesia.

Health coaching focuses on not only medical management but also social management. It involves lifestyle changes and emotional control. The success of achieving goals is determined by all aspects of the patients' lives according to their needs and plans, including bodyweight control, physical activity balancing, dietary fulfillment, and support system maintenance.

In this study, the opinions of healthcare providers describe what happens in the many different perspectives of professions. A behavioral change is the expected outcome after health coaching is implemented. However, their orientation of health coaching implementation mostly still emphasizes the knowledge. Health coaching for patients with diabetes includes not only responding to patients seeking diabetes information but also taking up the challenge of how to self-manage diabetes. This study is consistent with a previous study that stated that health coaching is distinct from health education in terms of the question types (Wolever et al., 2011). Indeed, the questions of health coaching would focus on the client's agenda, whereas health education is more likely to focus on the disease management process.

Health coaching not only educates people in managing their diabetes but also provides a proper solution based on patients' ability and willingness. Education-based programs need to be complemented by self-management support, or called coaching, to change patients' health behaviors (Wong-Rieger & Rieger, 2013). The health coaching process is not given as a lecture but as a part of a dialog between the coach and patients. The principle of non-directive interaction is used as an ideal strategy to facilitate and encourage patients to make an autonomous decision about their health status. Furthermore, various methods and techniques, either by individuals or groups, are recommended to prevent bored situations between the coach and patients. The application of this program is structured individually, tailored according to the complaints, problems, and conditions experienced by the patients.

Implications of the study

Health coaching is a patient-centered process based on behavioral change theory and is delivered by health professionals with multidisciplinary backgrounds (Wolever et al., 2013). Health coaching for patients with diabetes is a health development program as a collaboration between healthcare providers and people with diabetes to control and manage their signs and symptoms. It focuses on facilitating the patients regarding the knowledge, abilities, and skills needed to manage diabetes (Lenzen et al., 2018). Here, the process entails goal setting as determined by patients and a patient-decided approach to disease management (Chen et al., 2019; Wolever et al., 2013).

Collaboration among healthcare professionals can be started by determining the roles and responsibilities of each health profession as a form of involvement in the program implementation and providing technical instructions so that all-important aspects can be planned comprehensively. The previous study demonstrated that nurse-led multidisciplinary team management is an effective intervention for improving

glycemic control, QOL, hospitalization, and help-seeking behavior for people with DM in a community (Ni et al., 2019). In terms of this program, each health worker can conduct health coaching sessions according to a schedule compiled with the patient in accordance with the guidelines that have been mutually agreed upon between all health workers. In addition, a structured and comprehensive patient monitoring program can be created so that health workers can help monitor target achievements and allow technical program adjustments for patients. Finally, using these steps, the healthcare professional team could identify problems for each patient.

Health coaching, as a collaborative approach between healthcare professionals and patients with diabetes, has been implemented to control diabetes and its complications, including the signs and symptoms (Bennett et al., 2010; Howard & Ceci, 2013). Healthcare professionals have five principle roles in conducting health coaching activities in people with diabetes, including (1) providing self-management support, (2) bridging the gap between health workers and people with diabetes, (3) helping direct the health service system, (4) providing emotional support, and (5) establishing sustainable relationships. In addition, each coach is responsible for a certain area, based on their competency.

Limitations and recommendations for future studies

This study has two limitations. To begin with, the standard operating procedure and policy of health coaching have not been appropriately established in Indonesia, although many healthcare professionals claimed that they have already applied for this program. It would be interesting to investigate the perception of patients about this program. Furthermore, the use of purposive sampling may not represent all healthcare professionals in Indonesia. A future study would be enhanced by incorporating a rigorous mixed-method and investigating it further using an adequate theory.

Conclusion

This current study describes healthcare professionals' opinions regarding the importance of health coaching for patients with diabetes. It was clearly stated that health coaching for patients with diabetes is valuable and reasonable to implement with some strategies in Java, Indonesia. Further studies should examine patients' opinions on how health coaching can improve their quality of life.

Declaration of Conflicting Interest

The authors declare that there is no conflict of interest in this study.

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Authors' Contributions

NSDK initiated the concept, writing, and drafting of the data. FYA and DN provided important intellectual content and contributed feedback while writing a manuscript draft. All authors have provided final approval and agreement for all aspects of the work regarding content.

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Data Availability

Due to privacy and ethical concerns, neither the data nor the source of the data can be made available.

