JKG JURNAL KEPERAWATAN GLOBAL

E-ISSN: 2580-5916
ISSN: 2528-0120

Vol. 7, No. 2
Issue. December 2022
Page. 74-168

https://doi.org/10.37341/jkg.v0i0

Jurnal Keperawatan Global
Vol. 7, No. 2, December 2022
https://doi.org/10.37341/jkg.v0i0.595

Original Research

Factors Affecting Vaccine Distribution Activities For The Community With Door To Door Method

Chatarina Hatri Istiarini[1*], Resta Betaliani Wirata[2], Nurlia Ikaningtyas[3], Ratna Puspita Adiyasa[4]

[1,2,3,4] Faculty of Nursing Program Bethesda Yakkum Institute of Health Sciences, Yogyakarta, Indonesia

ABSTRACT

Background: *The "pick up the ball" system requires distribution facilities such as vehicles and special storage areas that guarantee the quality of vaccines, using the door-to-door method to speed up and reach more residents who need to get vaccinated directly at the home of the vaccine participant.*

Methods: *A cross-sectional study with a retrospective approach. This study collected data in 2 districts in Yogyakarta's special regency: the Kulon Progo district and the Gunung Kidul district. The sample for this study was drawn from a community of 249 vaccine recipients using random sampling.The original questionnaire for the factors was used. The pilot study results for the validity and reliability test for the original questionnaire showed that the validity of each statement was 0.4409 and the reliability was 0.772. A chi-square test was employed for data analysis.*

Results: *It was found that the participant's age, occupation, knowledge, and education level have no relationship with the activity of vaccination distribution. One factor has a relationship with the activity of vaccination distribution, namely the vaccine schedule factor with an OR value of 1,205.*

Conclusion: *The factor affecting the activity of distributing the COVID-19 vaccine was the respondent's schedule, while the factor that had no relationship was the participant's age, occupation, knowledge, and education level. Health workers can maximize the performance of the COVID-19 vaccination by using the door-to-door method by paying attention to the community's schedule.*

ARTICLE HISTORY
Received: October 21th, 2022
Accepted: December 7th, 2022

KEYWORDS
affecting, community, covid-19, factors, vaccine;

CONTACT
Chatarina Hatri Istiarini
✉
hatri@stikesbethesda.ac.id
Faculty of Nursing Program Bethesda Yakkum Institute of Health Sciences, Yogyakarta. Jln. Johar Nurhadi No.6, Kotabaru, Kec. Gondokusuman, Kota Yogyakarta, Daerah Istimewa Yogyakarta 55224.

Cite this as: Istiarini, C. H., Wirata, R. B., Ikaningtyas, N., & Adiyasa, R. P. (2022). Factors Affecting Vaccine Distribution Activities For The Community With Door To Door Method . *(JKG) Jurnal Keperawatan Global*, 74–83. https://doi.org/10.37341/jkg.v0i0.595

INTRODUCTION

One of the programs carried out to control the coronavirus pandemic is the COVID-19 vaccination program. Vaccines work by exposing small parts of the virus so the immune system can learn to recognize the source of the disease. Giving more than one dose of the vaccine increases the possibility of the body's immune system studying the virus and finding ways to ward off an advanced infection (CNN Indonesia, 2020).

The success of the vaccination program will depend on the uptake rate among the entire population. It is important to prepare and develop effective policies and messaging for vaccinations to maximize uptake when vaccines become available (Sherman et al., 2021). Challenges and concerns over the inequality and adequacy of the COVID-19 vaccine cover four things: a lack of supply, a gap in access to developing or poor countries, an imbalance in coverage, and the distribution of logistics (Kesehatan, 2020).

Also, many respondents do not believe that COVID-19 (SARS-CoV-2) is real, likely to be contagious, or threatening public health. Several respondents stated that the pandemic is a product of propaganda, conspiracy, hoax, and/or deliberate attempts to spread fear through media for profit (Lasmita et al., 2021). Some of the efforts made by the Indonesian government include compiling a communication strategy that takes into account the diversity of information needs of the community before, during, and after the introduction of vaccines, especially those related to safety, effectiveness, and even the distribution.

Vaccines applying efforts to prepare the COVID-19 vaccine to the fullest, including making adjustments to the Risk Communication and Community Empowerment (KRPM) steps. Including medical staff as the primary party involved in planning communications and increasing its capacity and finding ways to reach people with the most limited access to information, such as those who are classified as poor and vulnerable (Kesehatan, 2020). In early April 2021, the Deputy Speaker of the Indonesian House of Representatives, Azis Syamsuddin, asked the government to implement a "jemput bola" or "pick up the ball" system in the COVID-19 vaccination program, namely visiting people who have been registered as vaccine recipients in the RT/RW scope and not focusing on the construction of vaccination centers that far away and causing crowds (Parlementaria, 2021).

In April 2021, the government appreciated the innovation of the "pick up the ball" system carried out by the community to accelerate the achievement of vaccinations for the elderly. The "pick up the ball" system was then carried out by various parties to reach people with disabilities, schools, and communities that were constrained by geographical conditions. Not only that, the State Intelligence Agency, together with the TNI and POLRI, also took part in carrying out vaccinations with a "pick up the ball" system that targets the general public in areas with low vaccination achievements.

With the involvement of actors outside of health, the achievement of vaccination will be faster, even in the midst of limited government resources. The "pick up the ball" system is effective in accelerating vaccination achievement by bringing vaccination services closer to the community so that public accessibility increases (Yuningsih, 2021). Regarding people's willingness to be vaccinated, there will definitely be groups of people who refuse to be vaccinated, even though the "pick up the ball" system has been implemented. The "pick up the ball" system requires preparation in advance. Preparations were made by all relevant stakeholders in socialization efforts, including preventing hoax news and various innovations, so that people would want to be vaccinated.

In addition, people are often confused by the number of parties who carry out vaccinations, including the "pick up the ball" system in a community environment. Due to a lack of coordination in mapping and planning vaccination, there is an overlap in the implementation of vaccinations at the same time. In this case, vaccination organizers can coordinate with the local government to map and plan vaccinations carried out by

various parties in their working areas. Coordination is also needed to ensure the availability of vaccine stocks. Resource support in the implementation of the "pick up the ball" system. There are still areas that have limited facilities that support the distribution of vaccines to carry out a "pick up the ball" system, especially in areas with geographical conditions that are difficult to reach.

The "pick up the ball" system requires distribution facilities, such as vehicles and special storage areas, that guarantee the quality of vaccines from the warehouse until the vaccine is injected into the community. In addition, support also comes from the presence of health workers who carry out vaccinations. Therefore, it is necessary to cooperate with all parties, not only the central government and local governments, but other institutions, private parties, communities, and the public, to participate in organizing the COVID-19 vaccination.

Since September 2021, Yakkum Emergency Unit (YEU) has continued to carry out vaccination activities for at-risk groups in several areas in Gunungkidul Regency, Sleman Regency, Kulon Progo Regency, and Klaten Regency, Central Java. As of December 31, 2021, as many as 2,783 people have received vaccinations facilitated by YEU, namely the "pick up the ball" system using the door-to-door method to speed up and reach more residents who need to get vaccinated. The areas that received vaccinations using the door-to-door method were the districts of Gunungkidul and Kulon Progo.

This area was chosen because it is still difficult for the community to reach in terms of finding health facilities, and the population is quite widely spread in the districts of Gunungkidul and Kulon Progo. The service carried out by the vaccinator in the door-to-door method is to meet the community directly at the home of the vaccine participant. So that the vaccine can be directly given to the community. Based on the data above, the researcher wants to analyze what factors affect the distribution of the COVID-19 vaccine to the community.

MATERIALS AND METHOD

This was a cross-sectional study with a retrospective approach. This study was conducted in the vaccine recipient community as a response. This study collected data in two districts in Yogyakarta's special regency: one in Kulon Progo and the other in Gunungkidul. Accidental sampling was used to sample the vaccine recipients' community. The inclusion criteria for the sample were getting the vaccine from the YEU program, being willing to fill out a questionnaire, and being able to use the Indonesian language. Meanwhile, the exclusion criteria were vaccine recipients with disabilities. This study's sample included 249 vaccine recipients.

In this study, original questionnaires were delivered to the respondents. The total was 11 questions for the vaccine recipients' community, consisting of questions regarding age, occupation, knowledge about the COVID-19 vaccine, level of education, vaccine schedule, and distribution of vaccinations. The validity results for the vaccine recipients' community questionnaire on each question were >0.4409, and the reliability results were 0.772. Data were analyzed using the Chi-Square test in SPSS version 26.

This research was conducted after passing the ethical clearance at the Health Research Ethics Committee of STIKES Bethesda Yakkum with the number: 075/KEPK.02.01/VI/2022. Before conducting the study, the researchers explained the purpose of the study, the procedures for data collection, and the benefits of participation to the potential subjects. The participants were offered the opportunity to ask any

questions and were assured that they could withdraw from the study at any time. Their personal information was kept confidential.

RESULTS

The results of the calculation of the characteristics of the respondents affecting the vaccine distribution activities for the community with the door-to-door method can be seen in the master table in Table 1.

Tabel 1. Respondent's characteristic affecting the vaccine distribution activities for the community with door to door method

Variable	f	%
Age		
Late adolescent (17-25 years old)	19	7,6
Early adult (26-35 years old)	31	12,4
Late adult (36-45 years old)	34	13,7
Early elderly (46-55 years old)	49	19,7
Late elderly (56-65 years old)	61	24,5
Senior citizen (more than 65 years old)	55	22,1
Occupation		
Student	11	4,4
Civil servant	15	6
Private sector employee	23	9,2
Farmer	96	38,6
Breeder	35	14,1
Businessman	22	8,8
Laborer	47	18,9
Knowledge		
High	119	47,8
Middle	122	49
Low	8	3,2
Level of education		
No school	38	15,3
Kindergarten	11	4,4
Primary school	71	28,5
Junior high school	74	29,7
Senior high school	40	16,1
College	15	6
Vaccine schedule		
Appropriate	222	89,2
Inappropriate	27	10,8
Vaccine Distribution		
Well distributed	217	87,1
Sufficiently distributed	32	12,9

In table 1, it is found that the characteristics of the majority of research respondents are aged 56–65 years old (late elderly) and most have farming jobs (38.6%). In terms of the respondents' knowledge about the COVID-19 vaccine, it was found that the respondents had medium category knowledge (49%), while the education

level of the respondents was mostly that of junior high school graduates (29.7%). In the schedule of respondents receiving the COVID-19 vaccine, it was found that the schedule was the most appropriate (89.2%) and the distribution of the COVID-19 vaccine was well distributed (87.1%).

Table 2 show that there is not any factor affecting the vaccine distribution activities for the community with door to door method. Age of vaccinator, occupation, knowledge, level of education, and vaccine schedule not affect to vaccine distribution activities.

Tabel 2. Analysis factors affecting the vaccine distribution activities for the community with door to door method

Variable		Distribusi Vaksin		Total	*Result*
		Well distributed	**Sufficiently distributed**		
Age of vaccinator	Late adolescent (17-25 years old)	16	3	19	***p value*** 0,364
	Early adult (26-35 years old)	28	3	31	
	Late adult (36-45 years old)	27	7	34	
	Early elderly (46-55 years old)	40	9	49	
	Late elderly (56-65 years old)	56	5	61	
	Senior citizen (more than 65 years old)	50	5	55	
Occupation	Student	10	1	11	***p value*** 0,807
	Civil servant	13	2	15	
	Private sector employee	20	3	23	
	Farmer	86	10	96	
	Breeder	28	7	35	
	Businessman	18	4	22	
	Laborer	42	5	47	
Knowledge	High	107	12	119	***p value*** 0,323
	Middle	104	18	122	
	Low	6	2	8	
Level of education	No school	36	2	38	***p value*** 0,373
	Kindergarten	10	1	11	
	Primary school	61	10	71	
	Junior high school	61	13	74	
	Senior high school	37	3	40	
	College	12	3	15	
Vaccine schedule	Appropriate	194	28	222	***p value*** 0,747
	Inappropriate	23	4	27	***OR*** 2,333

DISCUSSION

In this section, we analyze and discuss what factors influence the activity of vaccination distribution, which is carried out door to door. There have not been many studies regarding the factors that influence the activity of vaccination distribution. Other studies (Kamal et al., 2021) (Roy et al., 2022) discuss additional potential factors influencing COVID-19 vaccine acceptance and hesitancy, willingness, receipt, and awareness.

The results of statistical tests showed that the age of most vaccine participants was in the late-embedded elderly category, with an age range of 56–65 years, which accounted for as much as 24.5% of the total. This age is the main target for the door-to-door COVID-19 vaccination. Obstacles for the elderly who cannot travel long distances to vaccinate. So the conducted door-to-door vaccination can reach all people.

According to Budiono and Rivai's, (2021) the elderly face barriers to receiving services due to their weaker physical condition to go to health services (Budiono & Rivai, 2021). In addition, the distance from home to the location of health services is quite far, and the cost of transportation as a cost incurred from home to health service facilities is quite high, thus preventing the elderly from getting their health fulfillment facilities (Laksono et al., 2019). The increase in age will be accompanied by a decrease in the physical body, the emergence of various diseases, body balance, and the risk of falling. The health status of the elderly, which decreases with age, is contrary to the desire of the elderly themselves to stay healthy (Courtin & Knapp, 2017).

The results of the statistical test found that the age of the vaccine participants did not affect the vaccination distribution activities carried out door to door. This is evidenced by the p-value > (0.364 > 0.05), which means that the age of the vaccine participants does not significantly affect the vaccination distribution activity, which is carried out door to door. In the implementation of door-to-door vaccines, officers go directly to the elderly so that the distribution of vaccines goes directly to the target, so it does not affect the elderly.

In line with the research of Fulmer et al., (2021) it was found that health services that were directly provided to the elderly would greatly have an impact on improving their health (Fulmer et al., 2021). The COVID-19 vaccination activity is an activity to improve health in terms of disease prevention (Tonnara et al., 2022). Community disease prevention is carried out by health workers of all ages, not just the elderly, but all ages who are targets in improving health (Arregocés-Castillo et al., 2022).

In addition to age, the respondent's occupation is one of the factors studied in this study. The results of statistical tests show that most occupations of vaccine participants are in the former category, by as much as 38.6%. The districts of Gunung Kidul and Kulon Progo are areas that have many fertile land fields, so many of the residents work as farmers. Most of the residents of the Gunung Kidul and Kulon Progo districts are farmers.

This is supported by the areas in the two districts where there are still large areas of land to be managed into rice fields (Kuswantoro & Pramono, 2020) (Saladi et al., 2020). The results of the statistical test found that the work of the vaccine participants did not affect the vaccination distribution activities carried out door to door. This is supported by a p-value greater than (0.807 > 0.05), indicating that the work of vaccine participants has no significant impact on vaccination distribution activities carried out door to door.

Vaccine research on the acceptability of the COVID-19 vaccine was conducted in all genders and occupations. Because the workplace is one of the most common places for the COVID-19 virus to spread, the COVID-19 vaccination does not take work or gender into account (Al Kaabi et al., 2021) (Harapan et al., 2020). According to the results of statistical tests, the level of knowledge of respondents about the COVID-19 vaccine is in the middle category, with as many as 49%.

The results of the statistical test revealed that vaccine participants' knowledge had no effect on vaccination distribution activities carried out door to door. This is evidenced by a p-value> (0.323 > 0.05), which means that the knowledge of vaccine participants does not significantly affect the activity of vaccination distribution, which is carried out door to door. The amount of information obtained by respondents regarding the COVID-19 vaccine is very large, starting from community leaders, medical officers, and even social media. Since it was reported that the COVID-19 vaccine had been found, a lot of information has begun to spread. It's just that both true and hoax news are accepted (Kesehatan, 2020) (Lasmita et al., 2021).

Knowledge of the COVID-19 vaccine is an important factor in the decision to receive the vaccine. In a study conducted by Kamal et al., (2021) the risk of morbidity and the possible risk of death motivated respondents to be willing to receive the vaccine (Kamal et al., 2021). Respondents who believed that they were at risk of being infected with COVID-19 had a 1.48 times higher chance of agreeing to be vaccinated (Sherman et al., 2021) (Smith et al., 2017).

These findings indicate that respondents perceive the COVID-19 vaccine as a necessary measure to prevent new infections as well as disease transmission. In addition, knowledge about the dangers of the COVID-19 disease will further influence the willingness to receive the vaccine, which may be due to the increase in the COVID-19 mortality rate. This study is in line with a study conducted in the UK in which a population at greater clinical risk of serious illness from COVID-19 showed a higher intention to vaccinate (Sherman et al., 2021).

In addition to knowledge, the level of education is a factor studied in this study. The results of statistical tests showed that the education of most vaccine participants was in the junior high school category by as much as 29.7%. The results of the statistical test found that the education of the vaccine participants did not affect the vaccination distribution activities carried out door to door. This is evidenced by the p-value> (0.373 > 0.05), which means that the education of vaccine participants does not significantly affect the activity of vaccination distribution, which is carried out door to door.

Education level is also a predictor of reluctance to receive the COVID-19 vaccine. A study conducted by Jabessa and Bekele in 2022 revealed that higher vaccine availability was reported with increasing education levels (Jabessa & Bekele, 2022). Other researchers also agree that better-educated individuals are more likely to receive COVID-19 vaccination Graffigna et al., (2020) and lower levels of education are associated with significant levels of vaccine aversion (Khubchandani et al., 2021). Better-educated people are more concerned about health and well-being because they have access to more sources of information and become more involved in life events that may affect them, such as the COVID-19 vaccine (Islam et al., 2021).

The results of statistical tests show that the most appropriate vaccine implementation schedule is in the appropriate category by as much as 89.2%. The results of the statistical test found that the vaccine implementation schedule had an

effect on the door-to-door vaccination distribution activities carried out door-to-door. This is evidenced by the results of the Odds Ratio (OR) test, which is a measure of the exposure association (risk factor), and the OR (1,205) results, which mean that the vaccine implementation schedule has a 1-fold effect on vaccination distribution activities carried out door to door.

The assumption from the researcher is that this can happen due to work schedules that are mostly carried out in the morning by the community, maximizing the door-to-door implementation of the COVID-19 vaccine, which is carried out starting at noon, so that the community is right at home and can immediately receive the vaccine COVID-19. This COVID-19 vaccine is carried out door to door by first collecting data from the intended area. So that the vaccination target data and schedule have been adjusted to account for the presence of people who are right in their respective homes. This increases the likelihood that people living in remote areas will be able to receive the COVID-19 vaccine directly.

There were five overall factors studied for the vaccination participants: the participant's age, occupation, knowledge, education level, and vaccine schedule. In the bivariate analysis, it was found that only 1 factor has a relationship with the activity of vaccination distribution: the vaccine schedule factor, with an OR value of 1,205, which means that the vaccine implementation schedule has a 1-fold effect on the vaccination distribution activity, which is carried out door to door. Meanwhile, the participants' age, occupation, knowledge, and education have no relationship with the vaccination distribution activities, which were carried out door to door. The analysis of vaccine participant responses was not continued to the multivariate analysis stage because there was only one influential factor.

CONCLUSION

The most important finding was that factors affecting the activity of distributing the COVID-19 vaccine were the respondent's vaccine schedule, while the factors that had no relationship were the participant's age, occupation, knowledge, and education level. COVID-19 vaccination is one of the ways to prevent the spread of the COVID-19 virus in the community. By using the door-to-door method, this prevention can be further prevented with a wider and more equitable reach of the Indonesian people. Health workers can maximize the performance of the COVID-19 vaccination by using the door-to-door method and paying attention to the community's schedule so that they can directly meet with vaccine recipients.

REFERENCES

Al Kaabi, N., Zhang, Y., Xia, S., Yang, Y., Al Qahtani, M. M., Abdulrazzaq, N., Al Nusair, M., Hassany, M., Jawad, J. S., Abdalla, J., Hussein, S. E., Al Mazrouei, S. K., Al Karam, M., Li, X., Yang, X., Wang, W., Lai, B., Chen, W., Huang, S., … Yang, X. (2021). Effect of 2 Inactivated SARS-CoV-2 Vaccines on Symptomatic COVID-19 Infection in Adults: A Randomized Clinical Trial. *JAMA - Journal of the American Medical Association*, *326*(1), 35–45. https://doi.org/10.1001/jama.2021.8565

Arregocés-Castillo, L., Fernández-Niño, J., Rojas-Botero, M., Palacios-Clavijo, A., Galvis-Pedraza, M., Rincón-Medrano, L., Pinto-Álvarez, M., Ruiz-Gómez, F., & Trejo-Valdivia, B. (2022). Effectiveness of COVID-19 vaccines in older adults in

Colombia: a retrospective, population-based study of the ESPERANZA cohort. *The Lancet Healthy Longevity*, *3*(4), e242–e252. https://doi.org/10.1016/S2666-7568(22)00035-6

Budiono, N. D. P., & Rivai, A. (2021). Faktor-faktor yang mempengaruhi kualitas hidup lansia. *Jurnal Ilmiah Kesehatan Sandi Husada*, *10*(2), 371–379. https://doi.org/10.35816/jiskh.v10i2.621

Courtin, E., & Knapp, M. (2017). Social isolation, loneliness and health in old age: a scoping review. *Health and Social Care in the Community*, *25*(3), 799–812. https://doi.org/10.1111/hsc.12311

Fulmer, T., Reuben, D. B., Auerbach, J., Fick, D. M., Galambos, C., & Johnson, K. S. (2021). Actualizing better health and health care for older adults. *Health Affairs*, *40*(2), 219–225. https://doi.org/10.1377/hlthaff.2020.01470

Graffigna, G., Palamenghi, L., Boccia, S., & Barello, S. (2020). Relationship between citizens' health engagement and intention to take the covid-19 vaccine in italy: A mediation analysis. *Vaccines*, *8*(4), 1–11. https://doi.org/10.3390/vaccines8040576

Harapan, H., Wagner, A. L., Yufika, A., Winardi, W., Anwar, S., Gan, A. K., Setiawan, A. M., Rajamoorthy, Y., Sofyan, H., & Mudatsir, M. (2020). Acceptance of a COVID-19 Vaccine in Southeast Asia: A Cross-Sectional Study in Indonesia. *Frontiers in Public Health*, *8*(July), 1–8. https://doi.org/10.3389/fpubh.2020.00381

Islam, M. S., Siddique, A. B., Akter, R., Tasnim, R., Sujan, M. S. H., Ward, P. R., & Sikder, M. T. (2021). Knowledge, attitudes and perceptions towards COVID-19 vaccinations: a cross-sectional community survey in Bangladesh. *BMC Public Health*, *21*(1), 1–11. https://doi.org/10.1186/s12889-021-11880-9

Jabessa, D., & Bekele, F. (2022). Willingness to receive the COVID-19 vaccine and associated factors among residents of Southwestern Ethiopia: A cross-sectional study. *Patient Preference and Adherence*, *16*(May), 1177–1185. https://doi.org/10.2147/PPA.S362264

Kamal, A. H. M., Sarkar, T., Khan, M. M., Roy, S. K., Khan, S. H., Hasan, S. M. M., Hossain, M. S., Dell, C. A., Seale, H., & Islam, M. S. (2021). Factors Affecting Willingness to Receive COVID-19 Vaccine Among Adults: A Cross-sectional Study in Bangladesh. *Journal of Health Management*. https://doi.org/10.1177/09735984211050691

Kesehatan, K. (2020). *Survei Penerimaan Vaksin COVID-19 di Indonesia*. *November*.

Khubchandani, J., Sharma, S., Price, J. H., Wiblishauser, M. J., Sharma, M., & Webb, F. J. (2021). COVID-19 Vaccination Hesitancy in the United States: A Rapid National Assessment. *Journal of Community Health*, *46*(2), 270–277.

https://doi.org/10.1007/s10900-020-00958-x

Kuswantoro, U. A., & Pramono, R. W. D. (2020). Peran Kota Wonosari Terhadap Perkembangan Wilayah. *Jurnal Penataan Ruang*, *15*(1), 23. https://doi.org/10.12962/j2716179x.v15i1.6826

Laksono, A. D., Nantabah, Z. K., & Wulandari, R. D. (2019). Hambatan Akses ke Puskesmas pada Lansia di Indonesia. *Buletin Penelitian Sistem Kesehatan*, *21*(4), 228–235. https://doi.org/10.22435/hsr.v21i4.887

Lasmita, Y., Misnaniarti, M., & Idris, H. (2021). Analisis Penerimaan Vaksinasi Covid-19 Di Kalangan Masyarakat. *Jurnal Kesmas (Kesehatan Masyarakat) Khatulistiwa*, *8*(4), 195. https://doi.org/10.29406/jkmk.v8i4.3056

Parlementaria, B. (2021). *Varian Baru Covid-19 Menyebar, DPR Minta Perbatasan Diperketat* (Issue April).

Roy, D. N., Biswas, M., Islam, E., & Azam, M. S. (2022). Potential factors influencing COVID-19 vaccine acceptance and hesitancy: A systematic review. *PLoS ONE*, *17*(3 March), 1–20. https://doi.org/10.1371/journal.pone.0265496

Sadali, M. I., Alfana, M. A. F., Fajar, K. I. D., & Prianggoro, A. A. (2020). Pengembangan potensi wilayah di Kecamatan Samigaluh, Kabupaten Kulon Progo melalui pemetaan potensi wisata berbasis partisipasi. *Jurnal Pendidikan Geografi*, *25*(1), 1–16. https://doi.org/10.17977/um017v25i12020p001

Sherman, S. M., Smith, L. E., Sim, J., Amlôt, R., Cutts, M., Dasch, H., Rubin, G. J., & Sevdalis, N. (2021). COVID-19 vaccination intention in the UK: results from the COVID-19 vaccination acceptability study (CoVAccS), a nationally representative cross-sectional survey. *Human Vaccines and Immunotherapeutics*, *17*(6), 1612–1621. https://doi.org/10.1080/21645515.2020.1846397

Smith, L. E., Amlôt, R., Weinman, J., Yiend, J., & Rubin, G. J. (2017). A systematic review of factors affecting vaccine uptake in young children. *Vaccine*, *35*(45), 6059–6069. https://doi.org/10.1016/j.vaccine.2017.09.046

Tonnara, G., Piselli, P., Cimaglia, C., Arlotti, M., Sacchini, E., Manoni, S., Zani, A., Muccioli, F., Laderchi, A., Rabini, S., Antinori, A., Vaia, F., Nicastri, E., & Girardi, E. (2022). The impact of COVID-19 vaccination program in the Republic of San Marino: focus on effectiveness of Gam-COVID-Vac. *Clinical Microbiology and Infection*, *xxxx*. https://doi.org/10.1016/j.cmi.2022.06.026

Yuningsih, R. (2021). Sistem "Jemput Bola" Percepatan Vaksinasi Covid-19. *Pusat Penelitian Badan Keahlian DPR RI*, *xiii*(September 2021).

Jurnal Keperawatan Global
Vol. 7, No. 2, December 2022
https://doi.org/10.37341/jkg.v0i0.626

Original Research

Analysis Of Factors Affecting Recurrence People With Mental Disorders

Insiyah[1*], Endang Caturini Sulistyowati[2]

[1,2] Department of Nursing Poltekkes Kemenkes Surakarta, Indonesia

ABSTRACT

Background: *Currently, there is no main factor of recurrence in patients with mental disorders. This study aims to analyze which factors most determine recurrence in patients with mental disorders.*

Methods: *A quantitative study included 143 respondents who were selected using random sampling at the Public Health Center Surakarta. The research instruments were the Relapse Symptom Questionnaire, General Self-Efficacy Scale (GSES), Social Support Questioner, Satisfaction With Life Scale (SWLS), Dysfunctional Attitude Scale (DAS), and Drug Attitude Inventory (DAI). The analyses used were Spearmen's rank (rho) to analyze factors that influence the recurrence of people with mental disorders and multiple logistic regression tests to analyze predictors of relapse.*

Results: *There was a critical negative connection between self-efficacy and relapse in people with mental disorders (Rs = -0.414, p = 0.000). A positive connection between dysfunctional attitudes and relapse of people with mental disorders (Rs = 0.343, p = 0.000), a significant positive relationship between life satisfaction and symptoms of recurrence in patients with mental disorders (Rs = 0.346, p = 0.000), a significant positive relationship between social support and symptoms of mental disorder recurrence (Rs = 0.753, p = 0.000), and a significant positive relationship between medication adherence and relapse in patients with mental disorders (Rs = 0.294, p = 0.000) were also proved. Adherence to taking medication was an indicator of recurrence in patients (p = 0.000, OR = 22).*

Conclusion: *Medication adherence was the main factor in the recurrence of mental disorders in people. Medication adherence must be improved to prevent a recurrence.*

ARTICLE HISTORY
Received: November 22th, 2022
Accepted: December 8th, 2022

KEYWORDS
mental disorder, recurrence;

CONTACT
Insiyah
✉
insiyahkamal@gmail.com
Department of Nursing Poltekkes Kemenkes Surakarta. Jln. Letjen Sutoyo, Mojosongo, Surakarta, Indonesia.

Cite this as: Insiyah, I., & Sulistyowati, E. C. (2022). Analysis Of Factors Affecting Recurrence People With Mental Disorders. *(JKG) Jurnal Keperawatan Global*, 84–94. https://doi.org/10.37341/jkg.v0i0.626

INTRODUCTION

The expansion in the extent of mental issues in the information acquired from Riset Kesehatan Dasar (Riskesdas) 2018 is critical when contrasted with Riskesdas 2013, up from 1.7% to 7% (Badan Penelitian dan Pengembangan Kesehatan, 2018). The duration of untreated psychosis and being treated as an inpatient can have an impact on

the achievement of a poor quality of life (Renwick et al., 2017). There are several trigger factors that cause patients to relapse with their mental illness. The first factor is patient compliance with taking medication.