References




- Bennett, H. D., Coleman, E. A., Parry, C., Bodenheimer, T., & Chen, E. H. (2010). Health coaching for patients with chronic illness. *Family Practice Management*, 17(5), 24-29.
- Burton, R. A., & Thompson, M. (2018). *What do patients with diabetes think of health coaching? Findings from interviews with health coach clients.* https://www.urban.org/sites/default/files/publication/96336/2001692_c_hw_client_interviews_brief_finalized_2.pdf
- Chairani, F., & Dk, N. S. (2018). Aktivitas fisik pada diabetes di Persatuan Diabetes Indonesia (Persadia) Salatiga [Physical activity in diabetes at Persatuan Diabetes Indonesia (Persadia) Salatiga]. *Jurnal Keperawatan Komunitas*, 2(1), 20-24.
- Chapman, A., Browning, C. J., Enticott, J. C., Yang, H., Liu, S., Zhang, T., & Thomas, S. A. (2018). Effect of a health coach intervention for the management of individuals with type 2 diabetes mellitus in China: A pragmatic cluster randomized controlled trial. *Frontiers in Public Health*, 6, 252. <https://doi.org/10.3389/fpubh.2018.00252>
- Chen, R.-Y., Huang, L.-C., Su, C.-T., Chang, Y.-T., Chu, C.-L., Chang, C.-L., & Lin, C.-L. (2019). Effectiveness of short-term health coaching on diabetes control and self-management efficacy: A quasi-experimental trial [Clinical Trial]. *Frontiers in public health*, 7, 314. <https://doi.org/10.3389/fpubh.2019.00314>
- Chima, C. C., Swanson, B., Anikezie, N., & Salemi, J. L. (2021). Alleviating diabetes distress and improving diabetes self-management through health coaching in a primary care setting. *BMJ Case Reports CP*, 14(4), e241759. <http://dx.doi.org/10.1136/bcr-2021-241759>
- Cinar, A. B., Freeman, R., & Schou, L. (2018). A new complementary approach for oral health and diabetes management: Health coaching. *International Dental Journal*, 68(1), 54-64. <https://doi.org/10.1111/idj.12334>
- Crichton, G. E., Bryan, J., Hodgson, J. M., & Murphy, K. J. (2013). Mediterranean diet adherence and self-reported psychological functioning in an Australian sample. *Appetite*, 70, 53-59. <https://doi.org/10.1016/j.appet.2013.06.088>
- Dejonghe, L. A. L., Becker, J., Froboese, I., & Schaller, A. (2017). Long-term effectiveness of health coaching in rehabilitation and prevention: A systematic review. *Patient Education and Counseling*, 100(9), 1643-1653. <https://doi.org/10.1016/j.pec.2017.04.012>
- Giajati, S. A., & Kusumaningrum, N. S. D. (2020). Konsumsi gizi pada penyandang diabetes mellitus di masyarakat [Consumption of nutrition in people with diabetes mellitus in the community]. *Journal of Nutrition College*, 9(1), 38-43. <https://doi.org/10.14710/jnc.v9i1.26424>
- Grisham, T. (2009). The Delphi technique: A method for testing complex and multifaceted topics. *International Journal of Managing Projects in Business*, 2(1), 112-130. <https://doi.org/10.1108/17538370910930545>
- Gunawan, J. (2015). Ensuring trustworthiness in qualitative research. *Belitung Nursing Journal*, 1(1), 10-11. <https://doi.org/10.33546/bnj.4>
- Hermans, H., op den Akker, H., Tabak, M., Wijsman, J., & Vollenbroek, M. (2014). Personalized coaching systems to support healthy behavior in people with chronic conditions. *Journal of Electromyography and Kinesiology*, 24(6), 815-826. <https://doi.org/10.1016/j.jelekin.2014.10.003>
- Héroux, M., Watt, M., McGuire, K. A., & Berardi, J. M. (2017). A personalized, multi-platform nutrition, exercise, and lifestyle coaching program: A pilot in women. *Internet Interventions*, 7, 16-22. <https://doi.org/10.1016/j.invent.2016.12.002>
- Howard, L. M., & Ceci, C. (2013). Problematising health coaching for chronic illness self-management. *Nursing Inquiry*, 20(3), 223-231. <https://doi.org/10.1111/nin.12004>
- Indonesian Endocrinology Association. (2015). *Consensus of management and prevention of type 2 diabetes mellitus in Indonesia*. Jakarta: PERKEMI.
- Iversen, M. M., Nefs, G., Tell, G. S., Espehaug, B., Midthjell, K., Graue, M., & Pouwer, F. (2015). Anxiety, depression and timing of insulin treatment among people with type 2 diabetes: Nine-year follow-up of the Nord-Trøndelag Health Study, Norway. *Journal of Psychosomatic Research*, 79(4), 309-315. <https://doi.org/10.1016/j.jpsychores.2015.07.004>
- Jeon, S. M., & Benavente, V. (2016). Health coaching in nurse practitioner-led group visits for chronic care. *The Journal for Nurse Practitioners*, 12(4), 258-264. <https://doi.org/10.1016/j.nurpra.2015.11.015>
- Johnson, C., Saba, G., Wolf, J., Gardner, H., & Thom, D. H. (2018). What do health coaches do? Direct observation of health coach activities during medical and patient-health coach visits at 3 federally qualified health centers. *Patient Education and Counseling*, 101(5), 900-907. <https://doi.org/10.1016/j.pec.2017.11.017>
- Kivelä, K., Elo, S., Kyngäs, H., & Kaäriäinen, M. (2014). The effects of health coaching on adult patients with chronic diseases: A systematic review. *Patient Education and Counseling*, 97(2), 147-157. <https://doi.org/10.1016/j.pec.2014.07.026>
- Knight, B. A., Hickman, I. J., Gibbons, K., & McIntyre, H. D. (2016). Quantitative assessment of dietary intake in adults with Type 1 diabetes following flexible insulin therapy education with an active promotion of dietary freedom. *Diabetes Research and Clinical Practice*, 116, 36-42. <https://doi.org/10.1016/j.diabres.2016.03.016>
- Kohn, J. B. (2014). How can registered dietitian nutritionists use health coaching techniques? *Journal of the Academy of Nutrition and Dietetics*, 114(5), 824. <https://doi.org/10.1016/j.jand.2014.03.004>
- Lenzen, S. A., Daniëls, R., van Bokhoven, M. A., van der Weijden, T., & Beurskens, A. (2018). What makes it so difficult for nurses to coach patients in shared decision making? A process evaluation. *International Journal of Nursing Studies*, 80, 1-11. <https://doi.org/10.1016/j.ijnurstu.2017.12.005>
- Lin, C.-L., Huang, L.-C., Chang, Y.-T., Chen, R.-Y., & Yang, S.-H. (2021). Effectiveness of health coaching in diabetes control and lifestyle improvement: A randomized-controlled trial. *Nutrients*, 13(11), 3878. <https://doi.org/10.3390/nu13113878>
- Linden, A., Butterworth, S. W., & Prochaska, J. O. (2010). Motivational interviewing-based health coaching as a chronic care intervention. *Journal of Evaluation in Clinical Practice*, 16(1), 166-174. <https://doi.org/10.1111/j.1365-2753.2009.01300.x>
- Mullen, P. M. (2003). Delphi: Myths and reality. *Journal of Health Organization and Management*, 17(1), 37-52. <https://doi.org/10.1108/14777260310469319>
- Ni, Y., Liu, S., Li, J., Dong, T., Tao, L., Yuan, L., & Yang, M. (2019). The effects of nurse-led multidisciplinary team management on glycosylated hemoglobin, quality of life, hospitalization, and help-seeking behavior of people with diabetes mellitus. *Journal of Diabetes Research*, 2019, 9325146. <https://doi.org/10.1155/2019/9325146>
- Palmer, S., Tubbs, I., & Whybrow, A. (2003). Health coaching to facilitate the promotion of healthy behaviour and achievement of health-related goals. *International Journal of Health Promotion and Education*, 41(3), 91-93. <https://doi.org/10.1080/14635240.2003.10806231>
- Pamungkas, R. A., & Chamroonsawasdi, K. (2020). Self-management based coaching program to improve diabetes mellitus self-management practice and metabolic markers among uncontrolled type 2 diabetes mellitus in Indonesia: A quasi-experimental study. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(1), 53-61. <https://doi.org/10.1016/j.dsx.2019.12.002>
- Rachmawati, N., & Kusumaningrum, N. S. D. (2017). *Gambaran kontrol dan kadar gula darah pada pasien diabetes mellitus di Poliklinik Penyakit Dalam RSJ Prof. Dr. Soerjo Magelang [Overview of control*

- and blood sugar levels in patients with diabetes mellitus at the Internal Medicine Polyclinic at RSJ Prof. Dr. Soerojo Magelang] [Thesis, Universitas Diponegoro]. Semarang, Indonesia.
- Radwan, N. M. (2019). Effectiveness of health coaching on diabetic patients: A systematic review and meta-analysis. *Traditional Medicine Research*, 4(6), 314-325. <https://doi.org/10.12032/TMR20191024143>
- Ram, J., Selvam, S., Snehalatha, C., Nanditha, A., Simon, M., Shetty, A. S., Godsland, I. F., Johnston, D. G., & Ramachandran, A. (2014). Improvement in diet habits, independent of physical activity helps to reduce incident diabetes among prediabetic Asian Indian men. *Diabetes Research and Clinical Practice*, 106(3), 491-495. <https://doi.org/10.1016/j.diabres.2014.09.043>
- Rosdiana, A. I., Raharjo, B. B., & Indarjo, S. (2017). Implementasi program pengelolaan penyakit kronis (Prolanis) [Implementation of chronic disease management program]. *HIGEIA (Journal of Public Health Research and Development)*, 1(3), 140-150.
- Song, D., Xu, T.-Z., & Sun, Q.-H. (2014). Effect of motivational interviewing on self-management in patients with type 2 diabetes mellitus: A meta-analysis. *International Journal of Nursing Sciences*, 1(3), 291-297. <https://doi.org/10.1016/j.ijnss.2014.06.002>
- Thojampa, S., & Acob, J. R. U. (2020). Self-management behavior and its impact to glycated hemoglobin among clients medically diagnosed with diabetes mellitus: A correlational study. *Belitung Nursing Journal*, 6(4), 111-115. <https://doi.org/10.33546/bnj.1102>
- Thom, D. H., Willard-Grace, R., Hessler, D., DeVore, D., Prado, C., Bodenheimer, T., & Chen, E. (2015). The impact of health coaching on medication adherence in patients with poorly controlled diabetes, hypertension, and/or hyperlipidemia: A randomized controlled trial. *The Journal of the American Board of Family Medicine*, 28(1), 38-45. <https://doi.org/10.3122/jabfm.2015.01.140123>
- Vanacker, P., Standaert, D., Libbrecht, N., Vansteenkiste, I., Bernard, D., Yperzeele, L., & Vanhooren, G. (2017). An individualized coaching program for patients with acute ischemic stroke: Feasibility study. *Clinical Neurology and Neurosurgery*, 154, 89-93. <https://doi.org/10.1016/j.clineuro.2017.01.017>
- Wolever, R. Q., Caldwell, K. L., Wakefield, J. P., Little, K. J., Gresko, J., Shaw, A., Duda, L. V., Kosey, J. M., & Gaudet, T. (2011). Integrative health coaching: An organizational case study. *Explore*, 7(1), 30-36. <https://doi.org/10.1016/j.explore.2010.10.003>
- Wolever, R. Q., Simmons, L. A., Sforzo, G. A., Dill, D., Kaye, M., Bechard, E. M., Southard, M. E., Kennedy, M., Vosloo, J., & Yang, N. (2013). A systematic review of the literature on health and wellness coaching: Defining a key behavioral intervention in healthcare. *Global Advances in Health and Medicine*, 2(4), 38-57. <https://doi.org/10.7453/2Fgahmj.2013.042>
- Wong-Rieger, D., & Rieger, F. P. (2013). Health coaching in diabetes: Empowering patients to self-manage. *Canadian Journal of Diabetes*, 37(1), 41-44. <https://doi.org/10.1016/j.cjcd.2013.01.001>

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Development of a Readiness for Hospital Discharge assessment tool in Thai patients with stroke

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Abstract

Background: The transition from hospital to home among patients with stroke is quite challenging. If the patients are not ready for hospital discharge, their condition may worsen, which also causes a high rate of readmission. Although instruments to measure readiness for hospital discharge exist, none of them fit with the Thailand context.

Objective: This study aimed to develop a Readiness for Hospital Discharge assessment tool in Thai patients with stroke.

Methods: The study was conducted from February to September 2020, which consisted of several steps: 1) conducting an extensive literature review, 2) content validity with five experts, 3) pilot testing with 30 samples, and 4) field testing with 348 participants. Content validity index (CVI) was used to measure the content validity, Cronbach's alpha and inter-item correlation to evaluate reliability, and multiple logistic regression analysis to measure the construct validity.

Results: The findings showed good validity and reliability, with I-CVI of 0.85, Cronbach's alpha of 0.94, and corrected item-total correlation ranging from 0.43 to 0.86. The construct validity was demonstrated through the results of regression analysis showing that the nine variables include level of consciousness (OR = 0.544; 95% CI 0.311 - 0.951), verbal response (OR = 0.445; 95% CI 0.272- 0.729), motor power right leg (OR = 0.165; 95% CI 0.56- 0.485), visual field (OR = 0.188; 95% CI 0.60-0.587), dysphagia (OR = 0.618; 95% CI 0.410-0.932), mobility (OR = 0.376; 95% CI 0.190 - 0.741), self-feeding (OR = 0.098; 95% CI 0.036 -0.265), bathing (OR = 0.099; 95% CI 0.026-0.378), and bladder control (OR = 0.589; 95% CI 0.355-0.977) that significantly influenced the hospital readmission within 30 days in patients with stroke.

Conclusion: The Readiness for Hospital Discharge assessment tool is valid and reliable. Healthcare providers, especially nurses, can use this tool to assess discharge conditions for patients with stroke with greater accuracy in predicting hospital readmission.

Keywords

stroke; readiness for hospital discharge; patient readmission; nursing; Thailand

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Background

Stroke is the second leading cause of death and a leading cause of disability worldwide. Its incidence increases because the population ages, nearly 800,000 people experience a new or recurrent stroke each year (Oza et al., 2017; World Health Organization, 2020). In addition, a study has shown that the incidence of ischemic stroke has sharply increased among adults who are 40 years old and older, and the reasons for this trend are likely multiple (Béjot et al., 2016). In Thailand, stroke is a serious health problem, and it has been estimated that at least one new stroke case occurs in Thailand every two minutes (Suwanwela, 2014).

Stroke is a major cause of cognitive impairments as well as impairment in activities of daily living (ADL) (Ayerbe et al., 2014). In general, when the patients with stroke are getting

better and no longer need to receive inpatient care, these patients are discharged directly to the home or long-term care settings. Patients discharged home from the hospital after a stroke were more likely to have hospital readmission within 90 days (Kilkenny et al., 2020). However, hospital discharge does not mean that the patients are fully healed or recovered.

Our study is based on a transition theory, which is basically applied in the process of human life. A transition is often related to change and development, directly linking situations and health-illness (Chick & Meleis, 1986). At this point, the transition from hospital to home is somehow a vulnerable period in the continuum of care in patients with stroke. A prior study on the experiences of patients with stroke after the transition from hospital to home during the first four weeks has shown that the patients are confronted and shocked by the disruption of their everyday daily lifestyles from having suffered a stroke. In addition, they must undergo a transition

to an unfamiliar home, experience a life riddled with uncertainty (Wongsilarat, 2016). This problem may affect the patients who are in recovery. If the patients are not ready for hospital discharge, their condition may get worse. In turn, they will depend on family members, and their quality of life will inevitably decrease. In fact, this problem is reported as a significant cause of a high rate of readmission, often occurring within 30 days of hospital discharge (Dasenbrock et al., 2017).

Moreover, the unpredictability of chronic critical illness puts the patient's family in a state of psychological distress (Hickman & Douglas, 2010). Hospital readmission among patients with stroke can negatively impact cost and patient outcomes, such as in-hospital mortality, a longer length of stay (LOS), and higher costs (Hansen et al., 2011). In Thailand, the average cost of acute ischemic stroke treatment per patient was 42,400 Thai Baht (1,211 \$) (Sribundit et al., 2017). Therefore, readiness for hospital discharge is essential for the smooth recovery of patients with stroke. Most patients undergoing discharge from the hospital in an intermediate stage of recovery can continue their recovery at home (Suksatan et al., 2021). The evaluation of preparedness by nurses for hospital discharge, transfer to another place, and level of care is essential for the safety, satisfaction, and outcome of the patients (Chen & Bai, 2017; Suksatan & Posai, 2020). However, nurses' assessment tools for patients with stroke being discharged from the hospital remain unclear (Vluggen et al., 2020). Additionally, there is a lack of studies and instruments to assess various covered readiness or readmission domains, including what can directly predict readmission within 30 days. Almost no Western country conducted an instrument development study compatible with the context of the healthcare system in Thailand. Although some instruments developed or used in psychometric testing are now widely accepted for cross-cultural research, they are found to have limited use (Karapinar et al., 2020; Nkemdirim Okere et al., 2020). Thus, this study aimed to develop and validate the Readiness for Hospital Discharge (RHD) assessment tool in patients with stroke.

Methods

Study Design

This study was guided by the tool development procedures (Burns & Grove, 2005; Srisatidnarakul, 2012). It was conducted at the neurosurgery wards and stroke units of university hospitals in the central regions of Thailand from February to September 2020.

Procedure for Instrument Development

This study has two phases of instrument development: tool construction and psychometric testing.

First phase: Tool construction

The first step in this phase was defining the concept of variables from comprises an extensive review of the literature and an interview with stroke's experts related to readiness for hospital discharge in patients with stroke (Bobay et al., 2018; Chen & Bai, 2017; Flink & Ekstedt, 2017; Galvin et al., 2017; Kaya et al., 2018; Mabire et al., 2015; Wallace et al., 2016). A literature review conducted in 2019 included database searches in medical, sociological, psychological, and nursing

literature. Controlled vocabulary was also used to search MEDLINE, CINAHL (Cumulative Index to Nursing and Allied Health Literature), Ovid Medline, Scopus, PubMed, ProQuest, and PsycINFO. Readiness for hospital discharge was a subject heading, and no date limits were applied. Additionally, researchers interviewed five experts in the area of stroke, specifically in readiness for hospital discharge of the patients' aspect. The results of the interviews were then combined with the results of the literature review (including the original tool), which can be seen in the results section.

The second step was the content validity test by the content experts, consisting of two nursing professionals, one neurologist, one specialist in stroke, and one physical therapist. Item-Content validity index (I-CVI) was used to measure the validity of the content (Burns & Grove, 2005).

The next step was preliminary item tryout with 30 patients with stroke, which is considered acceptable for pretesting, mainly between 15-30 subjects (Gunawan et al., 2021). The item analysis and reliability step were tested, with a Cronbach's alpha coefficient of ≥ 0.70 , indicating an acceptable internal consistency and reliability (Burns & Grove, 2005; Nunnally, 1978). In addition, interobserver reliability was also assessed by intraclass correlation coefficients (ICC) among three observers, Thai Registered Nurses (RNs). The nurses were those working at a stroke unit or a neurosurgical ward and employed full-time by the hospital for at least six months and were providing direct nursing care for the patients with stroke. ICC scores range from 0 to 1. The ICC of 1 indicates perfect agreement, whereas a 0 indicates no agreement (Cicchetti & Sparrow, 1981; Fleiss, 2013; Srisatidnarakul, 2012). The acceptable score of ICC is above 0.070 (Polit et al., 2007). Additionally, the inter-item correlation testing to determine whether constituent items are measuring the same domain 0.30-0.70, and corrected item-total correlation of > 0.30 indicated an acceptable level of internal consistency reliability (Burns & Grove, 2005).

Second phase: Psychometric testing

The second phase was field testing with a bigger sample size. In this step, the sample size was calculated using the statistical software package G*Power (Srisatidnarakul, 2020) and was determined based on a previous study (Kumar et al., 2019), with an odds ratio of 0.5, statistical power level of 80%, and a probability level of 0.05, which resulted in the required total sample size for logistic regression model was approximately 376 observations. The participants were selected using a convenience sampling, with inclusion criteria: Thai adults and elderly aged 40 or above, threatened with a stroke in the first-ever diagnosis by a physician, discharge planning to home, no condition of hearing or vision impairment before disease onset, able to communicate in the Thai language, and no history of seizure and psychosis before disease onset recruited into this study. In addition, discharge planning to long-term care, apnea or lack of oxygen > 4 min at stroke onset, bedridden state, people with Alzheimer's disease and other cognitive disorders who could not answer or respond during the interview, and patients who were not willing to voluntarily participate were excluded from our study.