Most of them do not take medication regularly. These cases are evidenced by the fact that 58% of them throw the medicine around the house or keep it in their pockets. The percentage of patients who regularly took medication was 56%. 49% of them rarely use health care facilities, while the rest (24%) refuse to use them. The third cause is family support, 31% of families lock patients at home. Furthermore, most of them do not take the time to communicate with patients.

From community factors, 42% of people prefer to avoid patients when they pass each other, and 38% of people also feel that patients are disturbing the community (Andriyani, Oktarisa, and Pratiwi, 2019). Relapse and stigma are separate stressors for families, so families must find appropriate service sources. Mental health nursing must pay attention to stigma and low knowledge as considerations in providing care for mental disorders (Fitryasari et al., 2018) (Alhadidi, Abdullah, Tang, Danaee, & Al Hadid, 2021).

There is a critical connection between drug adherence and patient repeats (p value = 0.022) with an opposite relationship, and that implies that the more obedient the patient is to taking medication, the lower the patient's recurrence (Mubin et al., 2019). A past report showed that there was a genuinely certain and solid relationship between loneliness and internalized stigma (P = 0.001, r = 0.854). It was observed that the schizophrenic patients had elevated degrees of internalized stigma and loneliness (Yildirim and Kavak Budak, 2020).

Schizophrenia patients need time to work on their mental side effects and to forestall a backslide, but those who lived in the public arena were regularly brought back to the emergency clinic promptly in light of the fact that the patients were indisciplined in taking the medication, there was an absence of family support, they had terrible relational relationships, and unpleasant occurrences occurred in their lives (Xiao et al., 2015). Early recurrence is closely related to clinical factors and how patients take advantage of existing health services. The sooner the patient and family recognize early symptoms and seek help, the more severe the patient's relapse can be prevented. Improvement of symptoms in first-episode patients occurs when the patient adheres to taking medication (Gentil et al., 2021) (Kaysen, 2019).

Mental prosperity specialists can lead patients to really check out various activities, advance their elevating standpoints in life to face and deal with issues, ask patients to set targets for themselves, and try to seek after their ideal life. This is the self-actualization (SA) practice of health-propelling ways of life (Chang et al., 2018). For mental patients with schizophrenia, the speed of readmission to the crisis center can be high, and the necessity for the continuation of significant care after hospitalization is huge, and a gigantic part of helping patients remain stable to thwart readmission is expected.

Regardless, such resources for continuing with care are consistently difficult to gain, especially in provincial organizations where induction to such organizations is limited and the heaviness of care is frequently as conceivable put-on family members who don't have formal training in zeroing in on patients with such mental afflictions. In such organizations, it is important to underline tutoring for the gatekeepers and developing a game plan of help from the neighborhood for both the patient and their parental figures to diminish parental figure burnout similarly as hinder rehospitalization

for the patient (Trang, 2018). There is a gap in previous studies related to factors that cause relapse in patients.

Patient recurrence can be influenced by individual factors internally, including adaptability, adherence to treatment. External factors, both those that give effect without conditioning or factors in the form of interventions for the purpose of reducing the occurrence of recurrences. The purpose of this study is to conduct research that can predict the incidence of recurrence so that appropriate interventions can be found to prevent recurrence.

MATERIALS AND METHOD

This research is a cross-sectional study to identify the factors associated with the recurrence of mental disorders in patients. The population in this study were individuals with mental issues in the functioning region of the Public Health Center in Surakarta City. This study's target population was 143 people. The sampling technique utilized by the researchers in this study was quota random sampling, where the researcher determined the number of respondents from each region, then representatives from each region were taken randomly. The inclusion criteria for the sample in this study are: being willing to be a respondent, having a history of mental disorders, having close family relations, or living at home with people with mental disorders.

This study identified factors associated with relapse in mental patients, including self-efficacy, social support, life satisfaction, dysfunctional attitudes, and medication adherence. The data collection tool in this study was a questionnaire containing questions about demographics consisting of age, sex, marital status, education level, and work status. The questionnaire also contains questions regarding recurrence symptoms as measured by a questionnaire developed by Rathod et al., (2015) and Velligan et al., (2018).

Furthermore, a questionnaire to measure the factors that influence the recurrence of people with mental disorders was developed, among others, the General Self-Efficacy Scale (GSES), developed by Schwarzer, R., and Jerusalem, M, (1995) and measuring social support using a social support questionnaire (Procidano & Heller, 1983). The Satisfaction with Life Scale (SWLS) from Diener, E., Emmons, RA, Larsen, RJ, and Griffin S, (1985) was used to estimate life satisfaction. The Dysfunctional Attitude Scale (DAS) (Hautzinger, Luka, & Trautmann, 1985) was used to measure dysfunctional attitudes; and the Drug Attitude Inventory (DAI) (Kane, Kissling, Lambert, & Parellada.

After obtaining permission from the health office, the researcher entered into a contract with the Community Health Center, nurses, volunteer health workers, families, and people with mental disorders. Data was collected on patients who visited community health centers in collaboration with nurses. When the survey is not completed, it is taken to the patient's home with the help of volunteer health workers to ensure that the patient continues to feel comfortable filling out the questionnaire. This research started from May to September 2021 in the Surakarta Health Center area. This study was followed by patients with mental disorders who met the inclusion criteria and obtained a sample of 143 people spread over 7 Public Health Centers in Surakarta City.

The data were analyzed using univariate, bivariate, and multivariate methods using SPSS for Windows version 25. The univariate analysis presented the demographic characteristics of people with mental disorders (gender, age, education level, occupation, and marital status), and recurrences were shown in the frequency

distribution. An analysis of bivariate test data with the Spearmen rank (rho) test was used to analyze the relationship between internal factors (self-efficacy, life satisfaction, dysfunctional attitudes) and external factors (social support, medication adherence) with the recurrence of mental disorders. Meanwhile, multivariate test data analysis with multiple logistic regression was used to analyze the recurrence predictors.

This research has been registered with the Health Research Ethics Commission of the Health Polytechnic of the Ministry of Health of Surakarta with the Ethical Clearance number: No.LB.02.02/1.1/6924.1/2021.

RESULTS

Table 1 shows that the mean age of the respondents is 44.08±13.903. The majority of respondents were male, with as many as 87 (60%) and 56 females (39.2 %). The percentage of respondents who graduated from elementary school and below was 69 (48.3%), while 24 graduated from junior high school and 50 graduated from senior high school (16.7% and 50%, respectively), and no respondent graduated from university. A total of 91 (63.6%) respondents are unemployed; only 52 (36.4%) have a job. As many as 89 (62.2%) are single.

Most of the respondents have a low level of self-efficacy, as much as 74 (51.7%). Respondents' life satisfaction at a high level was 85 (59.4%), while the respondent's dysfunctional attitude was at a low level of as much as 76 (53.1%). Most respondents have high social support, as many as 63 (44.0%), while adherence to taking medicine is also higher among respondents who adhere to taking medicine than among those who do not comply, namely 74 (51.7%) and 69 (48.3%).

Table 1. Frequency distribution based on respondents' demographics (N=143)

Demographic Characteristics of Respondents		N	%
Age (M, SD)	44.08±13.903		
Gender	Female	56	39.2
	Male	87	60.8
Education level	Elementary school and below	69	48.3
	Junior High School	24	16.7
	Senior High School and Above	50	35
Work Status	Unemployed	91	63.6
	Employed	52	36.4
Marital Status	Not married	89	62.2
	Divorce	4	2.8
	Married	50	35.0
Self-efficacy	High	69	48.3
	Low	74	51.7
Life satisfaction	High	85	59.4
	Moderate	47	32.9
	Low	11	7.7
Dysfunctional attitude	High	67	46.9
	Low	76	53.1
Social support	High	63	44.0
	Moderate	52	36.4
	Low	28	19.6

Demographic Characteristics of Respondents		N	%
Adherence to take medicine	Adhere	74	51.7
	No adhere	69	48.3

Table 2 showed that there is a relationship between internal factors (self-efficacy, life satisfaction, and dysfunctional attitudes) and the recurrence of mental disorders (p = 0.000). Self-efficacy showed that the Spearman coefficient (Rs) = -0.414 for 143 samples, which means a negative correlation, which means that there is a significant negative relationship between self-efficacy and the recurrence of people with mental disorders, and the higher the self-efficacy, the lower the recurrence of patients with mental disorders. In terms of life satisfaction and relapse among people with mental disorders, the result showed that Rs = 0.346.

This means that there is a positive correlation between variables. The significance test of the relationship shows that the probability of Sig. (2-tailed) is 0.000; there is a significant positive relationship between life satisfaction and symptom recurrence. The increasing need for life satisfaction increases the recurrence of patients with mental disorders. There is a significant positive relationship between dysfunctional attitudes and the relapse of people with mental disorders (Rs = 0.343, P = 0.000).

The relationship between external factors (social support and medication adherence) and the recurrence of mental disorders (table 2) showed that the Rs = 0.753 for 143 samples. This means that there is a positive correlation between variables. The significance test of the relationship shows that the probability of sig. (2-tailed) is 0.000. There is a significant positive relationship between social support and relapse symptoms. The relationship between medication adherence and recurrence in people with mental disorders. The results also showed that the Spearman coefficient (Rs) = 0.294, p = 0.000, which means that there is a significant positive relationship between medication adherence and relapse in people with mental disorders.

Table 2. The relationship between internal factors (self-efficacy, life satisfaction, dysfunctional attitudes) and external factors (social support, medication adherence) with the recurrence of mental disorders (N=143)

Internal and External Factors		N	Correlation Coefficient	Sig. (2-tailed)
Internal Factors	Self-efficacy	143	- 0.414	0.000
	Life satisfaction	143	.346**	0.000
	Dysfunctional attitude	143	.343**	0.000
Ekternal Factors	Social support	143	.753**	0.000
	Adherence to take medicine	143	.294**	0.000

Based on the multiple logistic regression test (table 3), it was shown that dysfunctional attitude and social support cannot predict recurrence in mental disorders (p > 0.05). Medication adherence is a predictor of recurrence in patients with mental disorders, with p = 0.000 and OR = 22.32. This means that patients who do not adhere to medication have a 22 times higher risk of recurrence than patients who adhere to medication after controlling for dysfunctional attitudes and social support variables.

Table 3. Predictive factors of recurrence of people with mental disorders

Predictive factors of recurrence		B	S.E.	Sig.	Exp(B)
Step 1[a]	Social support	21.104	4119.271	.996	1463385231.158
	Constant	-42.844	8238.542	.996	.000
Step 2[b]	Social support	21.950	3759.572	.995	3410387177.741
	Adherence to take medicine	3.624	.827	.000	37.500
	Constant	-49.827	7519.144	.995	.000
	Dysfunctional attitude	1.861	.961	.053	6.428
Step 3[c]	Social support	22.188	3687.855	.995	4326321249.204
	Adherence to take medicine	3.106	.870	.000	22.323
	Constant	-51.959	7375.710	.994	.000

DISCUSSION

There is a relationship between internal factors (self-efficacy, life satisfaction, and dysfunctional attitudes) with the recurrence of mental disorders.

A study by Chan et al., (2019) showed that the experience of self-stigmatization seemed to disable self-viability, which could adversely affect their nurturing confidence, inclination to look for proficient assistance, and capacity to deal with their own emotional well-being. The number of relapses and the severity of burdensome side effects were all associated with shame toward psychological maladjustment (Rayan et al., 2018). Self-criticism is a risk factor for the onset of depressive episodes. The primary change is in people's capacity to quiet and console themselves in tough spots, which can be thought of as something contrary to self-analysis, and this capacity seems to have recently discouraged people from relapsing into depression (Schanche et al., 2021).

The results of this study are in line with previous research. It was found that there was a significant relationship between dysfunctional beliefs about high goal achievement and higher symptoms of mania. This, however, did not last long. Dysfunctional beliefs related to increased dependence and lower self-esteem were associated with higher depressive symptoms, and these relationships persisted over time. There was no effect of accomplishment-related broken convictions on temperament.

Outrageous evaluations were associated with more burdensome side effects at pattern, yet this didn't endure over the long haul. Lack of self-confidence and dependence on others will have a negative impact on the likelihood of relapse. Relapse planning and nursing interventions that pay attention to the psychological aspects of the patient will help prevent a recurrence of depression. People who have a history of hospitalization due to heroin dependence also have a high potential for relapsing (Atuk & Richardson, 2021) (Vuong et al., 2021).

Higher Dysfunctional Attitude Scale scores predict a higher risk of recurrence. Ezawa et al., (2020). Relapses in young ladies were anticipated by two negative mental elements: high neuroticism and various useless mentalities. Psychotherapy tailored to the attributes and ways of behaving of masochist patients might be valuable. Mediations

ought to likewise zero in on dealing with and changing dysfunctional attitudes (Lukat et al., 2017).

Life satisfaction is low in the elderly and adolescents with bulimia nervosa. This can happen because of long periods of solitude. Health workers must be provided with adequate provisions to facilitate the possibility of preventing a decrease in quality of life by providing the availability to communicate and interact with other people (Arpacıoğlu et al., 2021) (van Doornik et al., 2021).

There is a relationship between external factors (social support, medication adherence) and the recurrence of mental disorders.

Previous studies are in line with the results of this study. Patients who do not have a family history of mental illness and feel a moderate level of family support have a 0.23-fold decreased risk of recurrence compared to those who have a high family history and support (Pothimas et al., 2020). The results of the same study found by M Dasril Samura, (2019) that there was a significant influence of social support on the recurrence of mental patients.

A higher level of social help in marriage was related to a decreased probability of any frequency of psychological maladjustment (a chance proportion (OR) of 0.78). Be that as it may, this relationship was contrasted by orientation (association test $t = 2.13$, $df = 29$, $p = 0.042$). Specifically, the relationship between conjugal assistance and the frequency of psychological maladjustment was statistically significant among women (aOR 0.74) but not among men (aOR 0.98) (Feder et al., 2019).

Early onset of the disease shows a lower outcome in terms of real social support than late onset (Studart-Bottó et al., 2021). Schizophrenia and bipolar disorder have fundamentally the same constructions, yet they contrast to some degree concerning hair cortisol focus (HCC), psychosocial stress, social help, clinical elements, clinical course, and results. Abnormal HCC adds to the intricacy of clinical attributes, particularly in schizophrenia (Yang et al., 2021).

According to previous research, there is a significant relationship between medication adherence and the occurrence of relapse in mental patients (M. Dasril Samura, 2019). Furthermore, previous research explains that medicine adherence is important for clinical and monetary results in full of feeling issues and psychosis. Information on the infection and its treatment can impact the patient's eagerness to follow the proposals of medical service suppliers and joint independent directions (Zavorotnyy, Ehrlich, & Nenadic, 2020).

Poorer adherence meant that symptoms were more severe, but in most cases only at the trend level ($p > 0.05$), with the exception of the correlation between the baseline Tablets Routine Questionnaire (TRQ) and the Montgomery Asberg Depression Rating Scale (MADRS) and Brief Psychiatric Rating Scale (BPRS), which was positive ($r = 0.20$ and $r = 0.21$, respectively) and significant ($p = 0.05$) (Sajatovic et al., 2015).

Medication adherence is a predictor of recurrence in patients with mental disorders.

Patients with a high level of medication adherence have a lower risk of recurrence than patients with moderate medication adherence (Pothimas et al., 2020). Many factors influence medication adherence in people with schizophrenia. These factors include social factors, drug side effects, the complexity of the treatment regimen, the

organization of the health care system, and factors related to the clinical team (Barnes & Haddad, 2020).

CONCLUSION

There is a connection between inward factors (self-viability, life fulfillment, useless mentalities) and outside factors (social help, prescription adherence) with the repeated occurrence of mental disorders (p = 0.000). Psychotherapy tending to the qualities and ways of behaving of masochist patients might be advantageous. Intercessions ought to likewise zero in on taking care of and changing broken perspectives.

The multiple logistic regression test showed that medication adherence is a predictor of recurrence in patients with mental disorders, with p = 0.000 and OR = 22.32. This means that patients who do not adhere to medication have a 22 times higher risk of recurrence than patients who adhere to medication after controlling for dysfunctional attitudes and social support variables. The existence of a relationship between internal and external factors and the recurrence of mental patients is a consideration for families and nurses in optimizing matters related to these internal and external factors.

Patient adherence to taking medication must be continuously improved through monitoring the patient's condition and conducting interventions that can improve medication adherence so that patient relapse can be prevented. Further research is recommended for intervention research for patients and families that can improve adherence to taking medication.

REFERENCES

Alhadidi, M., Abdullah, K. L., Tang, L. Y., Danaee, M., & Al Hadid, L. A. R. (2021). Knowledge about schizophrenia, insight into illness, and internalized stigma and their associated factors among people diagnosed with schizophrenia in a long-term care facility. *Perspectives in Psychiatric Care*, *57*(1), 225–234. https://doi.org/10.1111/ppc.12553Andriyani, S. H., Oktarisa, A., & Pratiwi, A. (2019). Triggered Recurrence Factors of Mental Illness Patients in an Emergency Unit in a Psychiatric Hospital. *Jurnal Ners*, *14*(3), 21. https://doi.org/10.20473/jn.v14i3.16955

Arpacıoğlu, S., Yalçın, M., Türkmenoğlu, F., Ünübol, B., & Çelebi Çakıroğlu, O. (2021). Mental health and factors related to life satisfaction in nursing home and community-dwelling older adults during COVID-19 pandemic in Turkey. *Psychogeriatrics*, *21*(6), 881–891. https://doi.org/10.1111/psyg.12762

Atuk, E., & Richardson, T. (2021). Relationship between dysfunctional beliefs, self-esteem, extreme appraisals, and symptoms of mania and depression over time in bipolar disorder. *Psychology and Psychotherapy: Theory, Research and Practice*, *94*(S2), 212–222. https://doi.org/10.1111/papt.12272

Badan Penelitian & Pengembangan Kesehatan. (2018). Hasil Utama Riset Kesehata Dasar (RISKESDAS). 44(8), 1–200. https://doi.org/10.1088/1751-8113/44/8/085201

Barnes, T. R. E., & Haddad, P. M. (2020). Working with People with Mental Health Difficulties to Improve Adherence to Medication. *The Wiley Handbook of Healthcare Treatment Engagement*, 430–454. https://doi.org/10.1002/9781119129530.ch23

Chan, S. Y. Y., Ho, G. W. K., & Bressington, D. (2019). Experiences of self-stigmatization and parenting in Chinese mothers with severe mental illness. *International Journal of Mental Health Nursing*, *28*(2), 527–537. https://doi.org/10.1111/inm.12558

Chang, B. H., Chen, B. W., Beckstead, J. W., & Yang, C. Y. (2018). Effects of a music-creation programme on the anxiety, self-esteem, and quality of life of people with severe mental illness: A quasi-experimental design. *International Journal of Mental Health Nursing*, *27*(3), 1066–1076. https://doi.org/10.1111/inm.12414

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. Journal of Personality Assessment, 49, 71-75.

Ezawa, I. D., Forand, N. R., & Strunk, D. R. (2020). An examination of dysfunctional attitudes and extreme response styles as predictors of relapse in guided internet-based cognitive behavioral therapy for depression. *Journal of Clinical Psychology*, *76*(6), 1047–1059. https://doi.org/10.1002/jclp.22955

Feder, K. A., Heatherington, L., Mojtabai, R., & Eaton, W. W. (2019). Perceived Marital Support and Incident Mental Illness: Evidence from the National Comorbidity Survey. *Journal of Marital and Family Therapy*, *45*(4), 668–683. https://doi.org/10.1111/jmft.12343

Fitryasari, R., Nursalam, N., Yusuf, A., Hargono, R., Lin, E. C. L., & Tristiana, R. D. (2020). Development of a family resiliency model to care of patients with schizophrenia. *Scandinavian Journal of Caring Sciences*, (9). https://doi.org/10.1111/scs.12886

Gentil, L., Grenier, G., & Fleury, M. J. (2021). Factors Related to 30-day Readmission following Hospitalization for Any Medical Reason among Patients with Mental Disorders: Facteurs liés à la réhospitalisation à 30 jours suivant une hospitalisation pour une raison médicale chez des patients souffrant d. *Canadian Journal of Psychiatry*, *66*(1), 43–55. https://doi.org/10.1177/0706743720963905

Hautzinger, M., Luka, U., & Trautmann, R. D. (1985). Skala dysfunktionaler Einstellungen—Eine deutsche Version der Dysfunctional Attitude Scale [Dysfunctional Attitude Scale: A German version of the Dysfunctional Attitude Scale]. *Diagnostica*, *31*(4), 312–323.

Kane, J., Kissling, W., Lambert, T., & Parellada, E. (2008). Adherence rating scales. *Cerp*, 10. Retrieved from http://cerp.excom21.net/training/train4_4.html

Kaysen, D. L. (2019). Medication treatment response reduced after relapse in patients

with schizophrenia. *The Brown University Psychopharmacology Update*, *30*(4), 4–5. https://doi.org/10.1002/pu.30412

Lukat, J., Becker, E. S., Lavallee, K. L., van der Veld, W. M., & Margraf, J. (2017). Predictors of Incidence, Remission and Relapse of Axis I Mental Disorders in Young Women: A Transdiagnostic Approach. *Clinical Psychology and Psychotherapy*, *24*(2), 322–331. https://doi.org/10.1002/cpp.2026

M Dasril Samura, T. (2019). *GANGGUAN JIWA DENGAN MODEL STRES ADAPTASI STUART OBAT SEMBADA MEDAN Drug Dependency 2019 . This research is quantitative with a cross sectional*. *1*(2), 63–69.

Mubin, M. F., Riwanto, I., Soewadi, Sakti, H., & Erawati, E. (2020). Psychoeducational therapy with families of paranoid schizophrenia patients. *Enfermeria Clinica*, *30*(5), 326–332. https://doi.org/10.1016/j.enfcli.2018.12.006

Pothimas, N., Tungpunkom, P., Chanprasit, C., & Kitsumban, V. (2020). A cross-sectional study of factors predicting relapse in people with schizophrenia. *Pacific Rim International Journal of Nursing Research*, *24*(4), 448–459.

Procidano, M. E., & Heller, K. (1983). Measures of perceived social support from friends and from family: Three validation studies. *American Journal of Community Psychology*, *11*(1), 1–24. https://doi.org/10.1007/BF00898416

Rathod, S., Kingdon, D., Pinninti, N., Turkington, D., & Phiri, P. (2015). Recovery, Relapse Prevention, and Finishing Therapy. *Cultural Adaptation of CBT for Serious Mental Illness*, 273–292. https://doi.org/10.1002/9781118976159.ch11

Rayan, A., Mahroum, M. H., & Khasawneh, A. (2018). The correlates of stigma toward mental illness among Jordanian patients with major depressive disorder. *Perspectives in Psychiatric Care*, *54*(2), 192–197. https://doi.org/10.1111/ppc.12222

Renwick, L., Drennan, J., Sheridan, A., Owens, L., Lyne, J., O'Donoghue, B., … Clarke, M. (2017). Subjective and objective quality of life at first presentation with psychosis. *Early Intervention in Psychiatry*, *11*(5), 401–410. https://doi.org/10.1111/eip.12255

Sajatovic, M., Levin, J. B., Sams, J., Cassidy, K. A., Akagi, K., Aebi, M. E., … Tatsuoka, C. (2015). Symptom severity, self-reported adherence, and electronic pill monitoring in poorly adherent patients with bipolar disorder. *Bipolar Disorders*, *17*(6), 653–661. https://doi.org/10.1111/bdi.12326

Schanche, E., Vøllestad, J., Visted, E., Lillebostad Svendsen, J., Binder, P. E., Osnes, B., … Sørensen, L. (2021). Self-criticism and self-reassurance in individuals with recurrent depression: Effects of Mindfulness-Based Cognitive Therapy and relationship to relapse. *Counselling and Psychotherapy Research*, (December 2020), 1–12. https://doi.org/10.1002/capr.12381

Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, Measures in health psychology: A user's portfolio. Causal and control beliefs (pp. 35-37). Windsor, UK: NFER-NELSON.

Studart-Bottó, P., Bezerra-Filho, S., Sarmento, S., & Miranda-Scippa, Â. (2021). Social support in patients with bipolar disorder and differing ages at onset. *Clinical Psychology and Psychotherapy*, (February), 1–9. https://doi.org/10.1002/cpp.2617

Trang, A. (2018). Continuity of care for patients with schizophrenia in communities with limited resources. *Mental Illness*, *10*(1), 7585. https://doi.org/10.4081/mi.2018.7585

van Doornik, S. F. W., Ostafin, B. D., Jonker, N. C., Glashouwer, K. A., & de Jong, P. J. (2021). Low satisfaction with normative life domains in adolescents with anorexia nervosa. *Clinical Psychology and Psychotherapy*, *28*(5), 1266–1274. https://doi.org/10.1002/cpp.2574

Velligan, D., Carpenter, W., Waters, H. C., Gerlanc, N. M., Legacy, S. N., & Ruetsch, C. (2018). Relapse risk assessment for schizophrenia patients (RASP): A new self-report screening tool. *Clinical Schizophrenia and Related Psychoses*, *11*(4), 224–235. https://doi.org/10.3371/csrp.dvwc.111717

Vuong, T., Ritter, A., Shanahan, M., Ali, R., Nguyen, N., & Minh, K. P. (2021). Quality of life as a predictor of time to heroin relapse among male residents following release from compulsory rehabilitation centres in Vietnam. *Drug and Alcohol Review*, *40*(2), 296–306. https://doi.org/10.1111/dar.13176

Xiao, J., Mi, W., Li, L., Shi, Y., & Zhang, H. (2015). High relapse rate and poor medication adherence in the chinese population with schizophrenia: Results from an observational survey in the people's Republic of China. *Neuropsychiatric Disease and Treatment*, *11*, 1161–1167. https://doi.org/10.2147/NDT.S72367

Yang, F., Hong, X., Tao, J., Chen, Y., Zhang, Y., & Xiao, H. (2021). Hair cortisol, social support, personality traits, and clinical course: differences in schizophrenia and bipolar disorder. *Brain and Behavior*, (September), 1–13. https://doi.org/10.1002/brb3.2412

Yildirim, T., & Kavak Budak, F. (2020). The relationship between internalized stigma and loneliness in patients with schizophrenia. *Perspectives in Psychiatric Care*, *56*(1), 168–174. https://doi.org/10.1111/ppc.12399

Zavorotnyy, M., Ehrlich, F., & Nenadic, I. (2020). Health-related Internet use and treatment adherence: A transdiagnostic comparison of outpatients with major depressive disorder and schizophrenia. *PsyCh Journal*, *9*(2), 174–184. https://doi.org/10.1002/pchj.355

Jurnal Keperawatan Global
Vol. 7, No. 2, December 2022
https://doi.org/10.37341/jkg.v0i0.486

Original Research

Nurse's Obstacles In Delivering End Of Life Care

Reni Sulung Utami[1*], Ayu Karunia Putri[2]

[1,2] Department of Nursing Faculty of Medicine Universitas Diponegoro Semarang, Indonesia

ABSTRACT

Background: *Death can occur in any situation at any time, and each hospital setting has different difficulties in providing high-quality end-of-life care. The hospital's Islamic culture might offer new experiences to nurses when providing EOLC and be related to the challenges they face. This study identified the difficulties nurses encounter when providing end-of-life care in an Islamic-based hospital.*

Methods: *A descriptive cross-sectional survey was applied to this study. A questionnaire that was adapted from the Nursing Survey Questionnaire Regarding End-of-Life Care on Medical-Surgical Units was used to collect the data. The translation and back-translation processes were carried out in the Indonesian version. All questionnaire items were declared valid with a validity value range of 0.820 to 0.950 (r table = 0.312), and the reliability test results obtained an alpha coefficient value of 0.977 (very reliable). The consecutive sampling method was applied. The data were analyzed using univariate analysis. At an Islamic hospital in Semarang, 97 surgical and medical nurses in total participated in the survey.*

Results: *The findings indicate that the three main obstacles to nurses delivering end-of-life care are knowledge gaps (x = 2.53), a lack of education or training (x = 2.34), and health professionals' avoidance of dying patients (x = 2.30). Other major impediments include a lack of family acceptance and uncooperative family attitudes.*

Conclusion: *Nurses and family factors are the biggest obstacles for nurses in caring for dying patients.*

ARTICLE HISTORY
Received: June 8th, 2022
Accepted: December 17th, 2022

KEYWORDS
death, palliative care, terminal care;

CONTACT
Reni Sulung Utami
✉
reni.sulung@fk.undip.ac.id
Department of Nursing, Faculty of Medicine, Universitas Diponegoro, Jl. Prof Sudarto SH, Tembalang, Semarang, Indonesia.

Cite this as: Utami, R. S., & Putri, A. K. (2022). Nurse's Obstacles In Delivering End Of Life Care. *(JKG) Jurnal Keperawatan Global*, 95–107. https://doi.org/10.37341/jkg.v0i0.486

INTRODUCTION

Hospitals continue to be the main site of death for patients with serious illnesses. Statistical data in Canada in 2019 showed 58.9% of deaths occurred in hospitals (Statistics Canada, 2020), while data from the Central Java Provincial Health Office in 2019 reported a total gross death rate in hospitals of 28,8% and the patient mortality rate after being hospitalized for more than 48 hours by 14,1% (Dinas Kesehatan Provinsi Jawa Tengah, 2020). Thus, it is very possible for nurses to care for patients at the end of life.

Nurses play a crucial role in delivering end-of-life care for patients and their families. The phrase "end-of-life care" (EOLC) refers to the treatment given to patients

who are no longer responding to curative interventions (Sadler, 2015). The goal of treatment is to alleviate the patient's pain and enhance their quality of life while honoring their last wishes. NICE, (2019) addresses the physical, psychological, social, and spiritual aspects of care.

End-of-life care has been implemented in several hospitals in Indonesia, but its implementation is still not optimal. According to a study conducted in the RSUP dr. Sardjito Yogyakarta's intensive care unit (ICU), the quality of end-of-life care in the ICU was rated at 55.29 out of 100 (Purnamaningrum & Setyarini, 2013). Another study in the emergency department found that nurses only focused on supportive care and were lacking in providing spiritual care for end-of-life patients. This is due to the busy environment and the nurses' priorities for other patients (Ose et al., 2016).

The provision of high-quality EOLC by nurses is challenging (Dunning & Martin, 2018) (Searight, 2019) (Woo et al., 2006). The challenges encountered when giving EOLC in a hospital context, including the ICU Attia et al., (2013); Brooks et al., (2016); Crump et al., (2010); Iglesias et al., (2013); Permatasari & Utami, (2018), emergency room Ariyanti et al., (2019); Beckstrand et al., (2008); Ka & Ho, (2016), neonate intensive care unit Beckstrand et al., (2019), pediatrics Beckstrand et al., (2010), medical surgical Dufour, (2018) and oncology Beckstrand et al., (2009); Blaževičienė et al., (2017). Patients, families, nurses, doctors, and organizations' health service providers can all be sources of these obstacles (Ozga et al., 2020) (Rohmah et al., 2019).

Critical care nurses reported that the family presents the biggest challenge when giving EOLC. Family rejection of the patient's bad prognosis, family apathy in decision-making, emotional attitudes in the family, and a lack of family information and understanding are a few of the challenges. The attitude of doctors who still insist on aggressive treatment is also a barrier, thereby prolonging the suffering of the patient and preventing the patient from dying with dignity (Iglesias et al., 2013).

In the meanwhile, nurses' barriers to EOLC include a lack of knowledge and training, apathy, worry, and fear, as well as a lack of time and competing responsibilities. Another barrier is the lack of support staff and specialized facilities for patients nearing the end of their lives (Beckstrand et al., 2010) (Blaževičienė et al., 2017); (Brooks et al., 2016); (Dufour, 2018); (Harasym et al., 2020); (Ose et al., 2016). Although there has been some research on the challenges faced by nurses in administering EOLC in other nations, there hasn't been much done in Indonesia.

According to a thorough review by Chakraborty et al., (2017), a nation's cultural traditions and legislative framework significantly influence its citizens' attitudes around death and dying. The end-of-life decisions made by individuals and healthcare professionals are also influenced by religious teachings and beliefs. Roemani Muhammadiyah Hospital Semarang is one of the hospitals affiliated with the religion of Islam. Islamic values are the basis for hospitals providing services (Profile Rumah Sakit Roemani Muhammadiyah, n.d.).

The hospital's Islamic culture may be able to offer nurses a new experience when delivering EOLC and in relation to the challenges they encounter. Each hospital context poses different difficulties in delivering high-quality EOLC (McCourt et al., 2013). A medical-surgical ward is a ward in the hospital that has patients with various diagnoses and interventions. Some patients may have more than one chronic disease, while others are preparing for or recovering from surgery. Based on this phenomenon, this study aims to identify the barriers that nurses in the medical-surgical ward of Roemani Muhammadiyah Hospital Semarang have in providing care for end-of-life patients.

MATERIALS AND METHOD

This study uses a cross-sectional survey-based quantitative descriptive methodology. The study was carried out at Roemani Muhammadiyah Hospital in Semarang from July to August 2019. The population of the study was medical-surgical nurses, totaling 117 nurses. The inclusion criteria were nurses who had experience caring for end-of-life patients. Nurse managers and nurses who were absent (due to illness, childbirth, or study) were not eligible for this study.

A researcher asked initial questions to prospective respondents about their experience caring for end-of-life patients before distributing informed consent and a questionnaire. Using the consecutive sampling technique, samples were collected, yielding a total of 97 respondents. Four respondents dropped out of this study due to incomplete answers, and sixteen nurses were excluded because they did not meet the requirements.

Data were collected using a questionnaire consisting of two parts. The first section identifies the characteristics of the respondents, and the second section identifies the obstacles that nurses face when delivering EOLC. The Nursing Survey Questionnaire Regarding End-of-Life Care in Medical-Surgical Units was used (Dufour, 2018).

This questionnaire consists of 12 closed questions and 1 open question. There are 3 answer choices for closed questions, namely "not a barrier", "small obstacle" and "big obstacle". The scoring used in this questionnaire uses a Likert scale. Using their experiences, nurses were questioned in an open-ended manner to determine what they believed to be the main barrier to providing high-quality end-of-life care. Respondents answered the open-ended question in the questionnaire by writing down their answers on the sheet provided.

The researcher carried out the translation and back-translation process of the questionnaire with linguists. The questionnaire's reliability and validity were then tested on 40 medical-surgical nurses at RSI Sultan Agung Semarang. All 12 statement items passed the validity test, which had validity values ranging from 0.820 to 0.950 (r table = 0.312), and the reliability test yielded an alpha coefficient value of 0.977 (very reliable). Furthermore, paper-based questionnaires were distributed to respondents who met the requirements directly by the researcher. The questionnaires were collected five days later.

The data obtained were analyzed using univariate analysis and data processing using SPPS. The characteristics of respondents were presented as a frequency distribution table, while the obstacles of nurses in delivering EOLC were presented as a central tendency (mean). Moreover, the answers to open-ended questions were grouped, and the frequency was calculated. Then, the data is presented as a frequency distribution table. With reference number 42/B/RSI-SA/VII/2019, the RSI Sultan Agung Semarang ethics committee has approved this study's ethical clearance.

RESULTS

Table 1 shows that most of the respondents have worked less than five years on average, are female, are in early adulthood, and have a diploma in nursing. The majority of respondents chose PK 1 (junior) as their career path, with only an 8.3% difference between the number of nurses in PK 2 (medior). The number of nurses who do not have an EOLC training certificate is still quite high (43.3%).

Table 1. Characteristics of Research Respondents (n= 97)

Variable	Frequency (f)	Percentage (%)
Length of working		
0-5 years	59	60.8
6-10 years	20	20.6
11-15 years	5	5.2
16-20 years	7	7.2
>20 years	6	6.2
Gender		
Male	32	33.0
Female	65	67.0
Age		
21-39 years	82	84.5
40-60 years	15	15.5
Level of Education		
Diploma (D3)	84	86.6
S1/Ners	13	13.4
Level of Nursing Credentials		
PK 1	51	52.6
PK 2	43	44.3
PK 3	3	3.1
Training on EOLC		
Yes	55	56.7
No	42	43.3

Table 2 lists the variables that prevent nurses from providing EOLC in descending order of importance. Health personnel were responsible for the three main challenges, which were a lack of understanding of their role, avoiding dying patients, and a lack of EOLC education or training. The smallest impediment communicated by the nurse is the patient's or family's concern about the possibility of drug addiction from being administered drugs.

Table 2. Factors Inhibiting Nurses in Providing EOLC (n=97)

Inhibiting Factors	$\bar{x}$
Lack of knowledge of health workers	2,53
Lack of training on EOLC	2,34
Avoidance of dying patients by health workers	2,30
Lack of time	2,16
Lack of continuity of care across unit	2,13
Cultural factors influencing EOLC	2,12
Inadequate staff ratio	2,10
Death avoidance by family members	2,07
Health workers fear that they will become addicted to painkillers	2,01
Personal discomfort of health workers about death	1,99
Patient avoidance of death	1,92
Patient/family fear of addiction (painkillers)	1,76

Based on the responses to the open-ended questions asked of research respondents regarding the other major impediments to EOLC that nurses experienced, it was found that the major obstacle faced by nurses came from the nurses themselves (28.8%), followed by the patient's family factors (22.1%), other health team factors (10.5%), and management factors (9.6%). The remaining 26.9% of respondents did not convey any other obstacles. In detail, this can be seen in table 3.

Table 3. Other Inhibitory Factors Faced by Nurses in Providing EOLC Based on Open Questions (n=97)

Inhibiting Factors	Frequency (f)	Percentage (%)
Family		
Having high hope	1	0.9
Unacceptance	6	5.7
Uncooperative	7	6.7
Unpreparedness	1	0.9
Distrust	2	1.9
Death avoidance	2	1.9
Knowledge	2	1.9
Not understanding	1	0.9
Number of family members present	1	0.9
Total	**23**	**22.1**
Patient		
Unacceptance	1	0,9
Uncooperative	1	0.9
Total	**2**	**1.9**
Nurse		
Bad communication	5	4.8
Lack of time	3	2.8
Lack of knowledge and training	19	18.2
Lack of spiritual support	2	1.9
Feel of dread	1	0.9
Total	**30**	**28.8**
Management		
Ward management	1	0.9
Lack of staff	5	4.8
Culture	2	1.9
Service management	1	0.9
Unclear treatment goals	1	0.9
Total	**10**	**9.6**
Other health teams		
Performance	10	9.6
Lack of collaboration	1	0.9
Total	**11**	**10.5**
No obstacles		
Total	**28**	**26.9**

DISCUSSION

The results showed that most of the respondents were clinical nurses, had less than 5 years of working experience, were female, were in early adulthood, and had a

diploma in education. Clinical nurse 1 is a level of clinical nurse whose competence is limited to carrying out basic nursing care, which emphasizes technical nursing skills under guidance (Kementerian Kesehatan Republik Indonesia, 2017). In order to deliver effective EOLC, nurses at this level need assistance in developing their knowledge, clinical skills, and coping mechanisms. They require knowledgeable partners, educational resources, and ongoing education to minimize barriers to delivering EOLC (Caton & Klemm, 2006).

According to a study, healthcare professionals' attitudes toward EOLC are greatly impacted by the length of their employment (Shi et al., 2019). With an average length of employment of less than five years, it can be claimed that the majority of the respondents in this study are still relatively inexperienced workers. According to research by Gedamu et al., (2019), nurses with more than 5 years of experience were more knowledgeable about palliative care than those with less experience. Another study by Feudtner et al., (2007) shows that respondents with more experience also tend to feel more at ease caring for patients who are dying and their families.

In this study, female respondents made up the majority. Female nurses frequently display a fear of death when caring for patients who are dying. Additionally, nurses aged 20–29 rated higher on the dread of dying (Hasheesh et al., 2013). Nurses who experience death anxiety find it difficult to discuss death with patients and their families (Deffner & Bell, 2005). This concern may make it difficult to deliver care, which would lower the standard of EOLC offered (Peters et al., 2013).

Education can affect a person's learning process. The higher the education taken by a person, the more that person will tend to have access to more information (Rosseter, 2019). According to Abate et al., (2019), nurses with a bachelor's degree or above have a higher level of understanding of EOLC than nurses with only a diploma.

The higher a person's education, the more competencies he has, yet these competencies are not usually acquired through formal education. Participation in training related to EOLC can also have a positive impact on a nurse’s competence. Research demonstrates that nurses who participate in training have greater knowledge, abilities, and confidence in giving EOLC than nurses who do not (Anstey et al., 2016).

According to the findings of this study, the most significant barrier to nurses providing EOLC is a lack of knowledge about providing EOLC. Furthermore, the lack of EOLC education or training and health professionals' avoidance of dying patients are the second and third biggest obstacles. So, it can be concluded that health professionals are the biggest barrier to providing EOLC.

This conclusion was also reinforced by the responses of nurses to the open-ended question, in which the biggest obstacles came from the nurse (28.8%). This result is different from the results of research conducted in the pediatric intensive care unit at Sardjito Hospital Yogyakarta (Rohmah et al., 2019) and the intensive care unit at four hospitals in Central Java (Permatasari & Utami, 2018). In the two prior investigations, family issues posed the biggest challenge to delivering EOLC.

Previous studies Beckstrand et al., (2010); Blaževičienė et al., (2017); Brooks et al., (2016); Dufour, (2018); Iglesias et al., (2013) have identified a lack of knowledge and education as a barrier to EOLC. Hospital nurses in Korea were found to have little awareness of end-of-life care, according to research (Kim et al., 2020). Additionally, a literature review in 2020 revealed that the majority of hospital nurses in Asia had no experience with EOLC (Diana, 2020).

The lack of end-of-life content in the nursing education curriculum is one of the factors contributing to nurses' lack of understanding regarding EOLC. This is consistent with Robinson, (2004) research findings that 62 percent of nurses do not receive sufficient EOLC materials. Ranse et al., (2014) stated that knowledge is one of the characteristics that affect how well nurses provide EOLC. Nurse knowledge is significantly related to nurses' behavior and confidence in providing care (Kim et al., 2020).

The research results of Choi et al., (2012) demonstrated that nurses who participated in end-of-life education had more knowledge than those who did not. A significant improvement in knowledge and behavior linked to the end of life is shown in nurses who take part in the End-of-Life Nursing Education Consortium (ELNEC) Core Curriculum education program (O'Shea & Mager, 2019). Communication, pain management, symptom management, and ethics are among the topics covered in the ELNEC Core Curriculum.

The need to fill the nursing staff's knowledge and ability gaps makes continuing education programs on end-of-life care crucial. In accordance with the recommendations made by the Association of Indonesian Nurses Educational Institutions in 2015, EOLC materials have started to be incorporated into the basic curriculum for nursing education in Indonesia (Asosiasi Institusi Pendidikan Ners Indonesia, 2016). This policy is a wise move in the direction of enhancing nursing graduates' EOLC competence. However, in order to meet the needed competency standards, educators must constantly innovate to provide relevant and engaging learning techniques.

The respondents to this study also mentioned that they had not received any EOLC training. Other research also revealed this. Lack of training among nurses causes them to feel unqualified to provide EOLC (Iglesias et al., 2013). As a result, nurses expressed a desire for education in providing care for those who are dying. According to a survey by Crump et al., (2010), the top three subjects needed by nurses were culture, ethical issues, and communication.

Communication is one of the issues that often becomes a complaint. So, it is crucial to implement therapeutic communication training to boost nurses' self-assurance and enhance the standard of EOLC offered. The third major deterrent in this study was health professionals' avoidance of dying patients. The previous study demonstrated that doctors shy away from discussing diagnoses and prognoses with patients and their families (Blaževičienė et al., 2017).

Whereas, doctors should explain everything asked by patients and families to avoid inaccurate information Beckstrand et al., (2009), because patient prognosis information is outside the scope of nurses (Iglesias et al., 2013). This might be one of the reasons that nurses also avoid dying patients. One more obstacle to nurses performing EOLC is family. Family-related obstacles include uncooperative families, a refusal to accept the client's poor prognosis, mistrust of nurses, a lack of knowledge and understanding among the family, a lack of preparedness among the family, and the presence of numerous families in the room.

The study by Utami et al., (2021) yielded similar findings to this investigation. In this study, nurses reported difficulties communicating with the families of dying patients, particularly those who were still in the denial phase. Previous research by Enggune also stated that it is difficult to make families accept a poor patient's prognosis (Enggune et al., 2014). The family does not accept the poor prognosis and fully hopes

that the patient will recover (Beckstrand et al., 2009). The family also wants to avoid the patient's death and wants to keep the patient alive, even though the patient has agreed and signed not to request the treatment (Beckstrand & Kirchhoff, 2005).

Research in East Asia reports that families are reluctant to talk about end-of-life issues due to cultural norms. They believe that bad things or bad luck will happen if they talk about it loudly (Cheng et al., 2015). People from outside the United States and other Western countries often hide serious diagnoses from patients because sharing bad news is disrespectful and can put the patient at risk. On the other hand, Western culture places great emphasis on patient autonomy and "truth-telling" in the delivery of care (Searight, 2019). This principle was adopted to create the EOLC's quality standards (National Institute for Health and Care Excellence, 2013).

Families are frequently unaware that the interventions they make can worsen the patient's suffering (Reinke et al., 2010). This will increase the burden on nurses when caring for patients because it limits nurses' ability to provide high-quality EOLC (Beckstrand & Kirchhoff, 2005). Having a representative who can speak with medical personnel and teach families how to engage in patient care can improve the quality of care (Attia et al., 2013).

CONCLUSION

Nurses provide the biggest challenge to EOLC provision. Lack of understanding, inadequate training on EOLC, and medical professionals' avoidance of dying patients are the three largest barriers for nurses. The patient's family can be a major challenge for nurses, particularly if they refuse to acknowledge the patient's condition and are disobedient when it comes to patient care.

ACKNOWLEDGEMENT

We gratefully thank the Roemani Muhammadiyah Hospital for assisting with the process of data collection.

REFERENCES

Abate, A. T., Amdie, F. Z., Bayu, N. H., Gebeyehu, D., & G/Mariam, T. (2019). Knowledge, attitude and associated factors towards end of life care among nurses' working in Amhara Referral Hospitals, Northwest Ethiopia: a cross-sectional study. *BMC Research Notes, 12*(1). https://doi.org/10.1186/S13104-019-4567-7

Anstey, S., Powell, T., Coles, B., Hale, R., & Gould, D. (2016). Education and training to enhance end-of-life care for nursing home staff: a systematic literature review. *BMJ Supportive & Palliative Care*, *6*(3), 353–361. https://doi.org/10.1136/BMJSPCARE-2015-000956

Ariyanti, S., Emaliyawati, E., & Mirwanti, R. (2019). Emergency nurses' perceptions of supportive behaviors and burdens in providing end-of-life care. *Journal of Nursing Care*, *2*(1), 65–71. https://jurnal.unpad.ac.id/jnc/article/view/19023

Asosiasi Institusi Pendidikan Ners Indonesia. (2016). *Kurikulum inti pendidikan ners Indonesia 2015* (F. Haryanti, H. Kamil, K. Ibrahim, & M. Hadi, Eds.). Asosiasi Institusi Pendidikan Ners Indonesia. www.aipni-ainec.com

Attia, A. K., Abd-Elaziz, W. W., & Kandeel, N. A. (2013). Critical care nurses' perception of barriers and supportive behaviors in end-of-life care. *American Journal of Hospice and Palliative Medicine®*, *30*(3), 297–304. https://doi.org/10.1177/1049909112450067

Beckstrand, R. L., Isaacson, R. F., Macintosh, J. L. B., Luthy, K. E., & Eden, L. (2019). NICU nurses' suggestions for improving end-of-life care obstacles. *Journal of Neonatal Nursing*, *25*, 32–36. https://doi.org/10.1016/j.jnn.2018.08.004

Beckstrand, R. L., & Kirchhoff, K. T. (2005). Providing end-of life care to patients: critical care nurses' perceived obstacles and supportive behaviors. *American Journal of Critical Care*, *14*(5), 395–403.

Beckstrand, R. L., Moore, J., Callister, L., & Bond, A. E. (2009). Oncology nurses' perceptions of obstacles and supportive behaviors at the end of life. *Oncology Nursing Forum*, *36*(4), 446–453. https://doi.org/10.1188/09.ONF.446-453

Beckstrand, R. L., Rawle, N. L., Callister, L., & Mandleco, B. L. (2010). Pediatric nurses' perceptions of obstacles and supportive behaviors in end-of-life care. *American Journal of Critical Care : An Official Publication, American Association of Critical-Care Nurses*, *19*(6), 543–552. https://doi.org/10.4037/ajcc2009497

Beckstrand, R. L., Smith, M. D., Heaston, S., & Bond, A. E. (2008). Emergency nurses' perceptions of size, frequency, and magnitude of obstacles and supportive behaviors in end-of-life care. *Journal of Emergency Nursing*, *34*(4), 290–300. https://doi.org/10.1016/j.jen.2007.09.004

Blaževičienė, A., Newland, J. A., Čivinskienė, V., & Beckstrand, R. L. (2017). Oncology nurses' perceptions of obstacles and role at the end-of-life care: cross sectional survey. *BMC Palliative Care*, *16*(74). https://doi.org/10.1186/s12904-017-0257-1

Brooks, L. A., Manias, E., & Nicholson, P. (2016). Barriers, enablers and challenges to initiating end-of-life care in an Australian intensive care unit context. *Australian Critical Care*. https://doi.org/10.1016/j.aucc.2016.08.001

Caton, A. P., & Klemm, P. (2006). Introduction of novice oncology nurses to end-of-life care. *Clinical Journal of Oncology Nursing*, *10*(5), 604–608. https://doi.org/10.1188/06.CJON.604-608

Chakraborty, R., El-Jawahri, A. R., Litzow, M. R., Syrjala, K. L., Parnes, A. D., & Hashmi, S. K. (2017). A systematic review of religious beliefs about major end-of-life issues in the five major world religions. In *Palliative and Supportive Care* (Vol. 15, Issue 5, pp. 609–622). Cambridge University Press. https://doi.org/10.1017/S1478951516001061

Cheng, S.-Y., Suh, S.-Y., Morita, T., Oyama, Y., Chiu, T.-Y., Koh, S. J., Kim, H. S., Hwang, S.-J., Yoshie, T., & Tsuneto, S. (2015). A cross-cultural study on behaviors when death is approaching in East Asian countries: what are the physician-perceived common beliefs and practices? *Medicine*, *94*(39), e1573. https://doi.org/10.1097/MD.0000000000001573

Choi, M., Lee, J., Kim, S.-S., Kim, D., & Kim, H. (2012). Nurses' knowledge about end-of-life care: where are we? *Journal of Continuing Education in Nursing*, *43*(8), 379–384. https://doi.org/10.3928/00220124-20120615-35

Crump, S. K., Schaffer, M. A., & Schulte, E. (2010). Critical care nurses' perceptions of obstacles, supports, and knowledge needed in providing quality end-of-life care. *Dimensions of Critical Care Nursing*, *29*(6), 297–306. https://doi.org/10.1097/DCC.0b013e3181f0c43c

Deffner, J. M., & Bell, S. K. (2005). Nurses' death anxiety, comfort level during communication with patients and families regarding death, and exposure to communication education: a quantitative study. *J Nurses Staff Dev*, *21*(1), 19–23. https://doi.org/10.1097/00124645-200501000-00005

Diana, D. L. (2020). *Keperawatan menjelang ajal (end-of-life care): kajian literatur mengenai pengetahuan dan sikap pada perawat rumah sakit di Asia*. http://repository.unpad.ac.id/frontdoor/index/index/docId/35978

Dinas Kesehatan Provinsi Jawa Tengah. (2020). *Profil kesehatan provinsi Jawa Tengah tahun 2019*. http://dinkesjatengprov.go.id/v2018/dokumen/profil2019/mobile/index.html#p=171

Dufour, B. (2018). *Barriers Faced by Nurses Caring For End-of-Life Patients on a Barriers Faced by Nurses Caring For End-of-Life Patients on a Medical Surgical Unit Medical Surgical Unit*. https://digitalcommons.ric.edu/etd

Dunning, T., & Martin, P. (2018). Palliative and end of life care of people with diabetes: Issues, challenges and strategies. *Diabetes Research and Clinical Practice*, *143*, 454–463. https://doi.org/10.1016/j.diabres.2017.09.018

Enggune, M., Ibrahim, K., & Agustina, H. R. (2014). Persepsi perawat neurosurgical critical care unit terhadap perawatan pasien menjelang ajal. *Jurnal Keperawatan Padjadjaran*, *2*(1). https://doi.org/10.24198/JKP.V2I1.80

Feudtner, C., Santucci, G., Feinstein, J. A., Snyder, C. R., Rourke, M. T., & Kang, T. I. (2007). Hopeful thinking and level of comfort regarding providing pediatric palliative care: a survey of hospital nurses. *Pediatrics*, *119*(1). https://doi.org/10.1542/PEDS.2006-1048

Gedamu, S., Berhane, E., Dires, A., Anteneh, S., Goshiye, D., & Tilahun, L. (2019). Knowledge and attitude of nurses towards palliative care in government hospitals of Addis Ababa, Ethiopia. *Journal of Nursing and Care*, *8*(2).

https://www.hilarispublisher.com/abstract/knowledge-and-attitude-of-nurses-towards-palliative-care-in-government-hospitals-of-addis-ababa-ethiopia-33118.html

Harasym, P., Brisbin, S., Afzaal, M., Sinnarajah, A., Venturato, L., Quail, P., Kaasalainen, S., Straus, S. E., Sussman, T., Virk, N., & Holroyd-Leduc, J. (2020). Barriers and facilitators to optimal supportive end-of-life palliative care in long-term care facilities: a qualitative descriptive study of community-based and specialist palliative care physicians' experiences, perceptions and perspectives. *BMJ Open*, *10*(8), e037466. https://doi.org/10.1136/bmjopen-2020-037466

Hasheesh, M. O. A., AboZeid, S. A.-S., El-Said, S. G., & Alhujaili, A. D. (2013). Nurses' characteristics and their attitudes toward death and caring for dying patients in a public hospital in Jordan. *Health Science Journal*, *7*(4). https://www.hsj.gr/medicine/nurses-characteristics-and-their-attitudes-toward-death-and-caring-for-dying-patients-in-a-public-hospital-in-jordan.php?aid=2813

Iglesias, M. E. L., Pascual, C., & Vallejo, R. B. de B. (2013). Obstacles and helpful behaviors in providing end-of-life care to dying patients in intensive care units. *Dimensions of Critical Care Nursing*, *32*(2). https://journals.lww.com/dccnjournal/Fulltext/2013/03000/Obstacles_and_Helpful_Behaviors_in_Providing.11.aspx

Ka, J., & Ho, M. (2016). Resuscitation versus end-of-life care: Exploring the obstacles and supportive behaviors to providing end-of-life care as perceived by emergency nurses after implementing the end-of-life care pathway. *Applied Nursing Research*, *29*, e7–e13. https://doi.org/10.1016/j.apnr.2015.05.014

Kementerian Kesehatan Republik Indonesia. (2017). Peraturan Menteri Kesehatan Republik Indonesia tentang Pengembangan Jenjang Karir Profesional Perawat Klinis. In *Kementerian Kesehatan Republik Indonesia* (No. 40; pp. 1–72). http://hukor.kemkes.go.id/uploads/produk_hukum/PMK_No._40_ttg_Pengembangan_Jenjang_Karir_Profesional_Perawat_Klinis_.pdf

Kim, S., Lee, K., & Kim, S. (2020). Knowledge, attitude, confidence, and educational needs of palliative care in nurses caring for non-cancer patients: a cross-sectional, descriptive study. *BMC Palliative Care 2020 19:1*, *19*(1), 1–14. https://doi.org/10.1186/S12904-020-00581-6

McCourt, R., Power, J. J., & Glackin, M. (2013). General nurses' experiences of end-of-life care in the acute hospital setting: A literature review. *International Journal of Palliative Nursing*, *19*(10), 510–516. https://doi.org/10.12968/ijpn.2013.19.10.510

National Institute for Health and Care Excellence. (2013). *Quality standard for end of life care for adults*. http://www.dchs.nhs.uk/assets/public/dchs/dchs_staff_zone/your_development/E

nd_of_life/Toolkit_Documents/National_Guidelines/guidance-quality-standard-for-end-of-life-care-for-adults-pdf.pdf

NICE. (2019). *End of life care for adults: service delivery*. www.nice.org.uk/guidance/ng142

Ose, M. I., Ratnawati, R., & Lestari, R. (2016). Studi fenomenologi: pengalaman perawat instalasi gawat darurat (IGD) dalam merawat pasien telantar pada fase end of life di RSUD Dr. Saiful Anwar Malang. *Jurnal Ilmu Kesehatan, 4*(2), 171–183. https://jik.ub.ac.id/index.php/jik/article/view/105

O'Shea, E. R., & Mager, D. (2019). End-of-life nursing education: Enhancing nurse knowledge and attitudes. *Applied Nursing Research, 50*. https://doi.org/10.1016/J.APNR.2019.151197

Ozga, D., Woźniak, K., & Gurowiec, P. J. (2020). Difficulties perceived by ICU nurses providing end-of-life care: a qualitative study. *Global Advances in Health and Medicine, 9*, 216495612091617. https://doi.org/10.1177/2164956120916176

Permatasari, E. D., & Utami, R. S. (2018). *Persepsi perawat tentang hambatan dan dukungan dalam perawatan end-of-life di intensive care unit*. http://eprints.undip.ac.id/63427/

Peters, L., Cant, R., Payne, S., O'Connor, M., McDermott, F., & Hood, K. (2013). How death anxiety impacts nurses' caring for patients at the endof life: a review of literature. *Open Nurs J, 7*, 14–21.