Data were analyzed using descriptive statistics, Pearson's Chi-Square, and binary logistic regression. The binary logistic regression was used specifically for construct validity to

examine the patients' readmission within 30 days post-discharge. *P*-value <0.05 was considered statistically significant, and diagnostic accuracy was evaluated using the ROC curves, sensitivity, specificity, positive predictive values (PPV), and negative predictive (NPV).

Data Collection

After each hospital's Institutional Review Board (IRB) has given formal approval and permission to gather the data. The researchers employed four research assistants (RAs) to collect data at four tertiary hospitals in central Thailand. The RAs were four masters' degree nurses with research and a Registered Nursing (RN) license who provided direct nursing care to stroke patients in a stroke unit or neurosurgery ward. The RAs were trained and evaluated in terms of knowledge and understanding of the study protocol, which included an operational definition, data collection procedures, and human research participants' protection. The importance of completeness and accuracy of data was emphasized by the researchers. Any questions and concerns about any confusing or misunderstood process have been handled.

Participants who met the inclusion criteria were invited to participate. All participants completely accepted the study's objectives, benefits, risks, and patient rights. At the time of discharge date, data were collected using a questionnaire. The researchers indicated that the participants would not suffer any harm and that completing all of the questionnaires would take around 10-15 minutes. At any stage during the data gathering process, participants could refuse or exit the study. All participants were followed by cell phone for 30 days.

Ethical Considerations

The study was approved by the Institutional Review Board (IRB) of Faculty of Medicine, Chulalongkorn University, Thailand (COA No. 353/2020); IRB and Independent Ethics Committee of Prasat Neurological Institute, Department of Medical Service, Ministry of Public Health, Thailand (IRB No. 63019); and IRB, Royal Thai Army Medical Department (No. IRBRTA 472/2020), Thammasat university hospital (COA No. 065/2563). The current study was conducted in accordance with the Declaration of Helsinki.

Results

The results in this study were presented according to the instrument development phases.

First Phase: Tool Construction

The researchers did an extensive literature review, analyzed the existing scale, and interviewed experts, which resulted in an initial 23 items with three parameters: 1) neurological signs, 2) clinical signs and symptoms, and 3) physical functions in Activity Daily Living (ADL). For scoring and interpretation of the tool, the higher scores demonstrate the better performance by patients' readiness for hospital discharge.

After generating the item pool, content validity among five experts was done. The 23 items were revised following the experts' recommendations and suggestions. The first draft of the 23 items regarding the characteristic component was revised because of their irrelevancy to the meaning of the operational definitions. There was no item added or reduced; the 23 items remained, reflecting all the aspects of the readiness for hospital discharge provided in the operational definitions. The results of the Item-Content Validity Index (I-CVI) was 0.85, and Scale-Content Validity Index (S-CVI) was 0.96.

After content validity, pilot testing was done on 30 patients with stroke. The results indicated that the RHD tool had good internal consistency, with a high alpha coefficient of an overall domain of the tool ($\alpha = 0.94$). Each domain also had high alpha coefficient, consisting of neurological signs ($\alpha = 0.93$), clinical signs ($\alpha = 0.81$), and symptoms and physical function in ADL ($\alpha = 0.93$). An inter-rater reliability test was performed using ICC statistics, which requires three observers. Data were analyzed using an average measurement, a 2-way random-effects model, and absolute agreement. The result of ICC was 0.92 with a 95% confident interval (0.633 - 0.988), meaning that the relevance between observers was excellent. Also, inter-item correlation ranged from 0.31 to 0.92, and corrected item-total correlation ranged from 0.43 to 0.86, which indicated that the RHD tool was appropriate for field testing.

Second Phase: Psychometric Testing

Characteristics of the participants

Due to the COVID-19 pandemic, only 348 of 376 patients could participate in this study. Most of the participants were males, and the mean age was 63.34 ± 13.14 years, with 41.1% having completed elementary school. The majority of the comorbidities were hypertension (69.0%), and over half of the participants (67.2%) needed more than 3 hours from illness onset to arrive at the hospital. In addition, almost all stroke types (87.4%) were ischemic strokes, length of stay was between 4 -7 days (33.3%), and current smokers were 52.6% (Table 1).

Table 1 Sociodemographic characteristics of all patients and by group (n = 348)

Socio-demographic characteristics	Total n = 348	No readmission n = 225	Readmission n = 123	p-value
Age (year)	63.34 ± 13.14	62.06 ± 13.17	65.67 ± 12.81	0.014*
Income (Bath)	6853.42 ± 17247.71	5471.73 ± 4280.29	9380.89 ± 28328.82	0.131
Sex (%)				0.083
Female	179 (51.5)	108 (60.3)	71 (39.7)	
Male	169 (48.5)	117 (69.2)	52(30.8)	
Marital status				0.071
Single	65(18.7)	39(60.0)	26(40.0)	
Windowed	69(19.8)	38(55.1)	31(44.9)	
Married	214(61.5)	148(69.2)	66(30.8)	

Table 1 (Cont.)

Education level				0.367
Illiterate	15(4.3)	6(40)	9(60)	
Elementary school	143(41.1)	90(62.9)	53(37.1)	
Secondary school	74(21.3)	50(67.6)	24(32.4)	
Diploma	21(6)	15(71.4)	6(28.6)	
Bachelor's degree	34(9.8)	24(70.6)	10(29.4)	
Other	61(17.5)	40(65.6)	21(34.4)	
Occupational				0.044*
Agriculture	17(4.9)	8(47.1)	9(52.9)	
Merchant	29(8.3)	19(65.5)	10(34.5)	
Unemployed	38(10.9)	19(50.0)	19(50.0)	
Retired government official	45(12.9)	37(82.2)	8(17.8)	
Company officer	47(13.5)	28(59.6)	19(40.4)	
Other	52(14.9)	33(63.5)	19(36.5)	
Employed	120(34.5)	81(67.5)	39(32.5)	
Living situation				0.995
Living with relative	14(4)	9(64.3)	5(35.7)	
Living alone	42(12.1)	27(64.3)	15(35.7)	
Other	46(13.2)	29(63.0)	17(37.0)	
Living with spouse/adult children	246(70.7)	160(65.0)	86(35)	
Comorbidities				0.058
No underlying disease	11(3.2)	4(36.4)	7(63.6)	
Having underlying disease	337(96.8)	221(65.6)	116(34.4)	
Cardiovascular disease				0.562
Yes	76(21.8)	47(61.8)	29(38.2)	
No	272(78.2)	178(65.4)	94(34.6)	
Hypertension				0.658
Yes	240(69)	157(65.4)	83(34.6)	
No	108(31)	68(63)	40(37)	
Diabetes mellitus				0.494
Yes	130(37.4)	87(66.9)	43(33.1)	
No	218(62.6)	138(63.3)	80(36.7)	
Dyslipidemia				0.038*
Yes	133(38.2)	77(57.9)	56(42.1)	
No	215(61.8)	148(68.8)	67(31.2)	
Osteoarthritis				0.434
Yes	28(8)	20(71.4)	8(28.6)	
No	320(92)	205(64.1)	115(35.9)	
Welfare medical expenses				0.094
Own payment	10(2.9)	8(80.0)	2(20.0)	
Social security scheme	45(12.9)	26(57.8)	19(42.2)	
Other	54(15.5)	34(63.0)	20(37.0)	
Government pension fund	83(23.9)	63(75.9)	20(24.1)	
Universal coverage Scheme	156(44.8)	94(60.3)	62(39.7)	
Time onset to arrive hospital (hour)				0.005*
≤ 3	114(32.8)	62(54.4)	52(45.6)	
> 3	234(67.2)	163(69.7)	71(30.3)	
Stroke type				0.064
Ischemic stroke	304(87.4)	200(65.8)	104(34.2)	
Cerebral hemorrhage	33(9.5)	16(48.5)	17(51.5)	
Other	11(3.1)	9(81.8)	2(18.2)	
Length of stay (day)				0.809
1 – 3	85(24.4)	57(67.1)	28(32.9)	
4 – 7	116(33.3)	72(62.1)	44(37.9)	
8 – 10	54(15.5)	37(68.5)	17(31.5)	
> 11	93(26.7)	59(63.4)	34(36.6)	
Smoking				0.260
No-Smoker	142(40.8)	99(69.7)	43(30.3)	
Ex-smoker	23(6.6)	14(60.9)	9(39.1)	
Current smoker	183(52.6)	112(61.2)	71(38.8)	

Note: *p-value calculated using t-test for continuous variable and Chi-Square test for categorical variables. $p \leq 0.05$

Construct Validity: Multivariate Regression Results

A binary logistic regression (readmission = 1 and no-readmission = 0) was used, with 23 independent variables. Enter logistic regression analysis method was chosen to find

the factors influencing the readmission among Thai stroke patients. With the Goodness-of-fit statistic test, the results showed a well-fitted model, with the -2LL of 119.817, 84.6% (Nagelkerke R^2), 61.5% (Cox & Snell R^2) of the variance in

RHD scores and correctly classified 93.4%. The Hosmer-Lemeshow goodness-of-fit test with the null hypothesis also revealed that the model had a good fit. The *p*-value was 0.980, and the Chi-Square value of 2.021, with a 5% significance level. A non-significant Chi-Square also indicated that the data fit the model well.