Profile Rumah Sakit Roemani Muhammadiyah. (n.d.). Retrieved July 16, 2021, from http://rsroemani.com/rv2/tentang-kami/

Purnamaningrum, R., & Setyarini, S. (2013). *Kualitas perawatan end of life pasien kritis di ICU RSUP Dr. Sardjito Yogyakarta* [Universitas Gadjah Mada]. http://etd.repository.ugm.ac.id/home/detail_pencarian/62715

Ranse, K., Yates, P., & Coyer, F. (2014). Factors associated with critical care nurses' engagement in end-of-life care practices. *Australian Critical Care*, *27*(1), 59. https://doi.org/10.1016/j.aucc.2013.10.052

Reinke, L. F., Shannon, S. E., Engelberg, R. A., Young, J. P., & Curtis, J. R. (2010). Supporting hope and prognostic information: nurses' perspectives on their role when patients have life-limiting prognoses. *Journal of Pain and Symptom Management*, *39*(6), 982–992. https://doi.org/10.1016/J.JPAINSYMMAN.2009.11.315

Robinson, R. (2004). End-of-life education in undergraduate nursing curricula. *Dimensions of Critical Care Nursing*, *23*(2), 89–92. https://doi.org/10.1097/00003465-200403000-00009

Rohmah, N. Y., Hartini, S., & Effendy, C. (2019). *Hambatan dan dukungan dalam pemberian perawatan akhir hayat pada pasien pediatrik*. http://etd.repository.ugm.ac.id/

Rosseter, R. (2019, April). *Fact Sheet: The Impact of Education on Nursing Practice*. American Association of Colleges of Nursing. https://www.aacnnursing.org/Portals/42/News/Factsheets/Education-Impact-Fact-Sheet.pdf

Sadler, C. (Ed.). (2015). *A practical guide to end of life care*. McGraw Hill Education.

Searight, H. R. (2019). *SPRINGER BRIEFS IN ETHICS: ethical challenges in multi-cultural patient care cross cultural issues at the end of life*. Springer. https://doi.org/https://doi.org/10.1007/978-3-030-23544-4

Shi, H., Shan, B., Zheng, J., Peng, W., Zhang, Y., Zhou, X., Miao, X., & Hu, X. (2019). Knowledge and attitudes toward end-of-life care among community health care providers and its influencing factors in China: A cross-sectional study. *Medicine, 98*(45), e17683. https://doi.org/10.1097/MD.0000000000017683

Statistics Canada. (2020). *Table 13-10-0715-01 Deaths, by place of death (hospital or non-hospital)*. https://doi.org/https://doi.org/10.25318/1310071501-eng

Utami, R. S., Pujianto, A., Setyawan, D., Naviati, E., & Rochana, N. (2021). Critical care nurses' experiences of end-of-life care: A qualitative study. *Nurse Media Journal of Nursing*, *10*(3). https://doi.org/10.14710/NMJN.V10I3.31302

Woo, J. A., Maytal, G., & Stern, T. A. (2006). Clinical challenges to the delivery of end-of-life care. *Primary Care Companion to the Journal of Clinical Psychiatry*, *8*(6), 367–372. http://www.ncbi.nlm.nih.gov/pubmed/17245459

Jurnal Keperawatan Global
Vol. 7, No. 2, December 2022
https://doi.org/10.37341/jkg.v0i0.596

Original Research

Smart Diagnosing System Design To Accelerating Early Detection Of Postpartum Blues

Intan Maharani Sulistyawati Batubara[1*], Mellia Silvy Irdianty[2], Dias Aziz Pramudita[3]

[1] Department of Psychiatric and Mental Health Nursing Universitas Kusuma Husada Surakarta, Indonesia
[2] Department of Maternity Nursing Universitas Kusuma Husada Surakarta, Indonesia
[3] Department of Informatics Universitas Muhammadiyah Surakarta, Indonesia

ABSTRACT

Background: *Untreated mothers with postpartum blues are at greater risk of severe mental health disorders. At the same time, early detection tools are manually provided and paper-based, and they cannot offer accessible access to center-compiled data despite their lack of priority in mental health services.*

Methods: *Using a mixed-methods study design, the researcher used semi-structured interviews, while the quantitative approach was conducted using demographic questionnaires and a survey resulting from the interviews. A total of 16 participants were chosen for the qualitative study, and 60 respondents participated in the quantitative study. The sample for the study was screened by using the Edinburgh Postnatal Depression Scale (EPDS) within the area of Sibela Healthcare Center in Surakarta. Data collection used instrument tests and observation sheets and was analyzed by the Chi-Square statistical test.*

Results: *Quantitative data analyses identified a relationship between age and the incidence of postpartum blues in mothers (p-value of 0.004; OR 0.053). This study showed that mothers aged < 21 and > 35 years old have a 0.067 times higher development of postpartum blues than mothers aged 21-35.*

Conclusion: *Both qualitative and quantitative data suggest that postpartum mothers need support from husbands in overcoming the blues. Mothers and husbands need a comprehensive digital mobile phone service that involves professional health workers, health service providers, and referral systems.*

ARTICLE HISTORY
Received: October 21th, 2022
Accepted: December 20th, 2022

KEYWORDS
blues, early detection, mother, postpartum, smart diagnosing system;

CONTACT
Intan Maharani Sulistyawati Batubara
✉
intan@ukh.ac.id
Department of Psychiatric and Mental Health Nursing Universitas Kusuma Husada Surakarta, Jl. Jaya Wijaya No. 11, Banjarsari, Surakarta, Jawa Tengah 57136, Indonesia.

Cite this as: Batubara, I. M. S., Irdianty, M. S., & Pramudita, D. A. (2022). Smart Diagnosing System Design To Accelerating Early Detection Of Postpartum Blues. *(JKG) Jurnal Keperawatan Global*, 108–124. https://doi.org/10.37341/jkg.v0i0.596

INTRODUCTION

In the first few weeks after delivery, postpartum blues often occur in 50% or more of women with app (Howard et al., 2014). Symptoms of the blues develop within two to three days postpartum and resolve within two weeks (Balaran & Raman, 2021). Postpartum blues symptoms are mild, temporary, and can heal independently. The impact of the postpartum blues can cause mothers to feel reluctant to take care of the

health of themselves and their babies and be unwilling to breastfeed (Admon et al., 2021). 30-50% of blues symptoms that lead to depression and are not treated can increase the risk of recurrence in subsequent pregnancies and childbirth Brummelte & Galea, (2016), where 24,000 mothers are at risk for suicide (Admon et al., 2021).

Indonesia has not considered the incidence of postpartum blues. This concern is due to the public perception that postpartum mothers' postpartum blues are common. This problem is in line with the absence of prenatal mental statistical data displayed in the 2020 Indonesian Health Profile (Ministry of Health Republic Indonesia, 2020).

Although the Maternal Mortality Rate (AKI) decreased in 2018–2019 from 4,226 to 4,221, maternal mortality indicators still focus on physical problems. In the city of Surakarta, the health service target still focuses on biological monitoring and physical care, providing communication, information, and education (KIE) on the health of postpartum mothers and newborns and family planning services. The providers at the Sibela Public Health Center in Surakarta are unable to precisely identify the incidence of postpartum blues and depression because they did not conduct comprehensive postpartum blues examinations and instead focused on physical recovery in postpartum mothers (BBC News, 2021).

Healthcare providers should carefully evaluate postpartum blues mothers to meet the diagnostic criteria for depression. Since the release of the 2016 US Preventive Service Task Force (USPFTF) recommendation for screening and staff to ensure accurate diagnosis, a follow-up of treatment and support beyond screening has demonstrated an absolute risk reduction in depression prevalence of as much as 9% (O'Connor, Rossom, Henninger, Groom, & Burda, 2016). A useful clinical tool for identifying depression in postpartum mothers is the Edinburgh Postnatal Depression Scale (EPDS) (Balaran & Raman, 2021).

EPDS is the first step in meeting the need for identifying postpartum blues. Validation of postpartum blues events helps produce a fast, accurate, and comfortable postpartum recovery. Although they do not require treatment, postpartum blues mothers need partner support, information, care, and mental health resources (K. L. Chan, Leung, Tiwari, Or, & Ip, 2019). Treatment is not only centered on the mother but also connects with health workers (doctors, nurses, and psychologists) and family (husband or closest person).

Over the last decade, computer-based technology has effectively supported maternal postpartum recovery (Firth, Torous, Nicholas, Carney, Pratap, et al., 2017) (Firth, Torous, Nicholas, Carney, Rosenbaum, et al., 2017) (Sun et al., 2019). The smartphone is the most effectively used application to disseminate health information, and mobile-based interventions have been shown to reduce depression (Firth, Torous, Nicholas, Carney, Pratap, et al., 2017) (Firth, Torous, Nicholas, Carney, Rosenbaum, et al., 2017) (Sun et al., 2019). Intelligent medical services are needed to create a medical system capable of monitoring, diagnosing, and providing remote care (Balaran & Raman, 2021) (Rhayem, Mhiri, Drira, Tazi, & Gargouri, 2021).

The smart diagnostic system here detects the patient's condition according to his complaint. This system can also recommend interventions according to the patient's condition (Basu, Sinha, Ong, & Basu, 2020) (Gulshan et al., 2016) (Güneş, Yaman, Çekyay, & Verter, 2014). Previous research has shown that the EPDSAp prototype in Android OS has been tested for validity and reliability using a sensitivity test of 83%, and a specificity test of 77.78% (Novinaldi, Edwardi, Gunawan, & Sarli, 2020).

The results of the positive predictive value (PPV) are lower than the negative predictive value (NPV). In which the study displays results based on a score above 10, so the mother experiences depression or baby blues. In contrast, a score between 5 and 9 requires the supervision of the mother and re-evaluation using the EPDS application. That is why this study considered that the smart diagnostic system can connect postpartum mothers with health workers (doctors, nurses, and psychologists) and their husbands or significant others as the closest people who can monitor the recovery of postpartum mothers.

The study's goal is to investigate qualitatively related people's perceptions of postpartum blues and their expectations of its application design. This research expects to produce an application design that is fast, precise, and responsive in anticipating maternal psychiatric emergencies at Sibela Health Center Surakarta to support the acceleration of early detection of postpartum blues mothers.

MATERIALS AND METHOD

This mixed methods study investigated the perception of related people in the incident of postpartum blues and their expectations of its application design. The study combined qualitative research with a focus group discussion (FGD) and in-depth interviews. The authors conducted in-depth interviews with an obstetrics and gynecology specialist, a psychologist, and five pairs of postpartum mothers and their husbands. The authors also facilitated an FGD with a cadre, a midwife, a general practitioner, and a nurse who coordinated postpartum programs at Sibela Healthcare Center.

Recruitment for healthcare providers and a cadre was based on their contribution to a local healthcare center for postpartum programs. In contrast, the postpartum mothers and husbands were the people who used the local healthcare center's services. On the other hand, as the local health center did not have a mental health program and referred complex maternal patients, the authors recruited experts who were obstetrics and gynecology specialists and a psychologist who works in the central government hospital in Surakarta. The author established a good rapport with potential participants by offering them the opportunity to participate in the study voluntarily.

The data collected in this research involved all areas under the Sibela Health Center. The researcher used Colaizzi data analysis Polit & Beck, (2012) with bracketing, intuiting, analyzing, and describing processes. The authors collected data through a structured in-depth interview and FGD and conducted the research from July to October 2022. The Committee on Ethics at Universitas Kusuma Husada Surakarta approved this research with ID number 741.a/UKH.L.01/EC/VII/2022.

This study reached data validity through credibility, dependability, confirmability, and transferability processes. The first author confirmed to participants the suitability of the data based on the transcript. A member check was achieved by clarifying the conclusion to the participants, who agreed with the findings. The second and third authors were independent auditors who examined the overall activities of the first author. The study met the auditability principle, with the audit process involving consultation with independent auditors for data validity.

The findings reached confirmability and referred precisely to the recorded informants' answers and field notes, which guaranteed this study's objectivity. Last, a thick description was achieved as the transferability criteria. The informants' words were discussed under the "emerging themes" section so that readers could compare

other studies' results. Other studies also support the themes generated in this study according to the transferability criteria. A complete and transparent report on findings was presented to research examiners at the Center of Research and Engagement Service (LPPM) at Universitas Kusuma Husada Surakarta.

Each participant gave consent before each interview. The authors were informed of the sensitive nature of the interview guide content, and they were given the freedom to withdraw at any stage of the study. The authors conducted interviews with maximum privacy and strictly maintained data confidentiality.

An interview guide focused on how participants viewed the postpartum blues and the expectation of an application that can link mothers to related people. The authors carried out all interviews in Bahasa Indonesia with a Javanese dialect, which lasted from 30 minutes to 60 minutes. The data gathered reached the level of saturation (Corbin & Strauss, 2008).

For the quantitative data, an analytic-descriptive research design with a cross-sectional approach was used. The sample of the study screened 60 postpartum mothers using the *Edinburgh Postnatal Depression Scale* (EPDS) Cox, Holden, & Sagovsky, (1987) within the area of Sibela Healthcare Center in Surakarta. The research was conducted at the Sibela Surakarta Health Center from June to September 2022. Data collection used instrument tests and observation sheets and analyzed by the Chi-Square statistical test. This research presented a cash token range of Rp 50.000 to Rp 500.0000.

RESULTS

Qualitative Data

Eight themes were derived form the interviews, which were:

The vulnerability of postpartum mothers to manage self-change causes the occurrence of blues, as stated by the following participants:

"They usually come with symptoms of post-traumatic stress … such as panic, anxiety, restlessness, being unable to sleep, being sad, and so forth." (P3)

"… feel more sensitive, when my baby cries, I will cry instantly …" (P1)

"...stressed… tired…"(P4)

Untreated postpartum blues events could cause severe mental disorders, as stated by the following participants:

"Harm the child" (P1)

"…there was a patient who came for counseling after giving birth, and later the baby blues developed into depression …" (P3)

"Even more extreme, the mother committed suicide" (P6)

The lack of priority for postpartum mental health services influences the mother's efforts to overcome the blues, as stated by the following participants:

"Only examined for physical complaints" (P1).

"Mental health services already existed but not specifically for postpartum" (P10).

"General practitioners are available in local health centers, but psychological services are not covered there" (P3).

"Talk to husband..." (P7).

Digital services bridge the postpartum blues manual service, as stated in the following participants:
"Usually, when the patient comes, we provide manual education to explain more about what they are experiencing and its symptoms. Later, there will be a further referral to the psychologist" (P3).
"if I feel unease coming to the hospital, digital service is way more comfortable through chat or video" (P5).
"It is possible to do counseling via chat."Voice and video calls can also be suitable for patients who have problems coming directly due to physical limitations or distance" (P8).

Consultation is postpartum mothers' hope to overcome the blues by involving husbands as the primary support system, as stated by the following participants:
"*The service should be a place where mothers can share their feelings and what they have been through" (P7).*
"Both husband and wife must be involved…" (P5).
"… the husband's role is very important" (P13).

Comprehensive postpartum blues services involve professional health workers, health service providers, and referral systems, as stated by the following participants:
"In the local health centers, we didn't get screened, but later, when they have standards, they should cooperate and collaborate with the posyandu or other healthcare providers and clinics." (P11)
"Consultation with a psychologist is a must" (P7).
"Indeed, if the mother needs further assistance, they should be immediately referred to anticipate a severe disorder" (P9).

Postpartum blues digital services from mobile phones facilitate mothers to access comprehensive mental health service features, as stated by the following participants:
"The items should be screened in digital form as local healthcare centers have none of it." (P9).
"We need more health education on blues, also when their result show postpartum blues, they can use simple therapy feature and get referred if in more severe cases" (P3).
"For Moslems, they can have murottal of Quran, while for Christians, they can have a worship song" (P6).

Postpartum blues applications' obstacles do not hinder the benefits of the application, as stated in the following participants:
"Most of it would be capacity. Because not all phone capacity is big" (P15).
"10 out of 10 … I feel sorry for the mothers" (P1).

Quantitative Data
Table 1 shows that most postpartum mothers were aged 21–35 (32 respondents, or 67%). Most respondents were multiparous (55%), had normal delivery status (61%), and had high-level education (58%). On average, 46% of mothers were housewives, lived with husbands in the same household (46%), and had in-home childcare (67%), assisted by husbands and parents.

Table 1. Respondents Characteristics

Risk Factos	Frequency	
	n	%
Age		
20-35 years old	32	67
< 20 years old or < 35 years old	18	33
Parity		
Primipara	33	55
Multipara	27	45
Delivery status		
Normal	37	61
Sectio Caesaria	23	49
Place of delivery		
Hospital	35	58
Clinic or midwife clinic	25	42
Education		
High-level	35	58
Low-level	25	42
Occupation		
Working	28	47
Housewife/unemployed	32	53
Residential status		
Living with husband	55	91
Living apart from husband	5	9
Care of the baby		
In-home help	40	67
Self-care	20	33

Table 2 shows a relationship between age and the incidence of postpartum blues in mothers (p-value of 0.004; OR 0.053). This study showed that mothers aged < 21 and > 35 years old have a 0.067 times higher development of postpartum blues than mothers aged 21-35. In addition, there were significant results between parity status and the incidence of postpartum blues. Primipara mothers had 1.6 times higher risk of postpartum blues than multiparous mothers.

Housewife mothers had 0.98 times higher developing postpartum blues than multiparous mothers. Meanwhile, mothers who do not have assistance in childcare (self-care) have a 1.2 times greater risk of developing postpartum blues than mothers whose husbands or other family members help them.

Table 2. Data Analysis with Postpartum Blues Incident

Risk Factor	Postpartum Blues				Frequency		P-value	OR value
	No		Yes					
	n	%	n	%	n	%		
Age								
20-35 years old	30	50	2	3	32	67	0,004	(CI 95%) 0,067 (0,006-0,512)
< 20 years old or < 35	8	13	10	17	18	33		

Risk Factor	Postpartum Blues				Frequency		P-value	OR value
	No		Yes					
	n	%	n	%	n	%		
years old*								
Parity								
Primipara*	29	48	4	7	33	55	0,000	1,639
Multipara	19	32	8	13	27	45		(0,213-8,328)
Delivery status								
Normal	33	55	4	6	37	61	1,000	0,739
Sectio Caesaria*	15	25	8	14	23	49		(0,139-7,518)
Place of delivery								
Hospital	31	73	4	8	35	58	0,216	0,78
Clinic or midwife clinic*	20	7	5	12	25	42		(0,152-5,566)
Education								
High-level	25	44	10	13	35	58	0,430	0,688
Low-level*	22	36	2	7	25	42		(0,660-0,940)
Occupation								
Working	20	34	8	13	28	47	0,000	0,98
Housewife/unemploye*	28	46	4	7	32	53		(0,152-5,566)
Residential status								
Living with husband	46	76	9	15	55	91	0,205	0, 539
Living apart from husband*	2	4	3	5	5	9		(0,115-6,528)
Care of the baby								
In-home help	36	60	4	8	40	67	0,000	1,239
Self-care*	12	20	8	3	20	33		(0,228-8,426)

= *Referred

Table 3. Expected Service Feature

Expected Service Feature	n	%
Platform		
Mobile phone	56	93,3
Website	4	6,7
Digital form of service		
Consultation	7	11,7
Online referral	2	3,3
News	2	3,3
Consultation and social networing of pregnant mothers	3	5,0
Early detection of blues, consultation, news, social networking forum, online referral	46	76,7
Parties involved in application		
Husband	18	30,0
Husband and friend	4	6,7
Husband, nurse, and obstetrician	15	25,0
Husband, cadre, midwife, and obstetrician	19	31,7
Husband, parents, cadre, midwife, nurse and obstetrician	4	6,7
Early detection feature		
Result	13	21,7

Expected Service Feature	n	%
Interpretation	4	6,7
Result, interpretation, follow-up	43	71,7
Consultation feature		
Chat, Voice call, Video call	12	20,0
Chat Video Call	7	11,7
Chat	40	66,7
Chat Voice call	1	1,7
News feature		
Video	7	11,7
Health news, video	29	48,3
Health news	24	40,0
Therapy feature		
Game	5	8,3
Music, funny video, yoga/meditation	32	53,3
Murottal/worship, music, funny video, yoga/meditation	15	25,0
Music	8	13,3
Discussion forum feature		
Send message	13	21,7
Create status	12	20,0
Create status, give like, comment, send message, react with emoticon	35	58,3
Online referral feature		
Connected to government health center	5	8,3
Connected to local health center or clinics,	10	16,7
Connected to local health center or clinics, cadre, midwife, psychologist, government health center, hosptal and pharmacy	45	75,0

Table 3 shows that most respondents (63%) chose the mobile service feature as the expected form of the postpartum blues application. 76.7% of mothers chose early detection of postpartum blues, consultation, related health education materials, social networking sites of groups of pregnant women, and online referrals as a comprehensive form of digital service. A total of 48% of respondents chose health news and videos. 53% of mothers choose music therapy, funny videos, and meditation or yoga as therapy when the mother is feeling anxious and tired while caring for the baby. 58% of mothers choose discussion forum features compatible with social media, which can create status updates, give likes and comments, send messages, and have emoticons.

DISCUSSION

The first theme was the vulnerability of postpartum mothers to manage self-change, which causes the occurrence of the blues. Postpartum mothers experience significant hormonal changes from pregnancy to delivery (Dalfen, 2008). Their estrogen and progesterone levels rise steadily through pregnancy and drop dramatically during delivery. As progesterone and estrogen control moods by interacting with serotonin, this fluctuation during the postpartum period is the first layer of risk. During the postpartum period, the hormones, behavior, and moods cause blues to manifest (Dalfen, 2008).

The study found that participants' blues is the psychological response when mothers cannot adjust to enormous and rapid change during the postpartum period. Not

only did all five participants felt stressed, tired, sad, afraid, confused, and more sensitive, but they also showed anger and refused to interact with family members. Some of them also mentioned that they received no support from family members and did not know what to do and think when they needed to adjust to their physical and emotional changes.

Asadi, Noroozi, & Alavi, (2022) stated that the motherhood transition is associated with stress and difficulties as they cannot find appropriate resources. Such stress occurs in various physical, psychological, social, economic, and family dimensions Johansson, Benderix, & Svensson, (2020) and is sourced from internal and external factors (Putriarsih, Budihastuti, & Murti, 2017). Internal factors include psychological conditions such as worries, fears, and anxieties about themselves and their children, financial problems, and prohibitions or myths that mothers must obey after giving birth.

External factors include the absence of adequate support from husband and family, and the hormonal changes mothers feel (Oktaputrining, C., & Suroso, 2018). Also, those who experienced physical fatigue experienced postpartum blues. As mothers adjust to an additional role and new responsibilities in newborn care, some of them also experience a history of prolonged labor and a lack of rest and sleep, all of which can cause physical fatigue.

Not only that, but their physical fatigue is also caused by babysitting, changing diapers, nursing, bathing, and petting babies all day. Thus, those activities drain their energy and cause prolonged fatigue in the mother, especially without the help of her husband or other family members (Kumalasari & Hendawati, 2019). In the quantitative data, age is one of the risk factors influencing the incidence of postpartum blues.

Mothers aged <20 years or >35 years are at 3.5 times greater risk of developing the blues than those aged 20 to 35 (Yuniwati, Fithriany, & Fahriany, 2016). Primipara mothers aged <20 or > 35 are at a higher risk of pregnancy-related complications, while women under 20 whose bodies are not mature enough to absorb iron need large quantities. These young mothers are more likely to have an abortion and have their membranes rupture prematurely.

On the other hand, women over 35 might get too tired during childbirth. These events will make the mother’s condition psychologically unstable, leading to postpartum blues (Marwiyah et al., 2022). This study aligns with Salat & Suprayitno, (2022) finding that postpartum mothers aged less than 20 and over 35 years experience severe anxiety during the third trimester.

This is due to the lack of mental readiness in pregnant women at a young age, while mothers over 35 have anxiety during childbirth. From the data above, pregnancy at a risky age will undoubtedly affect mothers’ psychological condition after childbirth, resulting in postpartum blues. Pregnancy is one of the crucial factors that play a role in the incidence of postpartum blues. Mothers who give birth for the first time will adjust to role changes they have never experienced (Filaili, 2020).

The experience of giving birth for the first time is a stressful one that affects the adaptation process, which primiparous mothers experience more often than postpartum blues (Kusuma, 2019). Maternal anxiety starts from delivery until after childbirth. Some stressful events originate from postpartum pain, the newborn's condition, the safety of mothers and babies, newborn care, and the breastfeeding process (Solama & Handayani, 2022).

Mothers who do not have experience caring for babies will be exposed to worry, fear, and anxiety if they make mistakes. Primiparous mothers often feel confused about their new role, feel the maternal burden, and think they have no freedom after childbirth (Fatmawati, 2015). The existence of parties involved in newborn care is a factor that influences the incidence of postpartum blues. The existence of family support during postpartum makes mothers feel comfortable and emotionally relieved because they feel cared for and exposed to more information.

According to Taylor, social support can effectively reduce conditions that can be psychologically harmful in times of stress, resulting in a decline in postpartum blues incidents. The study showed that 20% of postpartum mothers who did not receive in-home childcare support had a 1.2 times greater risk of developing postpartum blues. Mothers with no support in caring for their babies will be at risk of having more burdens and experiencing prolonged fatigue that will cause postpartum blues.

The second theme was that untreated postpartum blues could cause severe mental disorders. The study found that participants mentioned how mothers refuse to take care of the baby and leave their husbands and house and harm the baby as depression may happen. Participants also mentioned that untreated blues lead to depression, and mothers may risk hurting themselves by suicide.

In Indonesia, people often seem less concerned about the incidence of postpartum blues due to the term's misunderstanding. Some people believe that postpartum blues are a natural side effect of fatigue after childbirth. Mothers who experience postpartum blues experience severe symptoms for an extended period, such as feelings of deep sadness and worthlessness, causing disturbances in daily activities. 15% of them experience postpartum depression, a continuation of the postpartum blues that are not appropriately handled.

The impact of untreated postpartum depression will cause the mother to experience prolonged and severe depression, to the point of wanting to hurt the baby or herself (Purwati & Noviyana, 2020). Another impact on an ongoing basis can cause the mother to become disinterested in the baby, unable to recognize the role and needs of the baby, so the breast milk is not flowing well and influences the baby's growth and development (Ambarwati & Wulandari, 2009). The third theme was that the lack of priority for postpartum mental health services influences the mother's efforts to overcome the blues.

This study found that participants' efforts to overcome the blues include support-seeking behavior from significant others such as husbands, parents, and cadres. They also sought advice from healthcare professionals and went to local healthcare facilities. As mentioned by all participants, specific mental health services for postpartum blues mothers were not available, as local health centers only provide physical treatment and general mental health services.

Salleh, Nor, & Mokhtar, (2022) mentioned that partners, parents, and families were a group of people that were close to them, and mothers were likely to seek support from them. Specifically, in marriage, a good relationship between couples helps their emotions as they are a reliable source of support. Chan, Levy, Chung, & Lee, (2002) stated that mothers were more comfortable asking for help from family members, especially biological mothers, and mothers-in-law, whose support was important to support their emotions.

Postpartum mothers feel that during challenging times such as the blues, their family's existence brings comfort and trust (Salleh et al., 2022). On the other side,

mothers who sought professional service tended to feel more overburdened, as being a new mom has more childcare responsibilities. They must adjust their normal daily tasks to the new baby's arrival. Not only is the mother overwhelmed with her new role, but they feel weak and tired, contributing to why they need help (Corrigan, Kwasky, & Groh, 2015).

This study also supports the findings of Azale, Fekadu, and Hanlon, (2016) who found that the lack of accessible maternal health services was very high and that the mother's help-seeking behavior toward professional support reflects proximity, autonomy, and awareness of treatment benefits. The fourth theme was that digital services help to alleviate the postpartum blues associated with manual service. This study found that participants mentioned that digital services helped lessen discomfort when sharing their feelings.

Although there are no current specific programs for mothers with postpartum blues, some also expressed that digital services help them get healthcare professionals' services remotely. This finding is consistent with the quantitative data in Table 1.3, which shows that most respondents (63%) chose the mobile service feature as the expected form of postpartum blues application. Participants chose this mobile platform because mobile phones are more practical than others.

According to Tang et al., (2022) digital health transforms the healthcare delivery system by involving patients and providers. Patients are more empowered to use technology to seek service, understand their health better, and have the autonomy to decide their condition with providers. The digital service also bridges unmet needs in care plans as a treatment for blue-only anticipatory guidelines and screening. Such unmet needs lack proper diagnosis, clinical screening guidelines adherence, limited access to behavioral health services, a lack of training in mental health management conditions, and personal stigma.

The fifth theme was that consultation is postpartum mothers' hope to overcome the blues by involving husbands as the primary support system. This study found that participants expect to share mental health concerns after childbirth. Some mentioned they wanted to share their feelings and exchange more about their peers' life adjustments. They also wished for local healthcare centers to provide a mental health corner so mothers could visit it.

Participants hoped that the consultation provided to talk about mental health experiences after childbirth would bring some ease to what they experience in the postpartum period. This study is consistent with Dagher, Pérez-Stable, & James, (2021) which showed that depressive symptoms are common in women after childbirth and that few mothers sought mental health consultation. On the other hand, the study mentioned that 62% of mothers met the cutoff for significant depressive symptoms, but only 19% consulted mental health professionals.

This is concerned about the possibility that no screening occurred during an obstetric office visit or that women did not seek consultation due to barriers to seeking mental healthcare or a lack of concern about the symptoms. Engqvist & Nilsson, (2011) also found that partners of women with mental health concerns, such as postpartum depression, were also affected. That is why expectant couples need to be provided with prenatal classes so that they can overcome them.

The researchers also stated that understanding the experiences of mothers' partners is critical for primary healthcare staff when caring for women with postpartum depression. By this means, consultation between healthcare providers and both mothers

and partners can ease mothers' adjustment after birth and help the partner's perspective on how this postpartum period might influence their lives altogether. Moreover, couples can anticipate the conflict and work together to overcome the postpartum blues.

The sixth theme was that comprehensive postpartum blues services involve professional health workers, health service providers, and referral systems. Participants mentioned that healthcare providers such as psychologists, obstetricians, and nurses are pivotal in postpartum blues service. Mothers also noted that the service should align with the local health center to track its members for needed referrals.

Meanwhile, according to the survey, 43 respondents chose the early detection feature. During the screening, mothers expected the application to include results, interpretation, and follow-up. The clearer the results and follow-up plan, the easier it is for mothers to predict blues incidents. Besides, most mothers (66%) postpartum chose the chat for the consultation feature because it was considered easier for mothers to express their feelings after giving birth.

This study result is consistent with McKinney, James, Murray, Nelson, & Ashwill, (2021) who stated that the American College of Obstetricians and Gynecologists recommended mothers have an initial assessment visit 3 weeks after delivery, follow-up ongoing care, and a comprehensive postpartum visit no later than 12 weeks after giving birth. The seventh theme was that digital postpartum blues services on mobile phones make it easier for mothers to access comprehensive mental health service features. Participants mentioned that future applications would be easier if accessed from a mobile phone, as most people own one and use it every day.

Comprehensive features such as virtual consultation through chat options, health education and related information, screening for early detection of postpartum blues, and simple therapies for overcoming the blues would be great sources for mothers. Mothers anticipated that extensive features would fully support future early detection applications. The qualitative data is consistent with the quantitative survey results. Table 1.3 showed that 76.7% of mothers chose early detection of postpartum blues, consultation, related health education materials, social networking sites of groups of pregnant women, and online referrals as a comprehensive form of digital service.

A total of 48% of respondents chose health news and videos. These types of information were thought to be more appealing than other types of material. Short and clear messages can also help mothers understand what is going on in the world. 53% of mothers choose music therapy, funny videos, and meditation or yoga as therapy when the mother is feeling anxious and tired while caring for the baby.

Funny videos have been deemed a form of healing for postpartum mothers when they suddenly feel sad. 58% of mothers choose discussion forum features compatible with social media, which can create status updates, give likes and comments, send messages, and have emoticons. It is becoming more interesting for postpartum mothers today with applications such as social media. Online referral features include psychologists, health centers, hospitals, and pharmacies. Local service and professional health workers are thought to be more effective and efficient in anticipating postpartum blues.

The eighth theme was that postpartum blues applications' obstacles do not hinder the benefits of the application. All participants voted from 8 to 10 out of 10 on the benefits of the future application. Although they also mentioned some future obstacles that might happen, participants thought the application was helpful for mothers, partners, healthcare providers, cadres, and health centers. Future obstacles mentioned

would be limited internet quotas, limited RAM and phone capacity, poor signal, an unhandy interface, and a paid subscription.

CONCLUSION

The study's goal is to investigate qualitatively related people's perceptions of postpartum blues and their expectations of its application design. Regardless of the research result, generalizing is difficult as the small number of participants cannot represent similar situations. However, the data portrayed can be used for future studies of postpartum blues.

The study obtained has provided significant information on the future application of smart diagnostic system design to accelerate the early detection of postpartum blues. Both qualitative and quantitative data suggest that postpartum mothers need support from their husbands in overcoming the blues. Mothers and husbands need a comprehensive digital mobile phone service that involves professional health workers, health service providers, and referral systems. Its use of the application is user-friendly and affordable to access.

ACKNOWLEDGEMENT

All authors received financial support from the Directorate General of Vocational Education, Indonesia, for research, authorship, and publication. The authors are grateful to all subjects for participating in this study.

REFERENCES

Admon, L. K., Dalton, V. K., Kolenic, G. E., Ettner, S. L., Tilea, A., Haffajee, R. L., … Zivin, K. (2021). Trends in Suicidality 1 Year before and after Birth among Commercially Insured Childbearing Individuals in the United States, 2006-2017. *JAMA Psychiatry*, *78*(2), 171–176. https://doi.org/10.1001/jamapsychiatry.2020.3550

Ambarwati, Eny Ratna; Wulandari, D. (2009). *Asuhan Kebidanan Nifas*. Yogyakarta: Mitra Cendikia Press.

Asadi, M., Noroozi, M., & Alavi, M. (2022). Identifying women's needs to adjust to postpartum changes: a qualitative study in Iran. *BMC Pregnancy and Childbirth*, *22*(1), 1–10. https://doi.org/10.1186/s12884-022-04459-8

Azale, T., Fekadu, A., & Hanlon, C. (2016). Treatment gap and help-seeking for postpartum depression in a rural African setting. *BMC Psychiatry*, *16*(1), 1–10. https://doi.org/10.1186/s12888-016-0892-8

Balaran, K., & Raman, M. (2021). Postpartum Blues - StatPearls - NCBI Bookshelf. *StatPearls*. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK554546/

Basu, K., Sinha, R., Ong, A., & Basu, T. (2020). Artificial Intelligence: How is It Changing Medical Sciences and Its Future? *Indian Journal of Dermatology*, *65*(5), 365. https://doi.org/10.4103/IJD.IJD_421_20

BBC news. (2021). Kesehatan mental: Depresi perinatal, pembunuh senyap yang

mengintai keselamatan jiwa ibu dan anaknya. *Kesehatan Mental: Depresi Perinatal, Pembunuh Senyap Yang Mengintai Keselamatan Jiwa Ibu Dan Anaknya*. Retrieved from https://www.bbc.com/indonesia/indonesia-56714093

Brummelte, S., & Galea, L. A. M. (2016). Postpartum depression: Etiology, treatment and consequences for maternal care. *Hormones and Behavior*, *77*, 153–166. https://doi.org/10.1016/J.YHBEH.2015.08.008

Chan, K. L., Leung, W. C., Tiwari, A., Or, K. L., & Ip, P. (2019). Using smartphone-based psychoeducation to reduce postnatal depression among first-time mothers: Randomized controlled trial. *JMIR MHealth and UHealth*, *7*(5). https://doi.org/10.2196/12794

Chan, S. W. C., Levy, V., Chung, T. K. H., & Lee, D. (2002). A qualitative study of the experiences of a group of Hong Kong Chinese women diagnosed with postnatal depression. *Journal of Advanced Nursing*, *39*(6), 571–579. https://doi.org/10.1046/j.1365-2648.2002.02326.x

Corbin, J., & Strauss, A. (2008). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory (3rd ed.)*. Thousand Oaks, California: SAGE Publications.

Corrigan, C. P., Kwasky, A. N., & Groh, C. J. (2015). Social Support, Postpartum Depression, and Professional Assistance: A Survey of Mothers in the Midwestern United States. *The Journal of Perinatal Education*, *24*(1), 48. https://doi.org/10.1891/1058-1243.24.1.48

Cox, J. L., Holden, J. M., & Sagovsky, R. (1987). Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. *The British Journal of Psychiatry : The Journal of Mental Science*, *150*(JUNE), 782–786. https://doi.org/10.1192/BJP.150.6.782

Dagher, R. K., Pérez-Stable, E. J., & James, R. S. (2021). Socioeconomic and racial/ethnic disparities in postpartum consultation for mental health concerns among US mothers. *Archives of Women's Mental Health*, *24*(5), 781–791. https://doi.org/10.1007/s00737-021-01132-5

Dalfen, A. (2008). *When Baby Brings the Blues: Solutions for Postpartum Depression*. HarperCollins.

Engqvist, I., & Nilsson, K. (2011). Men's experience of their partners' postpartum psychiatric disorders: Narratives from the internet. *Mental Health in Family Medicine*, *8*(3), 137–146.

Fatmawati, D. (2015). Faktor Risiko Yang Berpengaruh Terhadap Kejadian Postpartum Blues. *Jurnal EduHealth*, *5*(2), 82–93.

Filaili, N. E. (2020). GAMBARAN RESIKO DEPRESI POSTPARTUM ADA IBU USIA REMAJA. *Jurnal Kesehatan Bakti Tunas Husada*, *20*(2), 269–278.

Firth, J., Torous, J., Nicholas, J., Carney, R., Pratap, A., Rosenbaum, S., & Sarris, J. (2017). The efficacy of smartphone-based mental health interventions for depressive symptoms: a meta-analysis of randomized controlled trials. *World Psychiatry*, *16*(3), 287–298. https://doi.org/10.1002/wps.20472

Firth, J., Torous, J., Nicholas, J., Carney, R., Rosenbaum, S., & Sarris, J. (2017). Can smartphone mental health interventions reduce symptoms of anxiety? A meta-analysis of randomized controlled trials. *Journal of Affective Disorders*, *218*, 15–22. https://doi.org/10.1016/J.JAD.2017.04.046

Gulshan, V., Peng, L., Coram, M., Stumpe, M. C., Wu, D., Narayanaswamy, A., … Webster, D. R. (2016). Development and validation of a deep learning algorithm for detection of diabetic retinopathy in retinal fundus photographs. *JAMA - Journal of the American Medical Association*, *316*(22), 2402–2410. https://doi.org/10.1001/jama.2016.17216

Güneş, E. D., Yaman, H., Çekyay, B., & Verter, V. (2014). Matching patient and physician preferences in designing a primary care facility network. *Journal of the Operational Research Society*, *65*(4), 483–496. https://doi.org/10.1057/JORS.2012.71/FIGURES/4

Howard, L. M., Molyneaux, E., Dennis, C. L., Rochat, T., Stein, A., & Milgrom, J. (2014). Non-psychotic mental disorders in the perinatal period. *Lancet (London, England)*, *384*(9956), 1775–1788. https://doi.org/10.1016/S0140-6736(14)61276-9

Johansson, M., Benderix, Y., & Svensson, I. (2020). Mothers' and fathers' lived experiences of postpartum depression and parental stress after childbirth: a qualitative study. *International Journal of Qualitative Studies on Health and Well-Being*, *15*(1). https://doi.org/10.1080/17482631.2020.1722564

Kumalasari, I., & Hendawati, H. (2019). Faktor Risiko Kejadian Postpartum Blues Di Kota Palembang. *JPP (Jurnal Kesehatan Poltekkes Palembang)*, *14*(2), 91–95. https://doi.org/10.36086/jpp.v14i2.408

Kusuma, R. (2019). Karakteristik Ibu Yangmengalami Depresi Postpartum. *Jurnal Ilmiah Universitas Batanghari Jambi*, *19*(1), 99–103. https://doi.org/10.33087/JIUBJ.V19I1.571

Marwiyah, N., Suwardiman, D., Mutia, H. K., Alkarimah, N. A., Rahayu, R., Nuraeni, N., & Uzzakiyyah, I. (2022). Faktor Determinan yang Mempengaruhi terjadinya Postpartum Blues pada Ibu Nifas. *Faletehan Health Journal*, *9*(01), 89–99. https://doi.org/10.33746/FHJ.V9I01.298

McKinney, E. S., James, S. R., Murray, S. S., Nelson, K., & Ashwill, J. (2021). *Maternal-Child Nursing*. Elsevier Health Sciences. Retrieved from https://books.google.co.id/books?id=MGW7zQEACAAJ

Ministry of Health Republic Indonesia. (2020). *Profil kesehatan Indonesia 2019*. Jakarta.

Novinaldi, N., Edwardi, F., Gunawan, I., & Sarli, D. (2020). EPDSAp: Aplikasi Skrining Baby Blues Berbasis Android dengan Uji Sensitivitas dan Spesifisitas. *Jurnal RESTI (Rekayasa Sistem Dan Teknologi Informasi)*, *4*(6), 1135–1141. https://doi.org/10.29207/resti.v4i6.2481

O'Connor, E., Rossom, R. C., Henninger, M., Groom, H. C., & Burda, B. U. (2016). Primary care screening for and treatment of depression in pregnant and postpartumwomen evidence report and systematic review for the US preventive services task force. *JAMA - Journal of the American Medical Association*, *315*(4), 388–406. https://doi.org/10.1001/jama.2015.18948

Oktaputrining, D., C., S., & Suroso, S. (2018). Post Partum Blues: Pentingnya Dukungan Sosial Dan Kepuasan Pernikahan Pada Ibu Primipara. *Psikodimensia*, *16*(2), 151. https://doi.org/10.24167/psiko.v16i2.1217

Polit, D. F., & Beck, C. T. (2012). *Nursing Research: Generating and Assessing Evidence for Nursing Practice*. Wolters Kluwer Health/Lippincott Williams & Wilkins.

Purwati, P., & Noviyana, A. (2020). Faktor- Faktor yang Menyebabkan Kejadian Postpartum Blues. *Infokes: Jurnal Ilmiah Rekam Medis Dan Informatika Kesehatan*, *10*(2), 1–4. https://doi.org/10.47701/infokes.v10i2.1021

Putriarsih, R., Budihastuti, U. R., & Murti, B. (2017). Prevalence and Determinants of Postpartum Depression in Sukoharjo District, Central Java. *Journal of Maternal and Child Health*, *03*(01), 395–408. https://doi.org/10.26911/thejmch.2017.03.01.02

Rhayem, A., Mhiri, M. B. A., Drira, K., Tazi, S., & Gargouri, F. (2021). A semantic-enabled and context-aware monitoring system for the internet of medical things. *Expert Systems*, *38*(2). https://doi.org/10.1111/EXSY.12629

Salat, S. Y. S., & Suprayitno, E. (2022). Relationship Between Age , Parity Status With The Incidence Of Postpartum. *Healthy MU Journal*, *6*(1), 20–23.

Salleh, N. H. M., Nor, H. A. M., & Mokhtar, D. M. M. (2022). Coping Strategies and Help Seeking Behavior among Women with Symptoms Of Postpartum Depression in Selangor. *Malaysian Journal of Medicine and Health Sciences*, *18*(2), 114–122.

Solama, W., & Handayani, S. (2022). Faktor-faktor yang berhubungan dengan tingkat kecemasan ibu postpartum. *Jurnal 'Aisyiyah Medika*, *7*(1). https://doi.org/10.36729/JAM.V7I1.785

Sun, M., Tang, S., Chen, J., Li, Y., Bai, W., Plummer, V., … Cross, W. M. (2019). A study protocol of mobile phone app-based cognitive behaviour training for the prevention of postpartum depression among high-risk mothers. *BMC Public Health*, *19*(1), 1–7. https://doi.org/10.1186/s12889-019-6941-8

Tang, J. J., Malladi, I., Covington, M. T., Ng, E., Dixit, S., Shankar, S., & Kachnowski, S. (2022). Consumer acceptance of using a digital technology to manage postpartum depression. *Frontiers in Global Women's Health*, *3*(2). https://doi.org/10.3389/fgwh.2022.844172

Yuniwati, C., Fithriany, F., & Fahriany, C. (2016). Usia ibu saat persalinan dan dukungan sosial dengan kejadian baby blues syndrome pada ibu post partum di rumah sakit ibu dan anak Kota Banda Aceh. *Jurnal Ilmiah PANNMED (Pharmacist, Analyst, Nurse, Nutrition, Midwivery, Environment, Dentist)*, *10*(3), 305–308. https://doi.org/10.36911/PANNMED.V10I3.157

Jurnal Keperawatan Global
Vol. 7, No. 2, December 2022
https://doi.org/10.37341/jkg.v0i0.661

Systematic Review

Nursing Students Engagement In The Classroom And Clinical Practice

Nina Indriyawati[1*], Dwi Yuwono Puji Sugiharto[2], Martono Martono[3], Muchsin Muchsin[4], Yuyun Setyorini[5], Rendi Editya Darmawan[6]

[1,2,3,4] Education Management Doctoral Program Universitas Negeri Semarang, Indonesia
[5,6] Department of Nursing, Poltekkes Kemenkes Surakarta, Indonesia

ABSTRACT

Background: *The engagement of nursing students is very important and can affect their progress and success in the nursing profession in the future. The purpose of this research is to identify and explore the engagement of nursing students in the classroom and in clinical practice.*

Methods: *This study used a systematic review design. This research used a database of indexed international journals such as Pubmed, Google Scholar, Science Direct, and BMC for the period 2011–2021 to search for research articles and analyze results using the PRISMA flow diagram. Research articles have been screened according to the inclusion criteria of this research, namely those containing student engagement or the engagement of nursing students in the classroom or clinical practice.*

Results: *We obtained 12 research articles. Nursing students' engagement in the learning process takes place in two environments: the classroom and the clinical environment. Various studies on the engagement of nursing students showed a high level of engagement in the learning process that is influenced by various factors, including students, a student's relationships with other students, teachers, student-teacher/clinical instructor relationships, learning strategies, learning methods, and student relationships with the learning environment.*

Conclusion: *The engagement of nursing students is important for their progress in their future profession because the level of engagement will lead to various short-term and long-term learning outcomes.*

ARTICLE HISTORY
Received: December 27th, 2022
Accepted: December 29th, 2022

KEYWORDS
classroom, clinical practice, nursing, student, engagement;

CONTACT
Nina Indriyawati
indriyawatinina@poltekkes-smg.ac.id
Education Management Doctoral Program Universitas Negeri Semarang. Sekaran, Kec. Mt. Pati, Semarang City, Central Java, Indonesia 50229.

Cite this as: Indriyawati, N., Sugiharto, D. Y. P. ., Martono, M., Muchsin, M., Setyorini, Y., & Darmawan, R. E. (2022). Nursing Students Engagement In The Classroom And Clinical Practice. *(JKG) Jurnal Keperawatan Global*, 125–145. https://doi.org/10.37341/jkg.v0i0.661

INTRODUCTION

Learning can be referred to as a complete and continuous life process (Mohi-ud-din, 2019). Students who are less active, less participating, less involved, and who lack initiative are common occurrences in learning activities. Questions, ideas, and opinions often do not arise. Events that can occur on the lecturer's side include authoritarian

lecturers, unidirectional material delivery, considering students as recipients, note takers, and recording machines (Murniati et al., 2013).

Negative things like that often contribute greatly to the failure of students to take the course or the lack of student learning outcomes. For nursing students, this can affect the quality of their clinical practice in the field. Student learning outcomes can be increasingly influenced by many factors, one of which is engaging students in the learning process (Mohi-ud-din, 2019).

Student engagement is also included in the nursing students' learning process. Nursing students can improve their professional learning outcomes by being excited and motivated to be engaged in the learning process. Students can be involved by practicing complementing and providing new ideas in the nursing practice process (Hudson, 2015).

Student engagement is very important for their sense of learning and assimilation and their ongoing successful progression within the nursing profession. Engagement is an important aspect of quality nursing behavior. There are three components of engagement, including behavioral engagement, emotional engagement, and cognitive engagement (Hudson & Carrasco, 2015).

Affective engagement is related to positive emotions during learning, it can be in the form of interest, pleasure, and enthusiasm during learning. Cognitive engagement relates to mental efforts such as the strategy used, concentration, and metacognition. Behavioral engagement it relates to student behavior that can be observed during learning, including time spent on tasks, active participation in the discussion, asking questions, and any other positive behavior in the classroom (Rahayu, 2018).

Today's care providers have changed to meet the current demand for services for multifaceted, acute, and chronic illnesses, so there is a need for appropriate learning styles to promote nursing health education reform and nursing quality. The five multifaceted fundamental competencies announced by the Institute of Medicine's recommendations include that all health professionals should be educated to provide patient-centered care, work as members of an interdisciplinary team, employ evidence-based practice, apply quality improvement approaches, and utilize informatics (Hudson, 2015). Engagement can help students become more independent thinkers and well-rounded problem solvers to meet these necessary transitions.

Educators continue to make learning style transitions following current learning priorities. There are active, participatory, experiential, and contextualized interactions (Crookes et al., 2013). Nursing students in the learning process are educated and supported in multiple roles, both in the classroom and in clinical practice. Students who have active engagement in both environments become more effective, current, and knowledgeable as they become engaged in nursing (Hudson, 2015).

Meanwhile, engagement in the classroom begins with a transition from traditional to active learning, where educators begin to intersperse several questions to stimulate discussion, but this therapy is still not active enough. Student engagement in the classroom can be achieved by breaking students into various-sized groups that work on specific problem-solving tasks, re-viewing and critiquing required content articles, and/or organizing various types of presentations. While engaged in clinical practice, according to Midgley, (2006) students can be involved in responding to and dealing with unexpected and unplanned activities in clinical practice.

Learning opportunities in these clinical settings are predominantly experiential (Hudson, 2015). Based on this description, it is needed to analyze research articles about

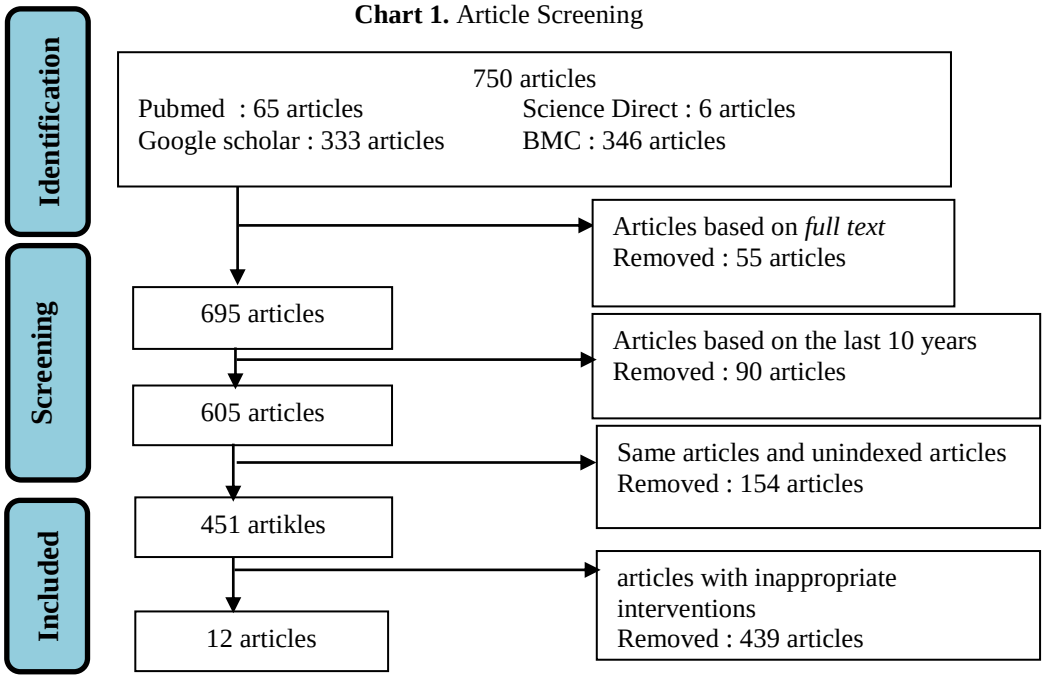
"Nursing Students Engagement in the Classroom and Clinical Practice". The purpose of this research is to identify and explore the engagement of nursing students in the classroom and in clinical practice.

MATERIALS AND METHOD

This study used a systematic review design. The article search strategy used a database of indexed international journals such as PubMed, Google Scholar, Science Direct, and BMC. In July 2021, researchers conducted a journal search with a maximum limit of 10 years of publication for research articles. Search for research articles using the keywords "nursing students," "student engagement," "classroom," and "clinical practice".

The inclusion criteria used in this study include articles published in indexed international journals for the period 2011–2021, accessible in full text, research articles in English, types of original research articles, and articles containing student engagement or the engagement of nursing students in the classroom or clinical practice. The exclusion criteria in this study are research articles that are not indexed by international journals, articles that are only in abstract form, and articles that contain content other than student engagement in classrooms and clinical practice. The research articles obtained from the search were 12 articles, analyzed and synthesized in a table containing the author's name, the title of the article, year of publication, methodology, and research results.

Chart 1. Article Screening



RESULTS

Table 1. Research article review summary

Title	Authors	Year	Methodology	Result
Researching Nursing Students' Engagement: Successful Findings for Nursing	Kathleen Hudson and Rebecca Carrasco	2015	This study utilized a mixed methods approach, including both post-intervention Likert scale quantitative questionnaire and 4 brief open-ended qualitative questions. The tool used, Student Engagement Questionnaire, seeks to assess the level of student engagement within their formal studies. Participants in this study were lever two nursing student enrolled in a psychiatric nursing course during the fall of 2014 and spring 2015 semesters, consisting of 44 respondents who agreed to participate in this study.	The results of the research from the Student Engagement Questionnaire data show that in the aspects of Self-managed learning, Relationship with other students, relationship between teaching staff, Hybrid course feedback, and Mental health course scores, the average score is high to very high, which is a score range of 3 ,5 to 4.5. Students respond that the course activities help them understand patient care in the real world of nursing and can combine classroom and clinical content to learn how to apply the content. This course activity also makes students more prepared to deal with patients directly in clinical practice, students become better prepared and understand better how to approach openly with therapeutic communication, how to respond to patients and more confidently.
Nursing student engagement: Researching the journey and its potential impact on transitions to practice	Kathleen Hudson, Zhaomin He and Rebecca Carrasco	2019	The study used a Student Engagement Questionnaire consisting of five subscales. Respondents of this study involved 251 nursing students level 2 and level 4. Data analysis was carried out by calculating the average of each subscale and the overall	The results showed that students had a high average on the engagement of each subscale or overall with an average score of 3.88 to 4.49. The results also showed a significant difference between the engagement of level 2 and 4 students

Title	Authors	Year	Methodology	Result
			average. Statistical analysis tests used independent samples Mann-Whitney's and Kruskal-Wallis tests to test for differences and student engagement.	(p=0.013). Students reported high results on teamwork and collaboration, as well as positive responses to their teachers such as trying to help students understand, wanting students to learn hands-on and students want to excel. The support and care of the mentor in clinical practice will make nursing to patients better by being 'engaged' in making shared decisions..
Nursing Student Engagement: Taking a Closer Look	Kathleen Hudson and Rebecca Carrasco	2017	This study used a sample of nursing students level 2 and 4. The instrument used was the Student Engagement Questionnaire which consisted of 35 questions and was followed by two open-ended questions to identify the level of student engagement during the nursing course. Analyses including descriptive, statistical factorial ANOVA, and qualitative review were utilized when comparing results.	There are quantitative findings in this study, it was found that students have high engagement on campus. Intellectual aspect showed a significant interaction effect (p=0.037). In the aspect of working together, it showed that student engagement is high and the same at every level and campus. In the teaching aspect, it showed a significant effect (p = 0.005). The teacher-student relationship showed a significant difference in smaller campuses (p=0.008) with a lower difference at level 4. In general, it showed that the level of engagement and satisfaction of students was high with the campus teaching/learning environment.
Exploring Nursing Students Engagement in Their Learning	Amna Abdul Sattar, Rubina Kouar, Syed	2018	This study used a cross-sectional quantitative research design. The research sample was 135 from the Lahore School of	The results of this study showed that from the 3 domains student engagement (Meaningful process (3.75±),

Title	Authors	Year	Methodology	Result
Environment	Amer Gillani		Nursing at the University of Lahore using the Student Engagement Questionnaire (SEQ) instrument developed by David Kember and Doris Leuing. Statistical analysis tests used descriptive statics, Pearson correlation, and regression analysis.	Participation (3.35±) and Focused attention (3.25±)) had a high average score. The three sub-domains also have a positive correlation, where if one sub-domain increases, it will have a positive effect on the other sub-domains. All domains of student engagement are very important for student nurses in the classroom as well as in the clinical practice setting. The research also student engagement in this study did not show a significant relationship to GPA scores, but it is necessary that students with low GPAs will usually try to be more involved in learning so that subsequent results will be better.
Exploring nursing student engagement in the learning environment for improved learning outcomes	Melba Sheila D'Souza, Chandrani Isac, Ramesh Venkatesaperumal, K Subrahmanya Nairy, Anandhi Amirtharaj	2014	This study used an exploratory cross-sectional research design. The sample used was 250 nursing students. The instrument used is the Student Engagement Questionnaire (SEQ). Analysis of the data in this study using NVivo software program to analyze the responses open and look for the code that appears significantly in the encoding analytically. Thematic content analysis and constant comparison techniques were also carried out to draw conclusions from the text	The results showed that from all subdomains of student engagement (SE), 48%-68% of students had a high average score. Students have engagement at various levels such as with peer groups, faculty and in academic and clinical work to improve cognitive, emotional and behavioral learning and academic performance. Increasing the engagement of nursing students in the classroom can be done by using active learning in the classroom, discuss in small groups, and teachers who facilitate active. In a

Title	Authors	Year	Methodology	Result
				clinical environment, students prefer to develop behavioral competence through independent practice, the ability to seek knowledge and appropriate information.
Association Between the Use of Active Learning Strategies and Classroom Engagement Among Nursing Students	Anam Mohi-ud-Din, Muhammad Hussain, Muhammad Afzal Syed and Amir Gillani	2019	This study used a correlational, descriptive, cross-sectional design. The sample used was 177 nursing students. The instruments used for data collection are Active Learning Environments Scale (ALES) and Adapted Engaged Learning Index (AELI). Data analysis using Descriptive statistics and inferential statistics.	The results showed that there was a significant relationship between active learning strategies and the engagement of nursing students in the classroom ($r=.225$, $p<0.05$). Students will tend to be more involved and pay more attention to class when taking notes, actively listening to lectures or working in groups and participating in group discussions.
The association between academic engagement and achievement in health sciences students	Maria J Casuso-Holgado, Antonio I Cuesta-Vargas, Noelia Moreno-Morales, Maria T Labajos-Manzanares, Francisco J Barón-López and Manuel Vega-Cuesta	2013	This study used a cross-sectional research design and involved 304 health science students who were asked to fill out the Utrecht Work Engagement Scale for Students (UWES-S) instrument. Data analysis used descriptive statistics and the main analysis was guided towards a search for the correlations.	The results showed that there was a significant relationship between engagement and academic achievement, although the relationship was not strong enough to have a high predictive value ($r<0.3$).
Strategies for sustaining and enhancing nursing students'	Mohammad Reza Ghasemi, Hossein Karimi Moonaghi and	2020	The method used is a non-systematic narrative literature review. Scientific articles were collected from the CINAHL database (nursing content), ProQuest,	The results showed that there were five categories of teaching strategies to promote the engagement of nursing students. the main categories include

Title	Authors	Year	Methodology	Result
Engagement in academic and clinical settings: a narrative review	Abbas Heydari		Medline, Cochrane, Google Scholar, and Scopus with the keyword 'engagement, nurse, student' with a publication date of January 2020-June 2019 and obtained 32 scientific articles.	technology-based strategies, collaborative strategies, simulation-based strategies, research-based strategies, and miscellanea learning strategies, from all these categories technologies- and simulation-based strategies are the most attractive strategies for students and make students more active in the learning process.
Can flipped classroom enhance class engagement and academic performance among undergraduate pediatric nursing students? A mixed methods study	Toqa Jameel Abbas Busebaia and Bindu John	2020	The study used the Action Research (AR) method with a mixed method with 26 respondents from nursing students from the pediatric course. The instruments used were Student Class Engagement Checklist, Quizzes, and Focus group semi-structured interview questionnaire. Data analysis used Friedman test and systematic transformation to analyze qualitative content.	The results showed that there was a significant relationship between flipped classroom and student engagement (p 0.001). Flipped Classroom (FCR) can increase student engagement through active learning and can improve student learning outcomes. Students become more confident and can adapt to their learning style. Using a combination of approaches such as pre-class activities, self-paced video lectures, and post-class activities provides a very effective way for students to understand learning materials.
Engagement in clinical learning environment among nursing students: Role of nurse educators	Melba Sheila D'Souza, Ramesh Venkatesaperu mal, Jayanthi Radhakrishnan,	2013	Review of article literature	The results showed that students preferred to be engaged in a clinical practice environment through several things including diversity experiences such as being engaged in handling various cases or problems, engaging in

Title	Authors	Year	Methodology	Result
	and Shreedevi Balachandran			discussions with colleagues and attending various clinical events. Second, collaborative learning opportunities through case scenarios, evidence-based practice, e-learning, portfolio studies and simulations, this is done with collaborative learning to encourage students to think deeply about the cases presented. Third, student-faculty interactions, nurse educators in this case are helping students to improve clinical problem solving skills, facilitating intellectual progress and increasing clinical satisfaction, and the last is active learning, in a clinical environment such as conducting comprehensive care, writing case studies, reflective practice, looking for evidence-based references, participating in clinical discussions and many more, in this case nurse educators must utilize active learning in students' clinical practice activities.
Nursing Student Engagement: Student, Classroom, and Clinical Engagement	Kathleen F. Hudson	2015	Review of article literature	In the classroom, student engagement can be done by solving certain problems in small groups, critiquing content articles, through quiz questions and arranging various types of presentations. This engagement is especially related to

Title	Authors	Year	Methodology	Result
				the engagement of teachers during learning, such as teachers who provide feedback, have communication skills, and are able to convey various challenging topics through various content to provide positive encouragement for students. In a clinical environment, student engagement will relate to the diversity of patient status and conditions, students will carry out experiential learning. The engagement of students in the clinical practice environment of the course is closely related to the role of students' clinical instructors.
Student nurses' experiences of the clinical learning environment in relation to the organization of supervision: A questionnaire survey	Annelie J. Sundler, Maria Björk , Birgitta Bisholt , Ulla Ohlsson, Agneta Kullén Engström, and Margareta Gustafsson	2013	Research method using A cross-sectional with comparison design with a mixed method. The sample used 183 nursing students to fill out the Clinical Learning instrument Environment, Supervision and Nurse Teacher (CLES + T). Data analysis using Kruskal-Walis test and Mann-Withney U-test.	The results showed that students generally had a positive experience in their clinical learning environment. The study showed that the organization of supervision was related to the pedagogical atmosphere (p 0.025) and the relationship with the supervisor (p 0.001). The role of the precept has an important influence on clinical practice, students have more satisfaction and positive experiences regarding the supervisory relationship and clinical placement, when they have a personal mentor than were those who had

Title	Authors	Year	Methodology	Result
				different preceptors each day.