Regarding the result of logistic regression method, nine variable statistics significantly influenced readmission, for every one-point increase in level of consciousness score, there was an estimated 46% reduced odds of hospital readmission (OR = 0.54; 95% CI, 0.31 - 0.95; *p* < 0.05); an estimated 56% reduced odds of hospital readmission for every one-point increase in verbal response score (OR = 0.44; 95% CI, 0.27 - 0.72; *p* < 0.05). There were estimated 84% reduced odds of hospital readmission for every one-point increase in

motor power right leg score (OR = 0.16; 95% CI, 0.56 - 0.485; *p* < 0.05), and estimated 82% reduced odds of hospital readmission for every one-point increase in visual field score (OR = 0.18; 95% CI, 0.60 - 0.58; *p* < 0.05). Also, there were estimated 39% reduced odds of hospital readmission for every one-point increase in better dysphagia score, (OR = 0.61; 95% CI, 0.41 - 0.93; *p* < 0.05), 63% reduced odds for every one-point increase in mobility score (OR = 0.37; 95% CI, 0.19 - 0.74; *p* < 0.05), 91% reduced odds of readmission for every one-point increase in self-feeding score (OR = 0.09; 95% CI, 0.03 - 0.26; *p* < 0.05), 91% reduced odds for every one-point increase in bathing score (OR = 0.09; 95% CI, 0.02 - 0.37; *p* < 0.05), and, 42% reduced odds of hospital readmission for every one-point increase in bladder control score (OR = 0.58; 95% CI, 0.35 - 0.97; *p* < 0.05) was shown on [Table 2](#).

Table 2 Test of construct validity: Multivariate regression results of factors associated with readmission within 30 days

Factors	B	S.E.	Wald	df	OR	p-value
Level of consciousness	-0.610	0.286	4.554	1	0.544 (0.311 - 0.951)	0.033*
Eye opening response	-0.058	0.327	0.031	1	0.944 (0.497 - 1.792)	0.859
Motor response	-0.380	0.372	1.044	1	0.684 (0.330 - 1.417)	0.307
Verbal response	-0.810	0.252	10.360	1	0.445 (0.272 - 0.729)	0.001*
Motor power right arm	-0.781	0.635	1.513	1	0.458 (0.132 - 1.589)	0.219
Motor power left arm	0.892	0.487	3.359	1	2.441 (0.940 - 6.339)	0.067
Motor power left leg	0.427	0.652	0.428	1	1.532 (0.427 - 5.501)	0.513
Motor power right leg	-1.803	0.550	10.738	1	0.165 (0.056 - 0.485)	0.001*
Visual field	-1.673	0.582	8.262	1	0.188 (0.060 - 0.587)	0.004*
Sensory	-0.863	0.482	3.209	1	0.422 (0.164 - 1.085)	0.073
Cognition: name and age	0.517	0.456	1.282	1	1.677 (0.685 - 4.101)	0.258
Temperature (axillary)	0.214	0.883	0.059	1	1.238 (0.220 - 6.983)	0.809
Blood pressure	-0.263	0.594	0.196	1	0.769 (0.240 - 2.462)	0.658
Respiratory	0.732	1.012	0.523	1	2.079 (0.286 - 15.101)	0.469
Blood glucose level	-1.048	0.842	1.550	1	0.351 (0.067 - 1.825)	0.213
Dysphagia	-0.481	0.210	5.268	1	0.618 (0.410 - 0.932)	0.022*
Dysarthria	-0.198	0.375	0.279	1	0.820 (0.394 - 1.710)	0.597
Mobility	-0.979	0.346	7.991	1	0.376 (0.190 - 0.741)	0.005*
Self-feeding	-2.325	0.509	20.852	1	0.098 (0.036 - 0.265)	0.000*
Dressing	0.562	0.385	2.125	1	1.753 (0.824 - 3.731)	0.145
Bathing	-2.313	0.684	11.431	1	0.099 (0.026 - 0.378)	0.001*
Bladder control	-0.529	0.258	4.196	1	0.589 (0.355 - 0.977)	0.041*
Toilet use	-0.593	0.416	2.038	1	0.552 (0.245 - 1.248)	0.153
Constant	18.462	3.672	25.272	1	104221531.122	0.000

Note: Model chi-square (df = 23) = 332.274, *p* = 0.000, Cox & Snell R² = 0.615, Nagelkerke R² = 0.846, Overall percentage accuracy is 93.4%, **p* < 0.05

ROC curve, sensitivity, specificity, PPV, and NPV of the RHD tool

The tool was assessed to discriminate between patients who had readiness for hospital discharge or not, predict low and high readmission risk, and determine potential cut-off criteria corresponding to the sensitivity rate and specificity at the confidence interval ([Table 3](#)). The ROC curve was used to

determine the cut-off of the readiness-for-hospital discharge score for distinguishing between low and high readmission risk. The ROC curve was 13.5, which corresponded to a sensitivity of 88.9%, a specificity of 83.7%, PPV 90.9%, and NPV 80.5%. The area under the curve (AUC) was 0.944 (95% CI 0.921-0.966), extremely high. This indicated that the model had a good predicting level (see [Figure 1](#) and [Table 4](#)).

Table 3 Cut-off value for the judgment of the RHD tool

Readiness-for-hospital-discharge cut-off score	Percent (95% CI)			
	Sensitivity	Specificity	PPV	NPV
12.5	93.8	73.2	86.5	86.5
13.5	88.9	83.7	90.9	80.5
14.5	81.8	91.1	94.4	73.2
15.5	72.4	95.9	97.0	65.6

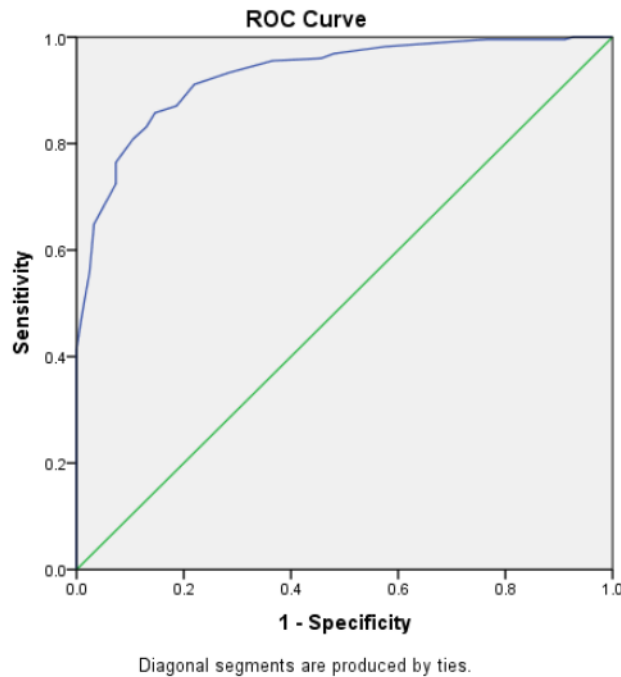


Figure 1 The ROC curve for the probability of readiness for hospital discharge

Table 4 The AUC for the probability of the readiness for hospital discharge

Area Under the ROC Curve (AUC)	Std. Error ^a	Asymptotic Sig ^b	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
0.944	0.012	0.000	0.921	0.966

Note: a. Under the nonparametric assumption | b. Null hypothesis: true area = 0.5

Discussion

This was the first study to develop a new assessment tool of readiness for hospital discharge among patients who threaten by a stroke for the first time in Thailand. The RHD tool was developed from various perspectives, literature reviews, and expert interviews to enhance the quality of assessment tool development.