DISCUSSION

Based on a literature review of 12 research articles that have been analyzed, it appears that, in general, there is a high level of engagement among nursing students in the classroom and in the clinical environment. This engagement is influenced by various factors, various parties, and various strategies and methods during the learning process.

Engagement

Engagement is active learning, which is very interactive and problem-oriented, and encourages participation and contribution from everyone involved, where the higher the level of engagement, the more information, and understanding students will have (Hudson, 2015). Although the definition of engagement is still being developed, according to Krause and Coates, (2008) engagement is summarized into multidimensional aspects (Lester, 2013). This is also explained in the theory of Fredricks, Blumenfeld, and Paris, (2004) according to which engagement is a multi-faceted construction consisting of several components that are interconnected by the importance placed on their relationship to one another (Fredricks et al., 2004). Engagement is also defined as a persistent and pervasive affective-cognitive state or a work-related state of vigor, dedication, and absorption (Schaufeli et al., 2002).

Student Engagement

Student engagement is the energy and effort of students in their learning community, which can be observed through several indicators (behavioral, cognitive, and affective) across a continuum, shaped by structural and internal influences, including complex interactions of relationships, learning activities, and the learning environment, where more and more the level of student engagement will then lead to a variety of short and long term learning outcomes and can encourage further student engagement (Bond & Bedenlier, 2019). In addition, student engagement can also be defined as a student's psychological investment and efforts in the learning process to understand and master the material, skills, and instructions (Rahayu, 2018). In relation to the concept of engagement, student engagement as a multidimensional construct also has several dimensions (Shernoff et al., 2016).

There are three primary dimensions to student engagement, namely behavioral engagement, cognitive engagement, and emotional engagement (Ryu & Lombardi, 2015). Behavioral engagement refers to student behavior that can be observed during learning, including time-on tasks, active participation in the discussion, asking questions, and any other positive behavior in the classroom. Cognitive engagement relates to mental efforts such as the strategy used, concentration, and metacognition. Affective (emotional) engagement is related to positive emotions during learning, it can be in the form of interest, pleasure, and enthusiasm during learning (Rahayu, 2018).

Nursing Student Engagement

The engagement of nursing students is very important for success in nursing programs, with the aim of remaining in the profession for a long time after graduation. There are 3 things to focus on regarding the engagement of nursing students, including engagement between the student and teacher, the student connection with their learning, and the student linking with their learning environment (Bowcock & Peters, 2015). The description of the level of engagement of nursing students in various learning activities can be seen from the research by Hudson and Carrasco, (2015) that showed that from

the Student Engagement Questionnaire data, in the aspects of self-managed learning, relationships with other students, the relationship between teaching staff, hybrid course feedback, and mental health course scores, the average score is "high to very high," which is a score range of 3,5 to 4.5.

Then, according to Hudson et al., (2019) students had a high average of engagement in each subscale or overall, with a score ranging from 3.88 to 4.49. Increased student involvement occurs with academic goals and is associated with the ability to pursue ideas independently and synthesize information, which ultimately leads to a desire to learn independently (Kuh, 2010). Carini, Kuh, and Klein stated that student engagement in clinical learning and increasing student academic success had a clear relationship with high student motivation (Carini et al., 2006).

In addition, research from Sattar et al., (2018) also mentions that from the 3 domains student engagement (meaningful process (3.75±), participation (3.35±) and focused attention (3.25±)) had a high average score, and research from D'Souza et al., (2013) found that from all subdomains of student engagement (SE), 48%-68% of students had a high average score. Nursing students who have the opportunity to learn together and think about the subject matter are more deeply engaged than other students in conventional courses using rote learning (Feingold et al., 2008). Students who are engaged in learning get better grades and experience increased practical competition along with the ability to transfer skills to new situations (Braxton et al., 2000).

Several studies have discussed how student engagement is related to academic achievement, where the higher the student engagement, the higher the student's academic value. Research conducted by Casuso-Holgado et al., (2013) showed that there was a significant relationship between engagement and academic achievement, although the relationship was not strong enough to have a high predictive value ($r < 0.3$). The results of the study are supported by the statement by Svanum et al., (2014) that students who have high academic engagement are 1.5 times more likely to graduate and take 1 semester. Less is needed, and besides, students will get a higher GPA.

Another study by Sattar et al., (2018) showed the opposite result: student engagement in this study did not show a significant relationship to GPA scores. This is not in line with research from Popkess, (2010) that shows there is no relationship between reported mean scores and student engagement (Popkess, 2010). However, this does not always happen because students with low GPAs will usually try to be more involved in learning activities so that subsequent results will be better and improved (Sattar et al., 2018).

Nursing students are formed and educated in multiple roles, they are not only educated to be engaged in learning in the classroom but also in a clinical practice environment (Hudson, 2015). Student engagement can help students become more independent thinkers and problem solvers to facilitate the necessary transitions. Transitioning learning styles must continue to be sought by teachers to be more in line with current learning priorities, namely active, participatory, experiential, and contextual interactions (Crookes et al., 2013).

Nursing Student Engagement in the Classroom

Student engagement in the classroom is an activity that involves students' attention, interest, investment, and efforts in learning. This engagement is different from engagement in the school environment, where it will be seen in the engagement of students in their participation in extracurricular activities, attendance, and records of

referrals and suspensions (Wang et al., 2014). Engagement at the class level focuses on student engagement in learning activities directly and intentionally (Rahayu, 2018).

In the classroom, student engagement can be facilitated through group work or presentation activities, which of course require teacher engagement. This is in accordance with research conducted by Hudson, (2015) which found that in the classroom, student engagement can be achieved by solving certain problems in small groups, critiquing content articles and quiz questions, and arranging various types of presentations. This engagement is especially related to the engagement of teachers during learning, such as teachers who provide feedback, have communication skills, and are able to convey various challenging topics through various content to provide positive encouragement for students.

This is in line with research by D'Souza et al., (2013) that students prefer to discuss in small groups to help their critical thinking and problem-solving skills and interact with the teacher by voicing their thoughts and getting feedback from the teacher to stimulate discussion. Teachers facilitated student engagement through active learning such as discussions, presentations, defenses, and nursing debates. Students' perceptions of effective learning revealed that teachers' knowledge, feedback, and communication skills are important for their positive encouragement, so educators, in particular, should be engaged in order for student learning to be at a higher level (Kelly, 2007).

According to students, teachers have a good relationship with students in teaching and are willing to help students, even provide extra help if needed, accommodate student consultation, and make students more confident in asking questions (Hudson & Carrasco, 2017). Student success in academics has a close relationship with active learning strategies (Miller & Metz, 2014). The research conducted by Mohi-ud-din, (2019) showed that there was a significant relationship between active learning strategies and the engagement of nursing students in the classroom ($r=.225$, $p<0.05$).

Students will tend to be more involved and pay more attention to class when taking notes, actively listening to lectures or working in groups, and participating in group discussions. The National Survey of Student Engagement (NSSE) measures active learning on the following grounds: presentation making, working with fellow students on classroom projects, asking questions and contributing through answers, working with fellow students on assignments outside classroom settings, teaching peers, working on a community-based project, and discussing course material with people outside of class (Carr, 2015). Active learning is an effective implementation in relation to increasing student engagement and actually having an impact on student learning (Oermann, 2015).

Student engagement among nursing students can be promoted through active learning, which has a positive effect on problem-solving, critical thinking, and persistence (Braxton et al., 2000). The flipped classroom method for students can be one way to encourage their engagement and academic performance during learning. This is reinforced by Busebaia & John, (2020) research, which shows a significant difference showing an increase in student engagement with the flipped classroom method (p 0.001).

The flipped classroom is an approach that can be adjusted by students, resources, and time and involves students in active learning in the classroom by utilizing more collaborative activities under the direction and supervision of the instructor (Berrett, 2012). This approach focuses on creating a student-centered learning environment so that students feel more competent when given the opportunity to actively participate in

the dissemination of knowledge rather than being passive recipients. Besides that, students become more confident and can carry out their own learning style (Abeysekera & Dawson, 2015), and classroom discussions help students generate ideas, lead to a better understanding of concepts and applications in clinical practice, and improve critical and reflective thinking.

In the clinical learning curriculum of nursing students, the flipped classroom model can also improve clinical learning skills and student scores by using video and quiz instruments to help build content and improve practice (Bergmann & Sams A, 2011). The use of video will be very good as one of the learning strategies because research from Ghasemi et al., (2020) showed that the category of technology-based strategies, one of which is video, is the most interesting for students and makes them more active in the learning process. In addition to being technology-based, students are more interested in simulation-based techniques such as simulation with manikins and tag team simulation.

Simulation-based techniques are an effective procedure to increase the engagement of nursing students Power et al., (2016), and instructors can actively involve students to promote their simulation skills and experiences (Levett-Jones et al., 2015). There are some students who like online classes because it allows them to get more reading done and learn concepts (Hudson & Carrasco, 2015). This online learning technique is now widely applied at various levels of education due to the COVID-19 pandemic. Student engagement must be maintained and promoted in this online class because teachers cannot see the students who participate directly.

The research from Hamptom & Pearce, (2016) found that students in online classes had a high average score of engagement (4.15). Students who use internet technology and learning techniques that are more reflective and integrative get more practical competencies and experience a lot of personal and social development, this showed that there is a positive relationship between technology and web-based learning on the level of engagement and learning outcomes (Angelino & Natvig, 2007). Teachers who teach online classes need to be friendly and enthusiastic by responding promptly to student messages, assessing learning outcomes frequently, and posting course updates (Foronda, 2014).

According to Conrad and Donaldson, (2012) the success of online-based classes that utilize internet technology relies on the instructor's ability to create a sense of presence (the dynamic interplay of thought, emotion, and behavior) and student engagement in the learning process. The key to student engagement in online learning is for students to be engaged and supported to take responsibility for their learning (Groccia, 2018).

Nursing Student Engagement in the Clinical Practice

The quality of clinical experience in the nursing curriculum will greatly affect the quality of nursing education, so the engagement of nursing students in clinical learning needs to be done to improve critical thinking skills, openness to diversity, and facilitate openness to challenges (Pascarella et al., 2006). Clinical practice is essential to nursing education as it provides experience with patients and work environments that prepare students for future work as nurses. The significance of practice regarding the development of clinical skills and the integration of theory and practice is widely recognized Midgley, (2006), as is its impact on students' choices of future workplaces (Henriksen et al., 2012).

The engagement of nursing students in the clinical environment is a student's willingness to participate actively and survive despite obstacles and challenges in the learning process in the clinical environment. Research conducted by D'Souza, et al., (2013) showed that students preferred to be engaged in a clinical practice environment through several things, including diverse experiences, collaborative learning opportunities, student-faculty interactions, and active learning. Diversity experiences such as being engaged in handling various cases or problems, engaging in discussions with colleagues, and attending various clinical events are unique learning opportunities in a clinic that is rich in cultural diversity.

Second, collaborative learning opportunities are provided through case scenarios, evidence-based practice, e-learning, portfolio studies, and simulations to encourage students to think deeply about the cases presented. Various studies have documented the positive impact of collaborative learning on student engagement and development (Cabrera et al., 2002). Third, student-faculty interactions and nurse educators in this case are helping students to improve clinical problem-solving skills, facilitate intellectual progress, and increase clinician satisfaction.

The last is active learning, in a clinical environment, such as conducting comprehensive care, writing case studies, engaging in reflective practice, looking for evidence-based references, participating in clinical discussions, and many more. In this case, nurse educators must utilize active learning in students' clinical practice activities. Nurse educators can encourage student participation in clinical activities by utilizing active learning strategies, teaching for learning, and clinical practice coherence combined with clinical activities (Koh, 2002).

Student engagement in the clinical environment will relate to the diversity of patient status and conditions, students will carry out experiential learning. The engagement of students in the clinical practice environment of the course is closely related to the role of clinical instructors to facilitate, encourage, and support their reflective activities. Student engagement in clinical learning will help students to develop critical thinking skills, gain knowledge, and increase their self-confidence (Hudson, 2015).

Supportive student-teacher relationships and engaging nursing students in true interprofessional work will enable students to assist in creating teamwork that is committed to increasing the team's responsibility for providing care. This experience will also create a sense of independence, autonomy, communication, and collaboration and increase the student's understanding of team roles and contributions (Hood et al., 2014). The role of clinical instructors affects the engagement and satisfaction of nursing students. The research from Sundler et al., (2014) showed that students generally had a positive experience in their clinical learning environment.

The study showed that the organization of supervision was related to the pedagogical atmosphere (p 0.025) and the relationship with the supervisor (p 0.001). The role of the preceptor has an important influence on clinical practice. Students have more satisfaction and positive experiences regarding the supervisory relationship and clinical placement when they have a personal mentor than those who have different preceptors each day. The mentor's support and care will improve nursing care for patients by getting them "engaged" in making shared decisions.

Students will be engaged in looking for ways to improve the patient's clinical status, improve care, reduce the length of stay, and provide information during the patient's stay (Hudson et al., 2019). Faculty members and clinical instructors must act as

role models and facilitate learning by providing an environment that promotes holistic care, inquiry, critical thinking, accountability, and more autonomous and professional behavior. Nursing students should seek educational opportunities to acquire knowledge for role preparation, participate in knowledge generation, and develop personally and professionally. The students can train their caring behaviors as long as they are in clinical practice (Mukhtar et al., 2016).

CONCLUSION

The engagement of nursing students is very important for their progress in their profession in the future because the level of engagement will lead to various short-term and long-term learning outcomes. Nursing students participate in the learning process in two settings: the classroom and the clinical setting. Several studies on nursing student engagement revealed a high level of engagement in the learning process.

The level of that engagement is influenced by various factors, including the following: students, a student with other students, teachers, student-teacher/clinical instructor relationships, learning strategies, learning methods, and student relationships with the learning environment. Engagement will affect the learning process of students in the classroom and develop academic skills in a clinical environment, so it will have an impact on student learning outcomes.

REFERENCES

Abeysekera, L., & Dawson, P. (2015). Motivation And Cognitive Load In The Flipped Classroom: Definition, Rationale And A Call For Research. *Higher Education Research And Development*, *34*(1), 1–14. Https://Doi.Org/10.1080/07294360.2014.934336

Angelino, L. M., & Natvig, D. (2007). Strategies To Engage Online Students And Reduce Attrition Rates. *The Journal Of Educators Online, 4*(2), 1–14.

Bergmann, J., & Sams A. (2011). Flipped Your Classroom. In *Journal Of Physics A: Mathematical And Theoretical* (Vol. 44, Issue 8). Https://Www.Rcboe.Org/Cms/Lib/GA01903614/Centricity/Domain/15451/Flip_Your_Classroom.Pdf

Berrett, D. (2012). How "Flipping" The Classroom Can Improve The Traditional Lecture. *The Chronicle Of Higher Education, 12*(9), 1–14. Http://Web.Ebscohost.Com.Proxy.Lib.Pdx.Edu/Ehost/Pdfviewer/Pdfviewer?Sid=Cfd0e2c7-A51a-4a8f-980e-96232c36538e%40sessionmgr4&Vid=2&Hid=20

Bond, M., & Bedenlier, S. (2019). Facilitating Student Engagement Through Educational Technology: Towards A Conceptual Framework. *Journal Of Interactive Media In Education, 2019*(1), 1–14. Https://Doi.Org/10.5334/Jime.528

Bowcock, R., & Peters, K. (2015). Nurse Education In Practice Discussion Paper : Conceptual Comparison Of Student And Therapeutic Engagement. *Nurse Education In Practice*, 2–5. Https://Doi.Org/10.1016/J.Nepr.2015.10.010

Braxton, J., Milem, J. F., & Barbara, S. (2000). The Influence Of Active Learning On

The College Student Departure Process. *The Journal Of Educators Online, August 2014*. Https://Doi.Org/10.2307/2649260

Busebaia, T. J. A., & John, B. (2020). Can Flipped Classroom Enhance Class Engagement And Academic Performance Among Undergraduate Pediatric Nursing Students? A Mixed-Methods Study. *Research And Practice In Technology Enhanced Learning*, *15*(1), 1–17. Https://Doi.Org/10.1186/S41039-020-0124-1

Cabrera, A. F., Nora, A., Crissman, J. L., Terenzini, P. T., Bernal, E. M., & Pascarella, E. T. (2002). Collaborative Learning: Its Impact On College Students' Development And Diversity. *Journal Of College Student Development*, *43*(1), 20–34.

Carini, R. M., Kuh, G. D., & Klein, S. P. (2006). *Student Engagement And Student Learning : Testing The Linkages *. 47*(1), 1–32. Https://Doi.Org/10.1007/S11162-005-8150-9

Carr, R. (2015). *Active Learning : The Importance Of Developing A Comprehensive Measure*. Https://Doi.Org/10.1177/1469787415589529

Casuso-Holgado, M. J., Cuesta-Vargas, A. I., Moreno-Morales, N., Labajos-Manzanares, M. T., Barón-López, F. J., & Vega-Cuesta, M. (2013). The Association Between Academic Engagement And Achievement In Health Sciences Students. *BMC Medical Education*, *13*(1). Https://Doi.Org/10.1186/1472-6920-13-33

Crookes, K., Crookes, P. A., & Walsh, K. (2013). Meaningful And Engaging Teaching Techniques For Student Nurses: A Literature Review. *Nurse Education In Practice*, *13*(4), 239–243. Https://Doi.Org/10.1016/J.Nepr.2013.04.008

D'Souza, M. S., Isac, C., Venkatesaperumal, R., Nairy, K. S., & Amirtharaj, A. (2013). Exploring Nursing Student Engagement In The Learning Environment For Improved Learning Outcomes. *Clinical Nursing Studies*, *2*(1), 1–16. Https://Doi.Org/10.5430/Cns.V2n1p1

D'Souza, M. S., Venkatesaperumal, R., Radhakrishnan, J., & Balachandran, S. (2013). Engagement In Clinical Learning Environment Among Nursing Students: Role Of Nurse Educators. *Open Journal Of Nursing*, *03*(01), 25–32. Https://Doi.Org/10.4236/Ojn.2013.31004

Feingold, C. E., Cobb, M. D., Givens, R. H., Arnold, J., Joslin, S., & Keller, J. L. (2008). Student Perceptions Of Team Learning In Nursing Education. *The Journal Of Nursing Education*, *47(5)*, 214–222. Https://Doi.Org/DOI: 10.3928/01484834-20080501-03

Foronda, C. (2014). Spice Up Teaching Online! *Ners Educator Trchnology Corner*, *39*(6), 265–266. Https://Doi.Org/10.1097/NNE.0000000000000081

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School Engagement Potential Of The Concept. *Review Of Educational Research*, *74*(1), 59–109.

Ghasemi, M. R., Moonaghi, H. K., & Heydari, A. (2020). Strategies For Sustaining And Enhancing Nursing Students' Engagement In Academic And Clinical Settings: A Narrative Review. *Korean Journal Of Medical Education*, *32*(2), 103–117. Https://Doi.Org/10.3946/KJME.2020.159

Groccia, J. E. (2018). *What Is Student Engagement? 154*, 11–20. Https://Doi.Org/10.1002/Tl.20287

Hamptom, D., & Pearce, P. (2016). Student Engagement In Online Nursing Courses. *Nurse Educator*, *00*(0), 1–5. Https://Doi.Org/10.1097/NNE.0000000000000275

Henriksen, N., Normann, H. K., & Skaalvik, M. W. (2012). Development And Testing Of The Norwegian Version Of The Clinical Learning Environment, Supervision And Nurse Teacher (CLES+T) Evaluation Scale. *International Journal Of Nursing Education Scholarship*, *9*(1). Https://Doi.Org/10.1515/1548-923X.2239

Hood, K., Cant, R., Leech, M., Baulch, J., & Gilbee, A. (2014). Trying On The Professional Self: Nursing Students' Perceptions Of Learning About Roles, Identity And Teamwork In An Interprofessional Clinical Placement. *Applied Nursing Research*, *27*(2), 109–114. Https://Doi.Org/10.1016/J.Apnr.2013.07.003

Hudson, K., & Carrasco, R. (2015). Researching Nursing Students' Engagement: Successful Findings For Nursing. *International Journal Of Nursing & Clinical Practices*, *2*(1). Https://Doi.Org/10.15344/2394-4978/2015/150

Hudson, K., & Carrasco, R. (2017). Nursing Student Engagement: Taking A Closer Look. *Open Journal Of Nursing*, *07*(02), 193–201. Https://Doi.Org/10.4236/Ojn.2017.72017

Hudson, K. F. (2015). Nursing Student Engagement: Student, Classroom, And Clinical Engagement. *International Journal Of Nursing*, *4*(1), 45–52.

Hudson, K., He, Z., & Carrasco, R. (2019). Nursing Student Engagement: Researching The Journey And Its Potential Impact On Transitions To Practice. *Preventive Medicine And Community Health*, *2*(1), 1–6. Https://Doi.Org/10.15761/Pmch.1000121

Kelly, C. (2007). *Student ' S Perceptions Of Effective Clinical Teaching Revisited*. 885–892. Https://Doi.Org/10.1016/J.Nedt.2006.12.005

Koh, L. C. (2002). The Perceptions Of Nursing Students Of Practice-Based Teaching. *Nurse Education In Practice*, *2*(1), 35–43. Https://Doi.Org/10.1054/Nepr.2002.0041

Kuh, G. D. (2010). *Assessing What Really Matters To Student Learning Inside The National Survey Of Student Engagement*. *November 2014*, 37–41. Https://Doi.Org/10.1080/00091380109601795

Lester, D. (2013). A Review Of The Student Engagement Literature. *Focus On Colleges, Universities, And Schools*, *7*(1), 1–8.

Levett-Jones, T., Andersen, P., Reid-Searl, K., Guinea, S., Mcallister, M., Lapkin, S., Palmer, L., & Niddrie, M. (2015). Tag Team Simulation: An Innovative Approach For Promoting Active Engagement Of Participants And Observers During Group Simulations. *Nurse Education In Practice*, *15*(5), 345–352. Https://Doi.Org/10.1016/J.Nepr.2015.03.014

Miller, C. J., & Metz, M. J. (2014). *A Comparison Of Professional-Level Faculty And Student Perceptions Of Active Learning : Its Current Use , Effectiveness , And Barriers*. *Dmd*, 246–252. Https://Doi.Org/10.1152/Advan.00014.2014

Mohi-Ud-Din, A. (2019). Association Between The Use Of Active Learning Strategies And Classroom Engagement Among Nursing Students. *Journal Of Health, Medicine And Nursing*, *January*. Https://Doi.Org/10.7176/Jhmn/62-08

Mukhtar, M., Nursalam, & Kurniawati, N. D. (2016). Perception Of Indonesian Nursing Students Regarding Caring Behavior And Teaching Characteristics Of Their Clinical Nursing Instructors. *Jurnal Ners*, *11*(2), 186–194.

Nia Murniati, S. &Tri G. (2013). *Pembelajaran Biostatistik Dengan Metode Kooperatif Melalui Media Lembar Kerja Mahasiswa (Lkm) Di Program Program Studi Perumahsakitan Program Vokasi Universitas Indonesia*.

Oermann, M. H. (2015). Technology and Teaching Innovations in Nursing Education. *Nurse Educator*, *40*(2), 55–56. https://doi.org/10.1097/NNE.0000000000000139

Pascarella, E. I., Cruce, T., Umbach, P. D., Wolniak, G. C., Kuh, G. D., Carini, R. M., Hayek, J. C., Gonyea, R. M., & Zhao, C. M. (2006). Institutional selectivity and good practices in undergraduate education: How strong is the link? *Journal of Higher Education*, *77*(2), 251–285. https://doi.org/10.1353/jhe.2006.0016

Popkess, A. M. (2010). The Relationship Between Undergraduate, Baccalaureate Nursing Student Engagement And Use Of Active Learning Strategies In The Classroom. *Doctor of Philosophy, University Graduate School*, *January*.