The readmission assessment tool for stroke populations, especially in the Thai population, had inadequate representativeness. As a result, the experts agreed that the initial draft of the RHD tool's clustering structure and components is necessary to develop, particularly in the context of prospective hospital discharge readiness. Nevertheless, in terms of tool development, this is the most effective reconstructive method (Béjot et al., 2016).

In addition, the tool's content validity, construct validity, and reliability are vital parts in developing a new instrument. In our study, the experts' opinions revealed a CVI of 0.85, which was acceptable content validity. This new RHD tool also had the highest sensitivity (95% confidence interval) and had good internal consistency evaluated using Cronbach's alpha coefficients. The standards were met when each parameter had a coefficient of more than 0.70 (Zijlmans et al., 2017). In addition, an inter-rater reliability test was also having a good result (ICC = 0.92 with 95% CI 0.633 - 0.988). And, the inter-item correlation ranged from 0.31 - 0.92 and corrected item-total correlation ranging from 0.43 - 0.86, which were

appropriate. Additionally, the construct validity of the tool was demonstrated through the results of regression analysis showing that the nine variables, including the level of consciousness, verbal response, motor power right leg, visual field, dysphagia, mobility, self-feeding, bathing, and bladder control, significantly influencing hospital readmission within 30 days in patients with stroke. In addition, the accuracy of regression analysis seen from the ROC curve, sensitivity, specificity, PPV, and NPV, which revealed that the model had a good accuracy level of predicting.

This study revealed that with the improvement in the consciousness level, there was an estimated 46% reduced odds of hospital readmission. This is consistent with a previous study showing that impaired consciousness or disorientation at discharge is significantly associated with complications, higher in-hospital mortality, and worse outcomes after an ischemic stroke (Wang, Su, et al., 2018).

There were an estimated 56% reduced odds of hospital readmission when the verbal response improved. The verbal response score can reflect stroke severity and measure consciousness level (Wang, Shen, et al., 2018). In addition, the improvement of the visual field can predict 82% decreased odds of hospital readmission. It is supported by Rowe et al. (2019) reported that new-onset visual impairments were found that 60% of stroke survivors, visual impairments were reported by three-quarters of the participants (73%).

Additionally, the better of dysphagia state and self-feeding, there was an estimated reduced odds of hospital readmission 39%, respectively. Dysphagia is a common symptom following

a stroke, and it increases the risk of aspiration pneumonia. Eating difficulties are associated with poor outcomes because of complications affecting rehabilitation. There were also emotional complications because of the stigma of the inability to eat since eating was seen as a major part of basic social activity (Lieber et al., 2018).

The improvement of self-bladder control could reduce the odds of hospital readmission by 42%. According to Thomas et al. (2019), it was found that urinary incontinence affected 40% to 60% of stroke survivors, 25% had problems after hospital discharge, and 15% had urinary incontinence after a year. However, urinary incontinence causes shame and distress, making it difficult to participate in rehabilitation, lowering self-esteem and depression. It also has a major impact on the family and can affect the patient's ability to return home.

In our study, improved self-bathing could also reduce odds of hospital readmission by 91%. It is consistent with a previous study, the most prevalent impaired activity was bathing (21.1%), and ADL impairment increased the likelihood of 3-month readmission significantly (Nguyen et al., 2021). Besides, the improvement of mobility and motor power at the right leg could predict odds of reducing readmission by 84%, respectively. This finding was supported by Bastami and Azadi (2020), who reported that lower mobility increased the probability of having readmission in stroke patients. 90% of the older adults had fallen at least once in the six months, and 38% reported a high level of fear of falling. The most common diseases associated with fall and movement disorders were chronic diseases, including cardiovascular and neurologic disorders and crucially related factors inducing a patient's rehospitalization (Cimilli Ozturk et al., 2017). Hence, it may retain some useful prognostic information. Before the patients are discharged from the hospital, nurses and healthcare providers should focus their attention on their nursing care or increase the supporting the readiness of their patients for hospital discharge in patients with stroke.

It is noteworthy that the results of this study differed from studies in Western countries where the emphasis was placed on readiness for hospital discharge on patient self-assessment and family support (Hickman & Douglas, 2010; Lau et al., 2016; Weiss et al., 2007). In contrast, this study did not report as self-reported of the stroke patients but assessment by healthcare providers who have the experience to direct taking care of the patients. This study provides evidence of the tool's accuracy in the evaluation of readiness for hospital discharge and its influence on hospital readmission in patients with stroke in Thailand.

Implications for Practice

The newly developed RHD tool could benefit the nursing practice, as it can be used for assessing patients to determine their readiness-for-hospital discharge. It should therefore be used in numerous clinical-practice settings throughout Thailand. In addition, with the study findings, nurses have been provided with a standard tool for use with their stroke patients, enabling them to determine the actual readiness of their patients for hospital discharge. Nurses are also able to instill confidence in their patients, encouraging them to continue their own rehabilitation on their own at home and thereby forestall any need for re-hospitalization. Additionally, health professionals, including nurses who work with stroke

patients, can now acquire a more comprehensive understanding of the readiness-for-hospital discharge of stroke patients. These professionals can evaluate the readiness of stroke patients for hospital discharge in the three domains of neurological signs, clinical signs and symptoms, and physical functions in ADL. They will also be positioned to provide important information to their patients and to design both health education and health promotion programs for stroke patients in Thailand.

Another implication is that the readiness-for-hospital discharge tool can now be developed as a website on mobile. The researchers had developed a website for screening the readiness of Thai stroke patients for hospital discharge. It can be accessed via <https://rhd.ban1gun.com/> (Posri et al., 2021). It helps assess the readiness for hospital discharge of stroke patients, as it is an accurate and easy-to-use method.

Limitations

The study was limited to only university hospitals in the central region of Thailand, and the rate and reasons for readmission might be different for non-academic hospitals.

Conclusion

This new instrument is the first of its kind in Thailand to demonstrate high validity and reliability for assessing patients to determine their readiness for hospital discharge and accuracy in predicting hospital readmission. This tool could benefit the clinical practice and help prevent unplanned readmissions to the hospital of patients with stroke in Thailand.

Declaration of Conflicting Interest

None to declare.

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Authors' Contributions

Conceptualization, BS and RLH; Data curation, NP; Formal analysis, NP, BS; Investigation, BS, RLH; Methodology, NP, BS; Project administration, NP; Supervision, BS, RLH; Writing-original draft, NP; Writing-review & editing, BS, RLH. All authors read and approved the final version of the work to be published.

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Data Availability

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


References

- Ayerbe, L., Ayis, S. A., Crichton, S., Wolfe, C. D. A., & Rudd, A. G. (2014). Natural history, predictors and associated outcomes of anxiety up to 10 years after stroke: The South London Stroke Register. *Age and Ageing*, 43(4), 542-547. <https://doi.org/10.1093/ageing/afz208>
- Bastami, M., & Azadi, A. (2020). Effects of a multicomponent program on fall incidence, fear of falling, and quality of life among older adult nursing home residents. *Annals of Geriatric Medicine and Research*, 24(4), 252-258. <https://doi.org/10.4235/agmr.20.0044>
- Béjot, Y., Delpont, B., & Giroud, M. (2016). Rising stroke incidence in young adults: More epidemiological evidence, more questions to be answered. *Journal of the American Heart Association*, 5(5), e003661. <https://doi.org/10.1161/JAHA.116.003661>
- Bobay, K. L., Weiss, M. E., Oswald, D., & Yakusheva, O. (2018). Validation of the registered nurse assessment of readiness for hospital discharge scale. *Nursing Research*, 67(4), 305-313. <https://doi.org/10.1097/NNR.0000000000000293>
- Burns, N., & Grove, S. K. (2005). *The practice of nursing research: Conduct, critique and utilization*. St. Louis, Missouri: Elsevier Saunders.
- Chen, Y., & Bai, J. (2017). Reliability and validity of the Chinese version of the Readiness for Hospital Discharge Scale-Parent Form in parents of preterm infants. *International Journal of Nursing Sciences*, 4(2), 88-93. <https://doi.org/10.1016/j.ijnss.2017.01.009>
- Chick, N., & Meleis, A. I. (1986). *Transitions: A nursing concern*. Rockville, MD: Aspen Publications.
- Cicchetti, D. V., & Sparrow, S. A. (1981). Developing criteria for establishing interrater reliability of specific items: Applications to assessment of adaptive behavior. *American Journal of Mental Deficiency*, 86(2), 127-137.
- Cimilli Ozturk, T., Ak, R., Unal Akoglu, E., Onur, O., Eroglu, S., & Saritemur, M. (2017). Factors associated with multiple falls among elderly patients admitted to emergency department. *International Journal of Gerontology*, 11(2), 85-89. <https://doi.org/10.1016/j.ijge.2016.05.009>
- Dasenbrock, H. H., Angriman, F., Smith, T. R., Gormley, W. B., Frerichs, K. U., Aziz-Sultan, M. A., & Du, R. (2017). Readmission after aneurysmal subarachnoid hemorrhage. *Stroke*, 48(9), 2383-2390. <https://doi.org/10.1161/STROKEAHA.117.016702>
- Fleiss, J. (2013). *Statistical methods for rate and proportions* (2 ed.). New York: Wiley.
- Flink, M., & Ekstedt, M. (2017). Planning for the discharge, not for patient self-management at home—an observational and interview study of hospital discharge. *International Journal of Integrated Care*, 17(6). <https://dx.doi.org/10.5334/2Fijic.3003>
- Galvin, E. C., Wills, T., & Coffey, A. (2017). Readiness for hospital discharge: A concept analysis. *Journal of Advanced Nursing*, 73(11), 2547-2557. <https://doi.org/10.1111/jan.13324>
- Gunawan, J., Marzilli, C., & Aungsueroch, Y. (2021). Establishing appropriate sample size for developing and validating a questionnaire in nursing research. *Belitung Nursing Journal*, 7(5), 356-360. <https://doi.org/10.33546/bnj.1927>
- Hansen, L. O., Young, R. S., Hinami, K., Leung, A., & Williams, M. V. (2011). Interventions to reduce 30-day rehospitalization: A systematic review. *Annals of Internal Medicine*, 155(8), 520-528. <https://doi.org/10.7326/0003-4819-155-8-201110180-00008>
- Hickman, R. L., Jr, & Douglas, S. L. (2010). Impact of chronic critical illness on the psychological outcomes of family members. *AACN Advanced Critical Care*, 21(1), 80-91. <https://doi.org/10.4037/15597768-2010-1010>
- Karapinar, M., Baskurt, F., Baskurt, Z., Gunal, A., & Kockar, M. C. (2020). Reliability and validity of the Turkish version of the oxford participation and activities questionnaire in older people. *Annals of Geriatric Medicine and Research*, 24(4), 282-289. <https://doi.org/10.4235/agmr.20.0074>
- Kaya, S., Sain Guven, G., Aydan, S., Kar, A., Teles, M., Yildiz, A., Koca, G. S., Kartal, N., Korku, C., & Ürek, D. (2018). Patients' readiness for discharge: Predictors and effects on unplanned readmissions, emergency department visits and death. *Journal of Nursing Management*, 26(6), 707-716. <https://doi.org/10.1111/jonm.12605>
- Kilkenny, M. F., Dalli, L. L., Kim, J., Sundararajan, V., Andrew, N. E., Dewey, H. M., ..., & null, n. (2020). Factors associated with 90-day readmission after stroke or transient ischemic attack. *Stroke*, 51(2), 571-578. <https://doi.org/10.1161/STROKEAHA.119.026133>
- Kumar, A., Resnik, L., Karmarkar, A., Freburger, J., Adhikari, D., Mor, V., & Gozalo, P. (2019). Use of hospital-based rehabilitation services and hospital readmission following ischemic stroke in the United States. *Archives of Physical Medicine and Rehabilitation*, 100(7), 1218-1225. <https://doi.org/10.1016/j.apmr.2018.12.028>
- Lau, D., Padwal, R. S., Majumdar, S. R., Pederson, J. L., Belga, S., Kahlon, S., Fradette, M., Boyko, D., & McAlister, F. A. (2016). Patient-reported discharge readiness and 30-day risk of readmission or death: A prospective cohort study. *The American Journal of Medicine*, 129(1), 89-95. <https://doi.org/10.1016/j.amjmed.2015.08.018>
- Lieber, A. C., Hong, E., Putrino, D., Nistal, D. A., Pan, J. S., & Kellner, C. P. (2018). Nutrition, energy expenditure, dysphagia, and self-efficacy in stroke rehabilitation: A review of the literature. *Brain Sciences*, 8(12). <https://doi.org/10.3390/brainsci8120218>
- Mabire, C., Coffey, A., & Weiss, M. (2015). Readiness for Hospital Discharge Scale for older people: Psychometric testing and short form development with a three country sample. *Journal of Advanced Nursing*, 71(11), 2686-2696. <https://doi.org/10.1111/jan.12731>
- Nguyen, T. V., Dang, H. T., Burns, M. J., Dao, H. H. H., & Nguyen, T. N. (2021). Impairment in activities of daily living and readmission in older patients with heart failure: A cohort study. *BMJ Open*, 11(2), e044416. <https://doi.org/10.1136/bmjopen-2020-044416>
- Nkemdirim Okere, A., Sanogo, V., Balkrishnan, R., & Diaby, V. (2020). A quantitative analysis of the effect of continuity of care on 30-day readmission and in-hospital mortality among patients with acute ischemic stroke. *Journal of Stroke and Cerebrovascular Diseases*, 29(9), 105053. <https://doi.org/10.1016/j.jstrokecerebrovasdis.2020.105053>
- Nunnally, J. C. (1978). *Psychometric Theory* (2 ed.). New York: McGraw-Hill.
- Oza, R., Rundell, K., & Garcellano, M. (2017). Recurrent ischemic stroke: Strategies for prevention. *American Family Physician*, 96(7), 436-440.
- Polit, D. F., Beck, C. T., & Owen, S. V. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing & Health*, 30(4), 459-467. <https://doi.org/10.1002/nur.20199>
- Posri, N., Srisatidnarakul, B., & Hickman, R. (2021). *Development of a readiness for hospital discharge assessment tool for stroke patients' accuracy in predicting hospital readmission: A prospective cohort study* [PhD Dissertation]. Thammasat University, Pathum Thani, Thailand.
- Rowe, F. J., Hepworth, L. R., Howard, C., Hanna, K. L., Cheyne, C. P., & Currie, J. (2019). High incidence and prevalence of visual problems after acute stroke: An epidemiology study with implications for service delivery. *PloS One*, 14(3), e0213035. <https://doi.org/10.1371/journal.pone.0213035>
- Sribundit, N., Riewpaiboon, A., Stewart, J. F., Tantirittsak, T., & Hanchaipiboolkul, S. (2017). Cost of acute care for ischemic stroke in Thailand. *Southeast Asian Journal of Tropical Medicine and Public Health*, 48(3), 628-640.
- Srisatidnarakul, B. (2012). *Development and validation of research instruments: Psychometric properties*. Bangkok: Chulalongkorn University Press.
- Srisatidnarakul, B. (2020). *Effect size, power analysis, optimal sample size calculations, using G* power software*. Bangkok: Chulalongkorn University Press.
- Suksatan, W., Collins, C. J., Koontalay, A., & Posai, V. (2021). Burdens among familial caregivers of stroke survivors: A literature review. *Working with Older People*. <https://doi.org/10.1108/WWOP-02-2021-0007>
- Suksatan, W., & Posai, V. (2020). An integrative review of discharge planning interventions with Thai stroke patients. *Systematic Reviews in Pharmacy*, 11(11), 1692-1700.
- Suwanwela, N. C. (2014). Stroke epidemiology in Thailand. *Journal of Stroke*, 16(1), 1-7. <https://doi.org/10.5853/jos.2014.16.1.1>
- Thomas, L. H., Coupe, J., Cross, L. D., Tan, A. L., & Watkins, C. L. (2019). Interventions for treating urinary incontinence after stroke in adults. *Cochrane Database of Systematic Reviews*(2). <https://doi.org/10.1002/14651858.CD004462.pub4>
- Viuggen, T. P. M. M., van Haastregt, J. C. M., Tan, F. E. S., Kempen, G. I. J. M., Schols, J. M. G. A., & Verbunt, J. A. (2020). Factors associated