Power, T., Virdun, C., White, H., Hayes, C., Parker, N., Kelly, M., Disler, R., & Cottle, A. (2016). Plastic with personality: Increasing student engagement with manikins. *Nurse Education Today*, *38*, 126–131. https://doi.org/10.1016/j.nedt.2015.12.001

Rahayu, A. S. (2018). Engaging the Students With Styles in Efl Perspectives. *A Journal of Culture English Language Teaching Literature & Linguistics*, *3*(1), 15. https://doi.org/10.22219/celticumm.vol3.no1.15-29

Ryu, S., & Lombardi, D. (2015). Coding Classroom Interactions for Collective and Individual Engagement. *Educational Psychologist*, *50*(1), 70–83. https://doi.org/10.1080/00461520.2014.1001891

Sattar, A. A., Kouar, R., & Gillani, S. A. (2018). Exploring Nursing Students Engagement in Their Learning Environment. *American Journal of Nursing Research*, *6*(1), 18–23. https://doi.org/10.12691/ajnr-6-1-3

Schaufeli, W. B., Martínez, I. M., Pinto, A. M., Salanova, M., & Barker, A. B. (2002). Burnout and engagement in university students a cross-national study. *Journal of Cross-Cultural Psychology*, *33*(5), 464–481. https://doi.org/10.1177/0022022102033005003

Shernoff, D. J., Kelly, S., Tonks, S. M., Anderson, B., Cavanagh, R. F., Sinha, S., & Abdi, B. (2016). Student engagement as a function of environmental complexity in high school classrooms. *Learning and Instruction*, *43*, 52–60. https://doi.org/10.1016/j.learninstruc.2015.12.003

Sundler, A. J., Björk, M., Bisholt, B., Ohlsson, U., Engström, A. K., & Gustafsson, M. (2014). Student nurses' experiences of the clinical learning environment in relation to the organization of supervision: A questionnaire survey. *Nurse Education Today*, *34*(4), 661–666. https://doi.org/10.1016/j.nedt.2013.06.023

Svanum, S., Bigatti, S. M., Svanum, S., & Bigatti, S. M. (2014). *Academic Course Engagement During One Semester Forecasts College Success : Engaged Students Are More Likely to Earn a Degree , Do It Faster , and Do It Better*. *50*(1), 120–132. https://doi.org/10.1353/csd.0.0055

Wang, Z., Bergin, C., & Bergin, A. (2014). *Measuring Engagement in Fourth to Twelfth Grade Classrooms : The School Psychology Quarterly Measuring Engagement in Fourth to Twelfth Grade Classrooms : The Classroom Engagement Inventory*. *April*. https://doi.org/10.1037/spq0000050

Jurnal Keperawatan Global
Vol. 7, No. 2, December 2022
https://doi.org/10.37341/jkg.v0i0.534

Original Research

Description Of Suffering Duration, Self-Care Behavior, And Grade In Hypertension Patients

Rio Gita Rhma Putra[1*], Nina Indriyawati[2]

[1,2] Department of Nursing, Poltekkes, Ministry of Health, Semarang, Indonesia

ABSTRACT

Background: *Hypertension is often called "the silent killer" because it often goes unnoticed. The patient does not know that he has hypertension but then finds himself having complications from hypertension such as heart disease, stroke, kidney disease, blood vessel disease, to nervous disorders. Therefore, it is necessary to measure the level of self-care behavior using a behavior scale to anticipate the self-care behavior that is usually carried out by hypertensive patients.*

Methods: *This was an observational study with suffering duration, self-care behavior, and hypertension grade as independent variables. The number of samples used was 88, and the sampling technique used was random sampling. The instrument used in this study was a questionnaire using the Hypertension Self-Care Profile (HBP-SCP) Behavior Scale questionnaire, which consisted of 20 statements using descriptive analysis.*

Results: *The results of univariate analysis of most of the patients aged 46-55 years (60.2%), female (57%), with a history of the last education level of elementary school (30%), family income per month of 2,000,000.00-4,000,000,00 (54.5%), duration of hypertension with short duration of 1-5 years (69%), self-care behavior in the moderate category (68%), and the majority were in grade 1 (48%).*

Conclusion: *Most respondents with a duration of illness of 1–5 years apply self-care behaviors in the moderate category and are in the Garde 1 hypertension degree category at the Sultan Agung Hospital Semarang Polyclinic in 2022.*

ARTICLE HISTORY
Received: July 29th, 2022
Accepted: December 30th, 2022

KEYWORDS
duration of suffering, grades, hypertension, self-care behavior;

CONTACT
Rio Gita Rahma Putra
riogita0104@gmail.com
Departement of Nursing Poltekkes Kemenkes Semarang. Jln. Tirto Agung, Pedalangan, Banyumanik, Semarang, Central Java, Indonesia.

Cite this as: Rahma, R. G., & Indriawati , N. . (2022). Description Of Suffering Duration, Self-Care Behavior, And Grade In Hypertension Patients. *(JKG) Jurnal Keperawatan Global*. https://doi.org/10.37341/jkg.v0i0.534

INTRODUCTION

The World Health Organization (WHO) states that hypertension is the world's primary cause of death. The current situation shows that hypertension among adults increased from 594 million in 1975 to 1.13 billion in 2015, with the increase being mostly seen in low- and middle-income countries. The increase was mainly due to this population's hypertension risk factors (Manangkot & Suindrayasa, 2020).

Southeast Asia has a hypertension prevalence of 36% of the total population. Meanwhile, 22.8% of those who checked in at the hospital were reported as being from Indonesia, while 77.2% were irregular. Hypertension affected 37.50% of the population in the province of Central Java (Riskesdas, 2018). According to the Central Java Health Office, (2018) 57.10% of Central Java residents have hypertension (Dinkes, 2018). Based on data from the Semarang City Health Office, the number of patients with hypertension at the Semarang City Hospital has increased by 2141 new hypertension cases (Dinkes, 2018).

The increasing prevalence of hypertension is caused by lifestyle, diet, lack of physical activity, exercise, an inappropriate diet, weight control, stress, smoking, alcohol consumption, a lack of knowledge, routine blood pressure control, and patient understanding and management ability, or self-care behavior. Self-care behavior is defined as a person's actual activity to actively participate in efforts to maintain his health status. Hypertensive patients' management or self-care behavior to control blood pressure is still severely lacking. This may occur because the patient ignores or is less aware of the nature of the disease that arises and sinks. When blood pressure has returned to normal, patients tend to think their recovery is permanent (Harmanto et al., 2021).

The duration of illness is one of the factors that influence medication adherence. Erawatyningsih, (2009) states that the longer the patient's complaints, the more disobedient he will be to come for treatment. This is due to the patient's weak health condition, poor nutrition, and the severity of the illness. In a study by Leksono, (2014) it was explained that hypertensive patients must take medication every day, continuously. This routine will bore the patient to the point where they will no longer take their medications on a regular basis, if at all. This will result in the patient's uncontrolled blood pressure and the risk of complications such as stroke, heart failure, kidney failure, and so on.

Based on the data above, it can be concluded that there is a relationship between the duration of hypertension and self-care in patients with hypertension, as well as the relationship between self-care and blood pressure in patients with hypertension. However, there has been no research on the picture that combines the length of illness, self-care behavior, and grade in patients with hypertension. Therefore, in this study, researchers were interested in describing the length of illness, self-care behavior, and grade in patients with hypertension. Therefore, it is necessary to measure the level of self-care behavior using a behavior scale to anticipate the self-care behavior that is usually carried out by hypertensive patients.

MATERIALS AND METHODS

The type of research used is observational with a cross-sectional approach. The research was conducted at the polyclinic of Sultan Agung Hospital, Semarang. The population of hypertension patients undergoing outpatient treatment in August–October 2021 was 650. The sample that will be used in this study is made up of 88 people. The sampling technique is random sampling. The inclusion criteria are as follows: hypertension patients willing to become respondents by signing the informed consent form; hypertension patients with full awareness to fill out questionnaires or answer questions correctly and hypertension patients undergoing outpatient treatment at Sultan Agung Hospital's polyclinic.

The research instrument used in this study included a characteristic questionnaire consisting of age, gender, monthly family income, recent education history, duration of hypertension, and the patient's blood pressure. Another questionnaire used is the hypertension self-care profile (HBP-SCP) questionnaire, a measurement tool for hypertension self-care designed by (Hae-Ra Han et al., 2013). This questionnaire consists of 20 questions, and the answer choices use a Likert scale. Information for hypertension self-care assessments includes: always = 4, often = 3, sometimes = 2, and rarely/never = 1, with the highest score being 80 and the lowest being 20, with a higher score indicating better hypertension self-care by the patient.

This research instrument measured validity using the Pearson product-moment correlation and reliability using the Cronbach alpha technique (Sugiyono, 2010). The hypertension self-care profile (HBP-SCP) questionnaire showed good validity (r = 0.632) with a good category. The reliability results of this questionnaire also show good reliability, which shows the number 0.83, so the questionnaire is stated to be reliable.

Data collection methods include interviews, observations, and questionnaires. This research was conducted after obtaining ethical standards from RSI Sultan Agung Semarang with the ethical worthiness number 22/KEPK-RSISA/II/2022. The flow of this research is that the researcher gives a questionnaire to hypertensive patients undergoing outpatient therapy at the Sultan Agung Hospital Semarang Polyclinic. After being given a questionnaire, the patient is checked for blood pressure using a digital device brought by the researcher. The descriptive analysis presented in the form of frequency, proportion, and ratio, measures of central tendency (mean arithmetic, median, mode), and measures of variation (standard deviation, variance range, and quartiles) was used in this study.

RESULTS

Characteristics of Respondents

Tabel 1. Frequency distribution and percentage of respondents' demographic data when undergoing outpatient treatment at the Polyclinic in 2022 (n = 88)

Demographic Data	Frequency	Percentage (%)
Age		
26-35 years old	-	0,0
36-45 years old	5	5,7
46-55 years old	53	60,2
56-65 years old	29	33,0
>65 years old	1	1,1
Gender		
Man	31	35,2
Woman	57	64,8
Last Education Level		
No School	19	21,1
Elementary School	30	34,1
Junior High School	14	15,9
Senior High School	12	13,6
≥Graduates	13	14,8
Monthly Family Income		
≤$2,000,000	32	36,4
$2,000,000–$4,000,000	48	54,5

Demographic Data	Frequency	Percentage (%)
≥$4,000,000	8	9,1

Respondents in this study were patients undergoing outpatient treatment at the Sultan Agung Hospital Semarang Polyclinic. Demographic data include age, gender, last education level, and monthly family income. The research results showed that most of the rest were between 46-55 years old, as many as 53 people (60.2%) with an average age of 53.1 years and a standard deviation of 5,450. Most of the respondents were female, as many as 57 people (64.8%) were women. Based on the latest level of education, the most are in elementary school education, as many as 30 people (30.1%), and based on family income per month, the most are $2,000,000–$4,000,000, namely 48 people (54.5%).

Tabel 2. Distribution of average, standard deviation, frequency, and percentage of length of illness in 2022 (n=88)

Category of Duration of Hypertension	Frequency	Percentage (%)	Mean	SD
Duration of Hypertension	88	100	4,31	2,130
Short Duration (1-5 years)	69	78,4	0	0
Medium Duration (6-10 years	19	21,6	0	0
Long Duration (>10 years)	0	0	0	0

Based on data obtained from respondents undergoing an outpatient program at the Polyclinic of Sultan Agung Hospital, data were obtained from respondents with a short duration of hypertension (1–5 years), as many as 69 respondents (78.4%), and respondents with a moderate duration, as many as 19 respondents (21.6%). The average length of illness was 4.31 years, with a standard deviation of 2.130.

Table 3. Distribution of average, standard deviation, frequency, and percentage of self-care behavior in 2022 (n=88)

Category Levels of Self-Care Behavior	Frequency	Percentage(%)	Mean	SD
Levels of Self-Care Behavior	88	100	50,36	5,939
Lack of Self-Care Behavior	0	0	0	0
Moderate Self-Care Behavior	68	77,3	0	0
Good Self-Care Behavior	20	22,7	0	0

Based on data obtained from respondents undergoing an outpatient program at the polyclinic of Sultan Agung Hospital, only moderate and good self-care behaviors were observed, with moderate self-care behavior among as many as 68 respondents (77.3%) and respondents with moderate self-care behavior. Care behavior is good for as many as 20 respondents (22.7%). It has an average value of 50.36 and a standard deviation of 5.939. This study consisted of several indicators, including physical activity, a low-sodium diet, a low-fat diet, limiting alcohol consumption, not smoking, self-monitoring blood pressure, taking medication, weight control, stress reduction, and visits to the doctor.

Table 4. The average and standard deviation of the three Hypertension Self Care Profile items have the lowest average among respondents in 2022 (n = 88)

Item	Mean	SD	Description
Doing regular physical activity	2,31	0,876	Sometimes
Information on the sodium section	1,98	0,694	Sometimes
Information about saturated fat	2,11	0,319	Sometimes

Based on the data obtained, it is known that respondents undergoing an outpatient program at the Polyclinic of Sultan Agung Hospital obtained the lowest three points where the average respondent answered "Sometimes," including questions about regular physical activity, routinely reading label information related to sodium and potassium content also saturated fat.

Table 5. The mean, standard deviation, frequency, and percentage of respondents' blood pressure levels in 2022 (n=88)

Category Blood Pressure Level Frequency	Frequency	Percentage (%)	Mean	SD
Systolic Blood Pressure Level	88	100	145,65	13,812
Prehypertension	24	27,3	0	0
Grade 1	48	54,5	0	0
Grade 2	16	18,2	0	0
Grade 3	-	0	0	0
Diastolic Blood Pressure Level	88	100	92,41	8,939
Prehypertension	28	31,8	0	0
Grade 1	36	40,9	0	0
Grade 2	19	21,6	0	0
Grade 3	5	5,7	0	0

The systolic blood pressure of respondents undergoing an outpatient program at Sultan Agung Hospital was 24 (27.3%), and respondents with grade 2 were 16 (18.2%). The mean systolic value was 145.65 mmHg, with a standard deviation of 13.812. From the respondents' diastolic blood pressure, the average diastolic values were: 28 respondents (31.8%), respondents with a grade 1 level of 36 respondents (40.9%), respondents with a grade 2 level of 19 respondents (21.6%), and respondents with a grade 3 level as many as five respondents (5.7). The mean diastolic value was 92.41 mmHg, with a standard deviation of 8.939.

Table 6. The frequency and percentage level of self-care behavior distribution are based on the respondent's length of illness in 2022 (n = 88)

Variable	Levels of Self-Care Behavior					
	Less		Moderate		Good	
	F	%	F	%	F	%
Duration of Hypertension						
1-5 years	0	0	55	79,7	14	20,3
6-10 years	0	0	13	68,4	6	31,6
>10 years	0	0	0	0	0	0

Based on respondents' demographic data, the level of self-care behavior of patients when undergoing outpatient treatment at the Sultan Agung Hospital Semarang

Polyclinic can be seen in table 6 above. Based on the length of time they had suffered from hypertension, respondents who had suffered from hypertension for 1–5 years engaged in moderate self-care behavior as many as 55 people (79.7%), while those who engaged in good self-care behavior were only 14 people (1.3%). Respondents with hypertension for 6-10 years exhibited moderate self-care behavior in as many as 13 people (68.4%), while good self-care behavior was demonstrated in 6 people (31.6%).

Table 7. The frequency and percentage of respondents' hypertension degrees are based on the respondent's length of illness in 2022 (n=88)

Variable	Degree of Hypertension							
	Prehypertension		***Grade 1***		***Grade 2***		***Grade 3***	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Duration of Hypertension								
1-5 years	18	26,1	37	53,6	11	15,9	3	4,4
6-10 years	3	15,7	10	52,6	4	21,1	2	10,6
>10 years	0	0	0	0	0	0	0	0

Based on the demographic data of respondents, the degree of hypertension of patients undergoing outpatient treatment at the polyclinic of Sultan Agung Hospital can be seen in table 7 above. Based on the duration of hypertension, respondents with a duration of 1–5 years have 18 respondents (26.1%) whose hypertension degree is in the prehypertension range. There were 37 respondents (53.6%) with a degree of hypertension in the Grade 1 category, 11 respondents (15.9%) with a degree of hypertension in the Grade 2 category, and 3 respondents (4.4%) with a degree of hypertension in the Grade 3 category. Of respondents with a long history of hypertension for 6–10 years, there are 3 respondents (15.7%) whose degree of hypertension is in the prehypertension range, and 10 respondents (52.6%) with a degree of hypertension in the Grade 1 category, 4 respondents (21.1%) with the degree of hypertension in the Grade 2 category, and 2 respondents (10.6%) with a degree of hypertension in the Grade 3 category.

Table 8. The frequency and percentage of respondents' self-care behavior are based on the respondent's hypertension grade level in 2022 (n=88)

Variable	Degree of Hypertension							
	Prehypertension		***Grade 1***		***Grade 2***		***Grade 3***	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Levels of Self-Care Behavior								
Less Self-Care Behavior	0	0	0	0	0	0	0	0
Moderate Self-Care Behavior	19	27,8	32	47,1	14	20,5	3	1,2
Good Self-Care Behavior	5	25	8	40	5	25	2	10

Based on the demographic data of respondents, the degree of hypertension of patients undergoing outpatient treatment at the polyclinic of Sultan Agung Hospital can be seen in table 8 above. Based on the level of self-care behavior, respondents in the moderate

self-care behavior category included 19 respondents (27.8%) whose hypertension degree is in the prehypertension range, 32 respondents (47.1%) with a hypertension degree in the grade 1 category, 14 respondents (20.5%) with the degree of hypertension in the grade 2 category, and 3 respondents (1.2%) with the degree of hypertension in the grade 3 category. In the category of respondents with good self-care behaviors, there were 5 respondents (25%) whose hypertension degree is within the prehypertension range, 8 respondents (40%) with a degree of hypertension in the grade 1 category, 5 respondents (25%) with a degree of hypertension in the grade 2 category, and 2 respondents (10%) with a degree of hypertension in the grade 3 category.

Table 9. Distribution frequency and percentage of respondents' hypertension degree in 2022 (n=88)

Variable	Degree of Hypertension							
	Prehypertension		***Grade 1***		***Grade 2***		***Grade 3***	
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**
Gender								
Man	11	35,4	14	45,1	4	12,9	2	6,6
Woman	10	17,5	32	56,1	12	21,1	3	5,3

Based on the respondents' demographic data, the patient's degree of hypertension when undergoing outpatient treatment at the Polyclinic of Sultan Agung Hospital can be seen in table 9 above. According to gender, 11 respondents (35.4%) had normal blood pressure, 14 (45.1%) had grade 1 hypertension, 4 (12.9%) had grade 2 hypertension, and 2 (6.6%) had grade 3 hypertension. Respondents of female gender have 10 respondents (17.5%) whose hypertension degree is in the normal range. There were 32 respondents (56.1%) with a degree of hypertension in the Grade 1 category, 12 respondents (21.1%) with a degree of hypertension in the Grade 2 category, and 3 respondents (5.3%) with a degree of hypertension in the Grade 3 category.

DISCUSSION

Age of Hypertension Patients

The results of this study indicate that the average age of the respondents is 53.10 years, so the possibility of a person taking care of themselves increases with age due to the fear that arises due to health vulnerabilities experienced with age. Another study on hypertension self-care conducted by Douglas, (2015) showed that age had a significant relationship with hypertension self-care in a positive direction. The greater one's age, the greater one's self-care for hypertension.

Gender of Hypertension Patients

The results of this study indicate that as many as 64.8% are women, so women have better self-care because women play an essential role or act as managers in the family. Research conducted by Hu et al., (2013) regarding hypertensive patients found that 54% of female respondents had better self-care such as medication adherence, measuring blood pressure, a low-salt diet, physical exercise, not smoking, and alcohol restriction.

Recent Education Level of Hypertensive Patients

This study found that respondents with a history of elementary school education had the highest average score of 34.1%. In a study by Gebremichael et al., (2019) the results show a significant relationship between educational status and a person's self-care behavior. The higher a person's education, with a p-value of 0.001 and a positive relationship direction, the more self-care they practice. Higher education will give a person enough information to do good self-care (Erceg, 2013).

Monthly Family Income

In this study, it is evident that respondents whose monthly family income was $2,000,000–$4,000,000 had the highest average of 54.5%. This shows that someone who has an income has better self-care behavior. A person who has a job will have income in his life. A study conducted by Campble et al., (2014) on the effect of producers on a person's health behavior shows that those with higher incomes tend to comply in terms of health behaviors such as not smoking, blood pressure control, and glucose control. A study with similar results was conducted by Laksonen et al., (2003) which shows that both men and women with lower incomes have unfavorable behaviors such as eating fewer vegetables, lacking weight control, and smoking.

Duration of Hypertension

The results of this study indicate that the average length of suffering from hypertension among respondents is 4.31 years, with a standard deviation of 2.130. The findings of this study are consistent with the findings of Wahyuningsih, (2018) who found that the majority of the 35 respondents (74.3%) had hypertension for 1–5 years. Another study with similar results conducted by Oliveros, (2020) showed that of the 115 respondents, the majority had suffered from hypertension for <5 years, which was 40%. This shows that patients who have experienced hypertension for one to five years tend to be more obedient to taking drugs because of their great curiosity and desire to recover.

Self-Care Behavior of Hypertension Patients

Most of the respondents performed self-care behaviors in the moderate category, with as many as 68 respondents (77.3%) with an average self-care behavior score of 50.36 and a standard deviation of 5.939. The results of the study show that self-care behavior in the moderate category has been supported by respondents who always take medication regularly. However, several factors prevent most respondents from falling into the category of good self-care behavior, including a lack of adherence to a hypertension diet, a lack of regular exercise, and a lack of stress management.

This assessment obtained the same results as the research conducted by Su'ud et al., (2020) on the motivation and self-care of hypertension patients. Out of a total of 84 respondents, 57.4% had moderate self-care. Another study that had similar results was conducted by Gracia, (2020) on hypertensive patients at Our Lady of Lourdes Hospital Philippines, which showed that out of 120 respondents, 51% had moderate self-care behavior.

Hypertension Grade in Hypertensive Patients

The results showed that respondents' hypertension degrees were in the grade 1 category range, with as many as 48 respondents (54.5%) with an average respondent blood pressure of 145.65/92.41 mmHg with a standard deviation of 13.812 for systolic and 13.812 for diastolic. 8,995. This study's results align with research by Sukma, (2019) which found that the average blood pressure of 33 respondents at the Cakranegara Public Health Center showed that most respondents were in the grade 1 category, which included 22 people (66.7%). Kringeland, (2022) conducted another study that had similar results to the Hordaland Health Study, which stated that the majority of respondents from 883 total respondents, namely 58%, were in the stage 1 category.

In this case, the grade of hypertension could increase or be permanent and can be affected by the treatment received by the respondent. Clients are viewed by researchers as bio-psycho-social-cultural-spiritual beings who respond uniquely to health changes or crisis situations. In addition, other factors may affect how patients respond to the stressors they experience. Judging from age, the older a person is, the more experience they have in dealing with stressors. Education also contributes to overcoming stressors; the higher a person's education, the greater his knowledge, so that he has the ability to deal with problems, analyze situations, and ultimately choose the right action in dealing with a problem (Stuart & Suddeen, 2006).

Duration of Sickness with Self-Care Behavior and Duration of Sickness with Grade

Respondents with a hypertension duration of 1–5 years had the highest average, 78.4%. Most had a moderate level of self-care behavior (79.7%), while good self-care behavior was 20.3%. This is in line with Puspita, (2016) research, which shows that respondents who have suffered from hypertension for >5 years are found to be more disobedient (68.1%) in taking hypertension treatment, while respondents who have suffered from hypertension for 5 years are 64.9% obedient in undergoing treatment.

In contrast, research conducted by Motlagh, (2016) in Kermanshah, IR, Iran, on 236 respondents showed that 59.7% had a history of hypertension for at least 5 years, with an average of self-care behavior in the excellent category. This can happen because there is a possibility that patients who have suffered from hypertension for a long time have learned more about managing hypertension. Based on the duration of suffering from hypertension, it is evident that respondents with a hypertension duration of 1–5 years had the highest average, which was 78.4%. Most of the respondents were included in the grade 1 category of hypertension, as many as 37 (53.6%).

This is in line with research conducted by Wahyuningsih et al., (2018) which showed that respondents who suffered from hypertension between 1-5 years were about three times more than those who were more than 5 years old. Respondents in the degree of hypertension 1 group had higher blood pressure levels, though not significantly higher than those in the degree of hypertension 2 groups. In contrast to research conducted by Huanhuan, (2013) in Beijing, China, 318 respondents showed that 59.7% had a history of hypertension for at least 3 years; most of the respondents belonged to hypertension degree 2.

This shows that with age, plaque will increase in the arteries and blood vessels will become congealed and lose elasticity, causing the heart to work harder to pump

blood through the vessels. These changes in blood vessels will increase the workload required by the heart to maintain blood flow in the circulation.

Self-Care Behavior with Hypertension Grade

It is evident that respondents who performed a moderate level of self-care behavior, 79.7%, were at the Grade 1 hypertension level, which was 32 people (47.1%). The findings of this study contradict those of Herawati, (2020) who discovered that the average blood pressure of 45 respondents in Dowangan Hamlet, Gamping Sleman Yogyakarta was higher than the national average of 29 people (64.4%). However, the majority of respondents (44.4%) engaged in self-care behaviors in the less than 20 respondent category.

Motlagh, (2016) conducted research in Kermanshah, IR, Iran, with 236 respondents, which also showed that most of the respondents were in the grade 1 category, which was 59.4%. However, most of the respondents displayed self-care behaviors in the excellent category. This suggests that the patient's treatment may not sufficiently maintain blood pressure within the normal range.

Grade by Gender of Hypertension Patients

The results showed that most respondents were female, namely 64.8%, most of whom were at the grade 1 hypertension level, which was 32 people (56.1%). This is in line with Herawati, (2020) research, which shows the results of the average blood pressure of 45 respondents in the Dowangan Hamlet, Gamping Sleman Yogyakarta, that the majority of respondents are in the grade 1 category, which is 29 people (64.4%), and most of the respondents are female. As many as 28 people (62.2%) in contrast, research conducted by Bethany, (2016) from the National Longitudinal Study of Adolescent to Adult Health stated that of the 14,497 respondents, the majority were male.

As many as 63% had a history of hypertension. We hypothesized that the observed gender differences in hypertension might be partly due to differences in behavioral risk factors, such as BMI, smoking, and physical activity. However, considering these factors, there is almost no effect on the gender disparity in hypertension. This suggests that gender differences among young adults may be partly due to biological sex differences.

However, further research is needed to investigate other behavioral factors that might explain these early differences. In addition, health insurance and utilization of health services do not affect the risk of hypertension or gender disparity as measured by hypertension.

CONCLUSION

The characteristics of the research respondents are that they are hypertensive patients undergoing outpatient therapy at the polyclinic of RSI Sultan Agung Semarang, dominated by female patients compared to male patients, with an average age range of 53.10 years. Most of the respondents' recent educational history had only been up to elementary school. As for the monthly family income of the respondents, most of them have an income of $2,000,000–$4,000,000.00.

Respondents with a majority of 1–5 years of illness applied self-care behaviors in the moderate category and were in the Grade 1 hypertension degree category. Respondents with the majority of hypertension are in grade 1 and apply self-care behaviors in the moderate category. Respondents with the most hypertension patients

being female were in the category of Grade 1 hypertension with an average blood pressure of 145.65/92.41 mmHg.

The results of this study are also likely to be used as a basis and reference in providing education to hypertensive patients. Nurses can involve patients and families in educating and monitoring patient self-care at home, allowing patients and families to take an active role in self-care monitoring at home.

REFERENCES

Afelya, T. I. (2014). *Penerapan Teori Self care Orem Pada Asuhan Keperawatan Pasien Diabetes Melitus Tipe 2 Dengan Multiple Ulkus, CKD, San Hipoglikemia Berulang Di RSUPN Cipto Mangunkusumo.* Universitas Indonesia.

Anita. (2015). *Hubungan Lama Menderita Hipertensi Dengan Tingkt Kecemasan Pada Lansia Diposyandu Wilayah Kerja Puskesmas Pasir Panjang Kota Kupang.*

Artiyaningrum. (2015). *Faktor-faktor yang Berhubungan dengan Kejadian Hipertensi Tidak Terkendali Pada Penderita yang Melakukan Pemeriksaan Rutin di Puskesmas Kedungmundu Kota Semarang*. Naskah Publikasi Universitas Negeri Semarang.

Artiyaningrum, B., & Azam, M. (2016). *Faktor-faktor Yang Berhubungan Dengan Kejadian Hipertensi Tidak Terkendali Pada Penderita Yang Melakukan Pemeriksaan Rutin. Public Health Perspective Journal*, 12- 20.

Bethany. (2016). *Gender differences in hypertension among young adults. HHS Public Access*, *61*(1), 1–17. https://doi.org/10.1080/19485565.2014.929488.Gender

Bulu, Y. H., K, R. N. K., & Wijaya, I. (2021). *Perilaku Lansia Dalam Upaya Penanggulangan Hipertesi di Wilayah Kerja Puskesmas Pertiwi Kota Makasar. Promotiv Preventif*, *4*(1), 39–50.

Dewi Nur Sukma Purqoti, M. U. N. (2019). *Identifikasi Derajat Hipertensi Pada Pasien Hipertensi di Puskesmas Kota Mataram. Keperawatan Terpadu*, *1*(1), 31–38.

Gracia. (2020). *The Correlation Between Self-Care Behavior and The Self-Efficacy of Hypertensive Adults. Indonesian Nursing Journal of Education and Clinic (Injec)*, *5*(1), 44. https://doi.org/10.24990/injec.v5i1.273

Gusty &, & Merdawati. (2020). *Perilaku Perawatan Diri Dan Faktor-Faktor Yang Berhubungan Dengan Pasien Hipertensi Di Padang Self-Care Behaviour Practices and Associated Factors Among Adult Hypertensive Patients in Padang. Jurnal Kepe*, *11*(1), 51–58.

Harmanto, Supriyatna, N., & Mulyanto, S. (2021). *Pengaruh Cognitive Behavior Therapy terhadap Self Care Behavior Lansia dengan Hipertensi di Wilayah Kerja Puskesmas Buton Selatan*. *12*(April), 67–72.

Hidayat, A. (2017). *Metodologi Penelitian Keperawatan dan Kesehatan*. Jakarta

Selatan: Salemba Medika.