- with successful home discharge after inpatient rehabilitation in frail older stroke patients. *BMC Geriatrics*, 20(1), 25. <https://doi.org/10.1186/s12877-020-1422-6>
- Wallace, A. S., Perkhounkova, Y., Bohr, N. L., & Chung, S. J. (2016). Readiness for hospital discharge, health literacy, and social living status. *Clinical Nursing Research*, 25(5), 494-511. <https://doi.org/10.1177/1054773815624380>
- Wang, J.-P., Su, Y.-Y., Liu, Y.-F., Liu, G., Fan, L.-L., & Gao, D.-Q. (2018). Study of Simplified Coma Scales: Acute stroke patients with tracheal intubation. *Chinese Medical Journal*, 131(18), 2152-2157. <https://doi.org/10.4103/0366-6999.240813>
- Wang, Y., Shen, Z., Lu, X., Zhen, Y., & Li, H. (2018). Sensitivity and specificity of ultrasound for the diagnosis of acute pulmonary edema: A systematic review and meta-analysis. *Medical Ultrasonography*, 20(1), 32-36. <https://doi.org/10.11152/mu-1223>
- Weiss, M. E., Piacentine, L. B., Lokken, L., Ancona, J., Archer, J., Gresser, S., Holmes, S. B., Toman, S., Toy, A., & Vega-Stromberg, T. (2007). Perceived readiness for hospital discharge in adult medical-surgical patients. *Clinical Nurse Specialist*, 21(1), 31-42.
- Wongsilarat, T. (2016). Effects of using the stroke fast tract program on ability to screening and referral patient, and satisfaction among nurses in emergency department, Muang Songkhla hospital. *The Southern College Network Journal of Nursing and Public Health* 3(2), 149-164.
- World Health Organization. (2020). *The top 10 causes of death*. Retrieved October 4, 2021 from <https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death>
- Zijlmans, E. A. O., Tijmstra, J., van der Ark, L. A., & Sijtsma, K. (2017). Item-score reliability in empirical-data sets and its relationship with other item indices. *Educational and Psychological Measurement*, 78(6), 998-1020. <https://doi.org/10.1177/0013164417728358>

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Greater accountability in nursing handover

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Abstract

Nursing handover exemplifies both the nurse's professional ethics and the profession's integrity. The article by Yetti et al. acknowledges the critical role of structure and process in handover implementation. At the same time, they emphasised the fundamental necessity to establish and update handover guidelines. I assert that effective patient handover practices do not simply happen; instead, nurses require pertinent educational support. It is also pivotal to develop greater professional accountability throughout the handover process. The responsibility for ensuring consistent handover quality should be shared between nurse managers and those who do the actual handover practices.

Keywords

nursing handover; professional ethics; social responsibility; accountability; patient care

Letter to the Editors

The letter aims to draw attention to a recent article published in the Belitung Nursing Journal that sheds light on nurses' narratives in the implementation and evaluation of handover. I read the article "Nursing handover in the Indonesian hospital context: Structure, process, and barriers" by Yetti et al. (2021) with great interest. This fundamental aspect of nursing is receiving more attention, and it represents an important example of an effort to address the issue of patient safety and continuity of care. Patient or clinical handover entails more than just providing information about what happened to patients during the previous shift. It displays the nurse's professional ethics and the integrity of the profession. When Yetti et al. (2021) observed that some nurses were absent during the handover time, I was unconvinced that this was a one-time narrative that could potentially lead to communication failures. According to some evidence, one of the leading causes of reduced safety and quality of services and patient discontent is a lack of communication between incoming and outgoing nurses during the handover process (Raeisi et al., 2019). Communication quality embraces all interpersonal behaviours that lead to improved conversation and productive relationships among colleagues, not just the transmission of technical facts (Balka et al., 2013).

Several of the findings from Yetti et al. (2021) also hold interest. First, their insights about the importance of having clear guidelines are relevant because it helps nurses structure their handover communication to a greater extent. A good handover, however, needs more than just providing guidelines. Effective patient handover practices do not simply happen; they require education, training, practice, assessment, and feedback. Universities, for example, have a responsibility to guarantee that good clinical handover practice is adopted (Cowan et al., 2018). Educational intervention may

only be the first step in establishing a long-term culture of professional communication based on mutual support (Losfeld et al., 2021). However, patient handover training and practice may not always be prioritised because of constraints within the university curricula and hospital training (Burgess et al., 2020).

Second, I believe that perceived barriers associated with the handover, which has been widely criticised as ineffective and time-consuming, are still a significant area of concern (Bruton et al., 2016). Thus, it is understandable that some nurses are overwhelmed by the handover practice. However, this does not have to be the case. It may be asserted that handover only becomes taxing when perceived as an additional set of tasks. Furthermore, if the handover is considered one of many "routine" tasks, it may lose its importance and value in daily nursing care. Subsequently, a strong focus outside of the handover procedure is required, emphasising professional accountability for all staff involved. For example, during the handover process, the outgoing staff should be able to first and foremost offer accurate information.

On the other hand, upcoming staff members have a professional obligation to inquire about any discrepancy, gap, or incomplete information obtained. This cross-examination session implies a dual obligation, especially if the patient care and needs can potentially be misinterpreted. One of the key factors contributing to inaccurate handovers is a lack of opportunities to ask questions and clarify information (Ginsburg, 2015). Thereby, having the opportunity to ask questions and receive updated information during handover would have a significant indirect connection with the quality of handover, owing to its ability to completely understand a patient's health and care plan (Pun, 2021).

Furthermore, while Yetti et al. (2021) propose reinforcing the importance of supervision, which I completely agree with, I believe that the responsibility for maintaining consistent handover quality should fall not just on nurse managers but

also on those who perform the actual handover activities. In summary, this crucial article sheds light on nurses' narratives in the implementation and evaluation of handover. As nurses carry out their professional obligation to ensure safe and effective handover, it appears that there are still areas of nuance within aspects of handover that could be carefully considered and improved. We learned about the consequences of a substandard handover and the impact on patient safety and well-being. As a result, nurses must not only ruminate their greater professional accountability throughout the handover process, but they must also maintain a high standard and quality of handover. This fundamental duty is built on the premise that nurses will carry out their responsibilities competently and without compromising the patient's safety.

Declaration of Conflicting Interest

The author declares that they have no conflict of interest in this study.

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Author's Contribution

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Data Availability

Not applicable.

References

- Balka, E., Tolar, M., Coates, S., & Whitehouse, S. (2013). Socio-technical issues and challenges in implementing safe patient handovers: Insights from ethnographic case studies. *International Journal of Medical Informatics*, 82(12), e345-e357. <https://doi.org/10.1016/j.ijmedinf.2012.11.001>
- Bruton, J., Norton, C., Smyth, N., Ward, H., & Day, S. (2016). Nurse handover: Patient and staff experiences. *British Journal of Nursing*, 25(7), 386-393. <https://doi.org/10.12968/bjon.2016.25.7.386>
- Burgess, A., van Diggele, C., Roberts, C., & Mellis, C. (2020). Teaching clinical handover with ISBAR. *BMC Medical Education*, 20(2), 1-8. <https://doi.org/10.1186/s12909-020-02285-0>
- Cowan, D., Brunero, S., Luo, X., Bilton, D., & Lamont, S. (2018). Developing a guideline for structured content and process in mental health nursing handover. *International Journal of Mental Health Nursing*, 27(1), 429-439. <https://doi.org/10.1111/inm.12337>
- Ginsburg, L. (2015). 'Speaking up' climate: A new domain of culture to measure and explore. *BMJ Quality & Safety*, 24, 661-663. <http://dx.doi.org/10.1136/bmjqs-2015-004598>
- Losfeld, X., Istas, L., Schoonvaere, Q., Vergnion, M., & Bergs, J. (2021). Impact of a blended curriculum on nursing handover quality: a quality improvement project. *BMJ Open Quality*, 10(1), e001024. <http://dx.doi.org/10.1136/bmjog-2020-001024>
- Pun, J. (2021). Factors associated with nurses' perceptions, their communication skills and the quality of clinical handover in the Hong Kong context. *BMC Nursing*, 20(1), 1-8. <https://doi.org/10.1186/s12912-021-00624-0>
- Raeisi, A., Rarani, M. A., & Soltani, F. (2019). Challenges of patient handover process in healthcare services: A systematic review. *Journal of Education and Health Promotion*, 8, 173. https://doi.org/10.4103/2Fjehp.jehp_460_18
- Yetti, K., Dewi, N. A., Wigiarti, S. H., & Warashati, D. (2021). Nursing handover in the Indonesian hospital context: Structure, process, and barriers. *Belitung Nursing Journal*, 7(2), 113-117. <https://doi.org/10.33546/bnj.1293>

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