Huanhuan. (2013). *Prevalence rates of self-care behaviors and related factors in a rural hypertension population: A questionnaire survey. International Journal of Hypertension*, *2013*. https://doi.org/10.1155/2013/526949

Kringeland. (2022). *Stage 1 hypertension, sex, and acute coronary syndromes during midlife: The Hordaland Health Study. European Journal of Preventive Cardiology*, *29*(1), 147–154. https://doi.org/10.1093/eurjpc/zwab068

Manangkot, M. V., & Suindrayasa, I. M. (2020). Gambaran Self Care Behaviour Pada Pasien Hipertensi di Puskesmas Wilayah Kota Denpasar. *Coping: Community of Publishing in Nursing*, *8*(4), 410. https://doi.org/10.24843/coping.2020.v08.i04.p09

Motlagh. (2016). *Self-Care Behaviors and Related Factors in Hypertensive Patients*. *18*(6). https://doi.org/10.5812/ircmj.35805.Research

Nina, N., Calisane, P., & Lindayani, L. (2021). *Pengaruh Intervensi Self-Management terhadap Self- Care dan Tekanan Darah pada Pasien Hipertensi*. *Risenologi*, *September*, 24–30.

Nursalam. (2016). *Metodologi Penelitian Ilmu Keperawatan Pendekatan Praktis Edisi.4*. Jakarta : Salemba Medika.

Oliveros, E., Patel, H., Kyung, S., Fugar, S., Goldberg, A., Madan, N., & Williams, K. A. (2020). Hypertension in older adults: Assessment, management, and challenges. *Clinical Cardiology*, *43*(2), 99–107. https://doi.org/10.1002/clc.23303

Rofifah, D. (2020). No Title No Title No Title. *Paper Knowledge . Toward a Media History of Documents*, *2016*, 12–26.

Romadhon, W. A., Aridamayanti, B. G., Syanif, A. H., & Sari, G. M. (2020). *Faktor-Faktor yang Mempengaruhi Self-care Behavior pada Klien dengan Hipertensi di Komunitas. Jurnal Penelitian Kesehatan "SUARA FORIKES" (Journal of Health Research "Forikes Voice")*, *11*(April), 37. https://doi.org/10.33846/sf11nk206

Salami. (2021). *Perilaku Self Care Management Penderita Hipertensi: Studi Kualitatif. Jurnal Keperawatan 'Aisyiyah*, *8*(1), 87–99. https://doi.org/10.33867/jka.v8i1.261

Su'ud, akhmad N. (2020). *Hubungan Motivasi dengan Perawatan Diri di Poli Klinik Rumah Sakit Tingkat III Baladhika Husada Jember. Skripsi*.

Su'ud, A. N., Murtaqib, M., & Kushariyadi, K. (2020). *Hubungan Motivasi dengan Perawatan Diri Pasien Hipertensi. Jkep*, *5*(2), 137–149. https://doi.org/10.32668/jkep.v5i2.345

Sugiono. (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung:

Alfabeta, CV.

Suprayitno, E., & Huzaimah, N. (2020). *Pendampingan Lansia Dalam Pencegahan Komplikasi Hipertensi. SELAPARANG Jurnal Pengabdian Masyarakat Berkemajuan*, *4*(1), 518. https://doi.org/10.31764/jpmb.v4i1.3001

Wahyuningsih, S., Amalia, M., & Bustamam, N. (2018). *Pengaruh Derajat Hipertensi, Lama Hipertensi Dan Hiperlipidemia Dengan Gangguan Jantung Dan Ginjal Pasien Hipertensi Di Posbindu Cisalak Pasar*. *Jurnal KESMAS Indonesia*, *10*(1), 54–67.

Triyanto, (2014). *Pelayanan Keperawatan bagi Penderita Hipertensi Secara Terpadu*. Yogyakarta: Graha Ilmu

WHO. (2013). *Self-care for Health: A Handbook for Community Health Workers & Volunteers*. https://apps.who.int/iris/handle/10665/205887 [Diakses tanggal 31 Oktober 2020]

Wicaksono, Swandito. (2015). *"Lansia Dengan Peningkatan Tekanan Darah (Hipertensi) Di Dusun 1 Desa Kembangseri Kecamatan Talang Empat Bengkulu Tengah Tahun 2015*." Fakultas Kedokteran dan Ilmu Kesehatan Universitas Bengkulu: 1–6.

Zhou, H., K. Wang, X. Zhou, S. Ruan, S. Gan, S. Ceng, Y. Lu. (2018). *Prevalence and gender-specific influence factor of hypertension among Chinese adults. International Journal Of Environment Research and Publick Health. 15:382*

Jurnal Keperawatan Global
Vol. 7, No. 2, December 2022
https://doi.org/10.37341/jkg.v0i0.664

Original Research

Improving The Quality Of Maternal Health Using The Assistance Method One Cadre One Mother

Anik Kurniawati[1*], Rohmi Handayani[2]

[1,2] Department of Midwifery, Poltekkes Kemenkes Surakarta, Indonesia

ABSTRACT

Background: *The efforts to accelerate the success of reducing the Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) in addition to access and service factors, cross-sector participation, especially those related to maternal health efforts, is to increase cross-sectorquasi-experimental outlined in an activity assisting high-risk pregnant women by health cadres.*

Methods: *This is a quantitative study using a quasi-experimental research design with a post-test and control group. The sample consisted of 20 third-trimester pregnant women in the treatment group who received cadre assistance until the postpartum period and 20 respondents in the control group, namely pregnant women who were not accompanied by cadres. The sample was selected using random sampling. Bivariate data analysis for each sub-variable used the independent T-test, Fisher extract, and chi-square.*

Results: *Show that assisting health personnel has an effect on pregnant women's readiness for childbirth (p-value = 0.017) with a CI of (-7.07768--.72232). There is a link between assisting health care providers and breastfeeding practice in pregnant women (p-value = 0.002). There is no influence between assisting health cadres with postpartum health (p-value=0.487).*

Conclusion: *With health professionals and their readiness for childbirth and breastfeeding practice. There is no influence between mentoring health cadres and postpartum health.*

ARTICLE HISTORY
Received: December 30th, 2022
Accepted: December 31th, 2022

KEYWORDS
cadre, health, maternal, mother;

CONTACT
Anik Kurniawati
✉
anikpoltek@gmail.com
Department of Midwifery, Poltekkes Kemenkes Surakarta. Jl. Kesatrian No.2 Danguran, Kec. Klaten Sel., Klaten Regency, Central Java, Indonesia 57425.

Cite this as: Kurniawati, A., & Handayani, R. (2022). Improving The Quality Of Maternal Health Using The Assistance Method One Cadre One Mother. *(JKG) Jurnal Keperawatan Global*. https://doi.org/10.37341/jkg.v0i0.664

INTRODUCTION

The current situation is that the maternal mortality rate remains high: 77% of maternal deaths occur in hospitals, 15% occur at home, 4.1% occur on the way to healthcare facilities, 2.5% occur in other healthcare facilities, and 0.8% occur elsewhere. Efforts to accelerate the success of reducing the Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) apart from access and service factors, have been carried out by midwives and integrated ANC services, but have not significantly reduced MMR. Cross-sectoral participation is required, particularly for those related to maternal health efforts, as outlined in the activities of health cadres assisting high-risk

pregnant women. Cadres are people who carry out health missions and are closest to the community (Irna Windu, 2019).

To improve the health of pregnant women until the postpartum period, collaboration with cadres is needed in the form of mentoring and providing health education. Health conditions during pregnancy will have an impact on health during the puerperium, in accordance with Dagar's research that the level of anxiety during pregnancy has a negative effect on mother-infant bonding during the puerperium. As prenatal attachment rates increase, postpartum attachment rates also increase.

Therefore, assistance is needed during pregnancy to improve the health of pregnant women (Daglar & Nur, 2018). Research on the role of one cadre for one mother has been conducted by Sunaryo et al., (2022) in Banjarnegara District, Central Java Province, but this study aims to assess the performance of cadres in assisting pregnant women (Sunaryo et al., 2022). The general aim of the study is to analyze the effect of the assistance Method of One Cadre One Mother on the quality of the mother's health in the sub-variables of readiness for childbirth, postpartum health, and breastfeeding practices in the working area of the Puskesmas Klaten Selatan.

MATERIAL AND METHOD

This study is quantitative research using a quasi-experimental research design with a post-test and control group. The design of this study did not include a pretest. The treatment group was measured after receiving treatment and compared to the control group (Trisliatanto, 2020). This research was conducted at the South Klaten Public Health Center, Klaten Regency, Central Java Province, from April to November 2022.

The sample in this study was pregnant women in their third trimester, with a total of 20 respondents in the treatment group, namely pregnant women accompanied by cadres from the beginning of their third trimester of pregnancy until the postpartum period. Each cadre visits three times during pregnancy and three times during the postpartum period. During the visit, the cadres will provide health education to pregnant women using the module, and the cadres will fill out the mentoring monitoring book and 20 respondents in the control group, namely pregnant women who only examined health workers without assistance from cadres.

The sample was selected using random sampling. The independent variable is cadre assistance, and the dependent variable is maternal health, including readiness for childbirth, postpartum health, and breastfeeding practice. Data analysis used the independent T-test, Fisher extract, and chi-square. This research has received ethical clearance from the health research ethics committee of Dr. Moewardi General Hospital with number 1.302/X/HREC/2022.

RESULTS

Readiness for Childbirth

Table 1. The mean score of readiness for childbirth in accompanied and unaccompanied groups by health cadres

Readiness	N	Min	Max	Mean±SD
Accompanied	20	81	100	92,25±5,37
Unaccompanied	20	78	96	88,35±4,51

The mean score of readiness for childbirth in the group accompanied by a health

cadre was 92.25 5.37, and the group with pregnant women who were not accompanied by a health cadre was 88.35 ± 4.51. When viewed from the perspective of the mean score for delivery readiness, the group of pregnant women who were accompanied by a health cadre had a higher average than the group of pregnant women who were not accompanied by a health cadre. It can be concluded that pregnant women who are accompanied by health cadres are more prepared for childbirth than pregnant women who are not accompanied by health education.

Pospartum Health

Table 2. Postpartum health of group who accompanied and Unacompanied health cader

Postpartum Health	Good		Not good		Total	
	f	%	f	%	f	%
Accompanied	20	100	0	0	20	100
Unaccompanied	19	9	1	5	20	100

Based on Table 2. it can be seen that the group of pregnant women accompanied by health cadres 100% (20) of respondents had good postpartum health and in the group of pregnant women who were not accompanied by health cadres only 1 respondent (5%) had poor health during the postpartum period.

Breastfeeding Practice

Table 3. Breastfeeding practice of group who accompanied and Unacompanied health cader

Breastfeeding practice	Good		Not good		Total	
	f	%	f	%	f	%
Accompanied	18	90	2	10	20	100
Unaccompanied	9	45	11	55	20	100

Based on table 3. it can be seen that in the group of pregnant women who were accompanied by a health cadre, 18 respondents (90%) had good breastfeeding practice and in the group of pregnant women who were not accompanied by a health cadre, there were 11 respondents (55%) who had poor breastfeeding practices.

The Effect of Mentoring Health Cadres on Pregnant Women with Readiness For Childbirth

Below is presented a table of bivariate analysis results to determine the effect of assisting health cadres on pregnant women with childbirth readiness.

Table 4. Independent t-test results differences in childbirth readiness of pregnant women who are accompanied and not accompanied by health cadres

Group	N	Mean	Min-max	SD	*P Value IK 95%*
Accompanied	20	92,25	81-100	5,37	0,017
Unaccompanied	20	88,35	78-96	4,51	(-7.07768--.72232)

Based on Table 4, a parametric test, the independent T-Test, was used to determine differences in the readiness of pregnant women to face childbirth between accompanied and unaccompanied healthcare groups. The independent T-test was used because, based on the normality test data, the distribution of readiness for childbirth scores from both the accompanied and unaccompanied groups had a normal distribution. The results of

the independent T-test obtained a p-value of 0.0178. Since the value of $p < 0.05$, it can be concluded that there is a significant difference between the scores of readiness for childbirth from the accompanied and unaccompanied groups.

The differences in postpartum health for mothers who are accompanied and not accompanied by health cadres

The table below contains the results of a bivariate analysis to determine the differences in postpartum health between women accompanied by and unaccompanied by healthcare providers.

Table 5. The differences in postpartum health for mothers who are accompanied and not accompanied by health cadres

Group	N	Postpartum Health		*P value*
		Good	Not good	
Accompanied	20	20	0	0,487
Unaccompanied	20	19	1	

P value = Fisher's Exact Test

Based on table 5 above, bivariate analysis was used to find differences in postpartum health for mothers from accompanied and unaccompanied groups by health cadres using the Fisher Exact test. The results of Fisher's exact test obtained a *p-value* of 0.487. Because the *p-value is* > 0.05, it can be concluded that there is no significant relationship between assisting health professionals during childbirth with postpartum health.

The differences in breastfeeding practices for mothers who are accompanied and not accompanied by health cadres

Below is presented a table of bivariate analysis results to find out differences in breastfeeding practices for mothers who are accompanied and not accompanied by health cadres

Table 6. Relationship between health cadre mentoring and breastfeeding practice for mothers

Group	N	Breastfeeding Practice		*P value*
		Good	Not Good	
Accompanied	20	18	2	0,002
Unaccompanied	20	9	11	

p-value= Chi Square

Based on table 5.4 above, bivariate analysis was used to determine differences in breastfeeding practices among mothers from groups accompanied and unaccompanied by health cadres using the Chi-Square test. The chi-square test results obtained show a P value of 0.002. Because of the value of $P < 0.05$, it can be concluded that there is a significant relationship between assisting health cadres during childbirth with breastfeeding practice.

DISCUSSION

The mean score of readiness for childbirth in the group accompanied by health care was 92.25 5.37, and that in the group with pregnant women who were not accompanied by health care was 88.35 ± 4.51. When viewed from the perspective of the mean score for childbirth readiness, the group of pregnant women who were accompanied by a health cadre had a higher average than the group of pregnant women who were not accompanied by a health cadre. It can be concluded that pregnant women who are accompanied by health professionals are better prepared for childbirth than pregnant women who are not (Gultom, 2020).

The role of assistant cadres during pregnancy is to provide health education on basic information about pregnancy, how to take iron supplement tablets, and the danger signs of pregnancy in accordance with the guideline module for cadre mentoring (Kemenkes, 2020a). Health education during pregnancy can improve delivery readiness because regular health education can increase the knowledge of pregnant women so that pregnant women will be more prepared in facing childbirth (Handayani & Yulaikah, 2020). The government has established a birth planning and complication prevention (P4K) program. The implementation of the program involves midwives, cadres, and community participation (Diki Retno Yuliyani, 2021).

Childbirth readiness includes preparing a birth plan and a plan if complications occur in the mother's delivery. Preparing a birth plan is a plan made by mothers, fathers, and health service workers to identify helpers and places to give birth, as well as plan savings to prepare for delivery costs (Kemenkes, 2020c). Then the family also needs to prepare a plan if there are complications in the delivery of the mother, such as identifying referral points and transportation to reach the place, preparing blood donors, making financial preparations, and identifying the first decision maker and a second decision maker if the first decision maker is not in place (Kementerian kesehatan, 2010). The cadres are involved in childbirth readiness activities, especially the P4K program, because it is in line with the cadre's role, namely providing light counseling according to problems in the community (Nancy olii, 2022).

Readiness is a state in which both an individual and a body mentally and physically prepare themselves to achieve a goal. Readiness includes physical, mental, and emotional readiness. Being prepared for a birth plan reduces confusion and chaos at the time of delivery and increases the likelihood that the mother will receive appropriate and timely care. There are five important components that are asked of respondents in the birth plan, such as the birth plan, ideally, every family should have the opportunity to make a birth plan.

These things must be explored and decided upon in making the birth plan: a place of delivery, choosing a trained health worker, how to contact the health worker, how to transport to the place of delivery, who will accompany the delivery, how much money is needed and how to collect the fee, and who will look after the family if the mother is not around. The results of this study are in line with the results of a study conducted by Campillo et al., (2017), which found that psychological assistance and support can improve the psychological health of pregnant women after miscarriage. The psychological health condition of pregnant women determines the mother's readiness for childbirth. Improving the quality of life of pregnant women requires better identification of their difficulties and guidance that offers assistance (Lagadec et al., 2018).

Health conditions during pregnancy will have an impact on health during the puerperium, in accordance with Daglar's research that the level of anxiety during pregnancy has a negative effect on mother-infant bonding during the puerperium. As prenatal attachment rates increase, postpartum attachment rates also increase (Daglar & Nur, 2018). Therefore, assistance is needed during pregnancy to improve the health of pregnant women.

In this study, cadres provided assistance during the pregnancy period three times by providing health education to pregnant women. In accordance with the results of other studies showing the impact of midwifery education on perceptions of labor pain and mental health during the postpartum period, birth mothers who receive health education experience pain. Lower labor and psychological disorders within 6 weeks of delivery (Perkovic et al., 2021).

Based on the above data from the research results, it was found that in the group of pregnant women who were accompanied by a health care provider, 100% (20) of respondents had good postpartum health, and in the group of pregnant women who were not accompanied by a health care provider, only 1 respondent (5%) had poor health during the postpartum. Postpartum health in this study was observing the health condition of the postpartum period, which was observed by cadres during the postpartum period with 3 visits. In this study, postpartum home visits were carried out three times by cadres, in line with government regulations that require a minimum of three postpartum visits outside of visits 2–6 hours postpartum (Juneris Aritonang, 2021). The types of postpartum conditions observed were signs of danger for postpartum mothers.

On the first visit, what was observed was profuse bleeding, the presence or absence of fever for more than two days, smelly discharge from the birth canal, swelling of the face and hands, legs, headaches, and convulsions. The observation of the postpartum condition at the second visit was the same as at the first visit, plus the presence or absence of swollen breasts due to milk retention and the mother's looking sad, gloomy, and crying for no reason. This second visit was made in the second week of the postpartum period, when breast swelling is common due to milk damming, and symptoms of postpartum blues are frequently found.

In addition to physical conditions, postpartum women must pay attention to psychological and psychological conditions. Postpartum mothers need support and assistance, especially those who give birth for the first time (Rahayuningsinh, 2021). These results are in accordance with research conducted by Bedaso et al., (2021) in a study entitled "The relationship between social support and mental health problems during pregnancy" (Bedaso et al., 2021).

Likewise, the results of a study conducted by Campillo et al., (2017) show that psychological assistance and support can improve the psychological well-being of pregnant women after miscarriage (San Lazaro Campillo et al., 2017). The results of the study are in line with research conducted in Palembang, which found that support does not directly influence the consumption of vitamin A in postpartum mothers, but knowledge does affect vitamin A consumption in postpartum mothers (Rini Camelia, 2019). Social support has been shown to be an important variable in buffering the effects of postnatal depression. A review of the research on the relationship between social support and postnatal depression revealed many measures of both social support and postnatal depression (Heh, 2003).

The Fisher exact test yielded a p-value of 0.487 based on the findings of a statistical analysis using the Fisher exact test to determine differences in the postpartum health of mothers in groups accompanied and unaccompanied by health cadres. Since the p-value is > 0.05, it can be concluded that there is no significant relationship between assisting health cadres during childbirth with postpartum health. This is because all mothers have a Mother and Child Health (MCH) book, and the contents of the MCH book are complete regarding postpartum health care. In the maternal and child health book, it is clearly written about postpartum care so that during the postpartum period, they can learn independently (Kemenkes, 2020b).

According to the study's findings, 18 respondents (90%) in the group of pregnant women accompanied by health cadres had good breastfeeding behavior or practices, whereas 11 respondents (55%) in the group of pregnant women not accompanied by health cadres did not have good breastfeeding practices. The aspects observed in breastfeeding practices include exclusive breastfeeding, whether or not they have been given food or drink other than breast milk, breastfeeding problems that arise, how to breastfeed properly, and expressing and storing breast milk when the mother is working. In accordance with the government program for feeding infants and children, infants must be given IMD, exclusive breastfeeding for 6 months, complementary feeding of breast milk starting at 6 months, and continuing breastfeeding until 2 years (Rahayu Widaryanti, 2019). Breast milk is the best food for babies because it contains all the nutrients they need, so it helps the baby's growth be healthier (Linda, 2019).

Based on the results of the bivariate analysis to find out differences in breastfeeding practices in mothers from groups accompanied and not accompanied by health cadres using the Chi-Square test. Chi-Square test results obtained a p-value of 0.002. Since the value of $p < 0.05$, it can be concluded that there is a significant relationship between assisting health cadres during childbirth and breastfeeding practices. The practice of breastfeeding for mothers who are accompanied by health cadres is better than the practice of breastfeeding for mothers who are not accompanied by health cadres. This research is in line with a study entitled "Factors that Influence Breastfeeding Behavior".

The results of this study state that there is support from health workers influencing breastfeeding behavior, cadres are part of a team of health workers who can provide support and health education to pregnant women (Zikrul Aqidah, 2019). Postpartum mothers need emotional and technical support at the beginning of breastfeeding to increase their self-confidence. Support from cadres can be provided by making home visits twice a week. This theory is in accordance with the results of research, which show that assisting cadres during the postpartum period increases good breastfeeding practices (Hanifah, 2022).

Cadre assistance to postpartum mothers was carried out three times and provide health education about exclusive breastfeeding, how to breastfeed properly, and always remind them not to give food or drink other than breast milk until the baby is 6 months old. In line with research conducted by Merchant, (2021) with the title "Association between Postpartum Depression Level, Social Support Level, and Breastfeeding Attitude and Self-Efficacy in Early Postpartum Women," the results obtained show that along with increasing social support, breastfeeding behavior will change to be more positive (Mercan & Selcuk, 2021). The role of cadres in mentoring is to provide health education to postpartum mothers, in line with research conducted by Admasu in Ethiopia that shows breastfeeding education improves early initiation of breastfeeding

and the practice of exclusive breastfeeding (Admasu et al., 2022). Besides that, assistance can improve good social relations between mothers and cadres so that breastfeeding practices become better (Chabeda et al., 2021).

Breastfeeding mothers' trust in cadre assistance is partly because cadres are people who are experienced in breastfeeding, so peer support like this can increase breastfeeding mothers' confidence in breastfeeding (Chang et al., 2022). Cadre assistance is an external factor that can make mothers feel more confident in breastfeeding because cadres are people who are experienced in breastfeeding, so peer support like this can increase breastfeeding mothers' confidence in breastfeeding (Chang et al., 2022). Cadre assistance is an external factor that can make mothers calmer so that breast milk comes out more smoothly and breastfeeding practices become better (Chatterjee, Nimrat Walker, et al., 2017).

CONCLUSION

There is a link between working with pregnant women and their readiness for childbirth and breastfeeding practice. There is no influence between mentoring health cadres and postpartum health. There are suggestions for health workers to maximize the role of cadres in assisting pregnant women, as well as for additional researchers to conduct research on the effectiveness of using media to assist cadres.

REFERENCES

Admasu, J., Egata, G., Bassore, D. G., & Feleke, F. W. (2022). Effect Of Maternal Nutrition Education On Early Initiation And Exclusive Breast-Feeding Practices In South Ethiopia: A Cluster Randomised Control Trial. *Journal Of Nutritional Science*, *11*, 1–13. Https://Doi.Org/10.1017/Jns.2022.36

Bedaso, A., Adams, J., Peng, W., & Sibbritt, D. (2021). The Relationship Between Social Support And Mental Health Problems During Pregnancy: A Systematic Review And Meta-Analysis. *Reproductive Health*, *18*(1), 1–23. Https://Doi.Org/10.1186/S12978-021-01209-5

Chabeda, S., Oluoch, D., Mwangome, M., & Jones, C. (2021). Infant Malnutrition Treatment In Kenya: Health Worker And Breastfeeding Peer Supporter Experiences. *Maternal And Child Nutrition*, *17*(3), 1–9. Https://Doi.Org/10.1111/Mcn.13148

Chang, Y. S., Beake, S., Kam, J., Lok, K. Y. W., & Bick, D. (2022). Views And Experiences Of Women, Peer Supporters And Healthcare Professionals On Breastfeeding Peer Support: A Systematic Review Of Qualitative Studies. *Midwifery*, *108*, 103299. Https://Doi.Org/10.1016/J.Midw.2022.103299

Chatterjee, Nimrat Walker, G., Lucia MS, H. K. And T. J. D. C., & Et Al Hyochol Ahn 2017. (2017). 乳鼠心肌提取 HHS Public Access. *Physiology & Behavior*, *176*(10), 139–148. Https://Doi.Org/10.1016/J.Psyneuen.2019.104581.Oxytocin

Daglar, G., & Nur, N. (2018). Level Of Mother-Baby Bonding And Influencing Factors During Pregnancy And Postpartum Period. *Psychiatria Danubina*, *30*(4), 433–440. Https://Doi.Org/10.24869/Psyd.2018.433

Diki Retno Yuliyani. (2021). *Asuhan Kehamilan*. Yayasan Kita Menulis.

Gultom, L. (2020). *Asuhan Kebidanan Kehamilan*. Zifatama Jawara.

Handayani, R., & Yulaikah, S. (2020). Effectiveness Of Booklet And Video As A Prenatal Health Education Media For Readiness And Decrease In Childbirth Anxiety. *Journal Of Midwifery*, *4*(2), 39. Https://Doi.Org/10.25077/Jom.4.2.39-49.2019

Hanifah, A. N. (2022). *Modul Pelatihan Pemberdayaan Kelompok Pendukung ASI Dan Pendampingan Menyusui*. Penerbit Media Sains Indonesia.

Heh, S. S. (2003). Relationship Between Social Support And Postnatal Depression. *Kaohsiung Journal Of Medical Sciences*, *19*(10), 491–495. Https://Doi.Org/10.1016/S1607-551x(09)70496-6

Irna Windu. (2019). *Di Rakesnas 2019, Dirjen Kesmas Paparkan Strategi Penurunan AKI Dan Neonatal*. 15 Februari 2019. Https://Kesmas.Kemkes.Go.Id/Konten/133/0/021517-Di-Rakesnas-2019_-Dirjen-Kesmas-Paparkan-Strategi-Penurunan-Aki-Dan-Neonatal

Juneris Aritonang, Y. Turisna Octavia Simanjuntak. (2021). *Asuhan Kebidanan Pada Masa Nifas* (Depppublish (Ed.)).

Kemenkes. (2020a). *Buku Bacaan Kader Posyandu Kelas Ibu Hamil*. Kemenkes RI.

Kemenkes. (2020b). *Buku Kesehatan Ibu Dan Anak*. Kemenkes.

Kemenkes. (2020c). *Buku Kesehatan Ibu Dan Anak*. Kemenkes.

Kementerian Kesehatan. (2010). *Buku Pegangan Kaderpendamping Keluarga Menuju Keluarga Sadar Gizi (Kadarzi)*. Kementerian Kesehatan RI.

Lagadec, N., Steinecker, M., Kapassi, A., Magnier, A. M., Chastang, J., Robert, S., Gaouaou, N., & Ibanez, G. (2018). Factors Influencing The Quality Of Life Of Pregnant Women: A Systematic Review 11 Medical And Health Sciences 1117 Public Health And Health Services. *BMC Pregnancy And Childbirth*, *18*(1), 1–14. Https://Doi.Org/10.1186/S12884-018-2087-4

Linda, E. (2019). *Asi Eksklusif*. Yayasan Jamiul Fawaid.

Mercan, Y., & Selcuk, K. T. (2021). Association Between Postpartum Depression Level, Social Support Level And Breastfeeding Attitude And Breastfeeding Self-Efficacy In Early Postpartum Women. *Plos ONE*, *16*(4 April 2021), 1–12. Https://Doi.Org/10.1371/Journal.Pone.0249538

Nancy Olii. (2022). Permberdayaan Kader Kesehatan Dalam Pelaksanaan Program Perencanaan Persalinan Dan Pencegahan Komplikasi. *Jurnal Masyarakat*

Mandiri, *6*(1).

Perkovic, R., Devic, K., Hrkac, A., Saravanja, N., Tomic, V., Kristo, B., Dukic, H., & Vasilj, V. (2021). Relationship Between Education Oe Pregnant Women And Listening To Classical Music With The Experience Oe Pain In Childbirth And The Occurrence Oe Psychological Symptoms In Puerperium. *Psychiatria Danubina*, *33*(2), 260–270.

Rahayu Widaryanti. (2019). *Pemberian Makan Bayi Dan Anak*. Deeppublish.

Rahayuningsinh, D. F. B. (2021). *Peningkatan Kualitas Hidup Ibu Nifas*. Nas Media Indonesia.

Rini Camelia. (2019). Faktor-Faktor Yang Mempengaruhi Ibu Nifas Dalam Mengkonsumsi Vitamin A. *Jurnal 'Aisyiyah Medika*, *3*.

San Lazaro Campillo, I., Meaney, S., Mcnamara, K., & O'Donoghue, K. (2017). Psychological And Support Interventions To Reduce Levels Of Stress, Anxiety Or Depression On Women's Subsequent Pregnancy With A History Of Miscarriage: An Empty Systematic Review. *BMJ Open*, *7*(9), 1–8. Https://Doi.Org/10.1136/Bmjopen-2017-017802

Sunaryo, S., Isnani, T., Lestari, E., Apriliana, S., & Sari, I. Z. R. (2022). Implementation Of Assistance For One Pregnant Woman One Cadre (OPOC) In Banjarnegara District, Central Java Province, Indonesia. *African Journal Of Reproductive Health*, *26*(7), 83–89. Https://Doi.Org/10.29063/Ajrh2022/V26i7.9

Trisliatanto. (2020). *Metodologi Penelitian*. Penerbit Andi.

Zikrul Aqidah. (2019). *Faktor – Faktor Yang Mempengaruhi Perilaku Pemberian Asi Eksklusif Pada Ibu Yang Memiliki Bayi Usia 6-12 Bulan Di Wilayah Kerja Puskesmas Gondokusuman I Yogyakarta*.