

Relationship of Telehealth Platform Usage with Mental Health Level in RSUP Dr. Hasan Sadikin Bandung Year 2025

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Article Information

Received: April 08, 2026

Revised: April 28, 2026

Online: April 28, 2026

Keywords

Telehealth, Healthcare, Nursing, Mental

ABSTRACT

This study examines the impact of telehealth platform use on nurses' mental health amid shifting work patterns and rising digital demands. Increased workload, adaptation to new technologies, and changes in patient interaction may trigger psychological problems, especially in facilities actively adopting telehealth. A quantitative cross-sectional design was conducted at RSUP Dr. Hasan Sadikin Bandung in 2025. The sample consisted of 75 nurses selected using simple random sampling. Data were collected through structured questionnaires measuring levels of telehealth use and general mental health. Univariate analysis described frequency distributions, while bivariate analysis used the chi-square test with a significance level of 0.05. The univariate results showed that 70.7% of nurses had high telehealth use, and 60% experienced poor mental health conditions. Bivariate analysis indicated a significant relationship between telehealth use and nurses' mental health (p-value = 0.004). Nurses with high telehealth use had a 2.3 times greater risk of experiencing mental health disorders compared to those with lower use. In conclusion, telehealth platform use significantly affects nurses' mental health. These findings highlight the importance of digital workload management policies, strengthened institutional support, and continuous promotive and preventive programs to maintain nurses' mental well-being.

Keywords : *Telehealth, Healthcare, Nursing, Mental*



INTRODUCTION

The development of information and communication technology has brought major transformations in the world of Health, one of which is the emergence of the concept of telemedicine or better known as telehealth. Telehealth allows healthcare to be performed remotely using digital technology, which is critical to overcoming geographic limitations and making it easier to access for hard-to-reach patients. The Platform allows interaction between medical personnel and patients through video, telephone or other digital applications. Along with the increasing adoption of telehealth, there is a need to study its impact on medical personnel, especially nurses, who are at the forefront of providing health services (Andayani et al., 2021).

However, although the benefits of telehealth are widely recognized, its use brings new challenges for nurses. They not only have to adapt to new technologies, but also face increasing workloads due to the demands to deliver care digitally. The existence of telehealth changes the work dynamics of nurses, by adding technical elements that must be mastered, while they still have to meet the same standards of care. This certainly has the potential to affect the mental health of nurses, especially in dealing with stress, anxiety, and burnout which are common problems among medical personnel (Harris & Kelly, 2020).

The mental health of nurses is becoming an increasingly important concern in this context. As a profession that involves intense interaction with patients, nurses are prone to mental health problems, which can have a direct impact on the quality of care provided. Many previous studies have shown that the stress and burnout experienced by nurses can decrease their performance, as well as reduce patient satisfaction with the health services provided. With more and more nurses involved in telehealth services, it is important to understand the impact of this technology on their mental health (Liu et al., 2021).

One of the hospitals that have adopted the telehealth platform is RSUP Dr. Hasan Sadikin Bandung, as the main referral hospital in West Java. Although the implementation of telehealth in hospitals is increasing, research that examines the effect of telehealth use on the mental health of nurses is still very limited. These hospitals have nurses who work with telehealth systems, but there is not yet enough data to measure the extent to which the use of digital technologies affects their psychological well-being. This becomes important given the vital role of nurses in the successful implementation of telehealth (Kusuma et al., 2021).

Based on existing data, Indonesia has experienced a significant increase in the use of telehealth, especially since the COVID-19 pandemic. The Ministry of health of the Republic of Indonesia reports that more than 50% of hospitals in Indonesia have implemented telehealth in some form. Nevertheless, data on the impact of telehealth on the mental well-being of health workers, especially nurses, are still scarce. More in-depth research is needed to identify whether the use of this technology has a negative impact on the mental health of nurses involved in remote services (Kemenkes RI, 2020).

These mental health problems of nurses are increasingly urgent given the high workload and increasingly complex demands of care. Several international studies show that nurses who



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Professional Evidence-based Research and Advances in Wellness and Treatment (PERAWAT)

Vol. 03, No. 2, April 2026

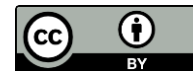
work with telehealth technology often experience higher stress compared to those who work traditionally. This ongoing stress runs the risk of causing nurses to experience physical and emotional exhaustion, known as burnout (Zhang et al., 2021). Burnout is a condition of chronic fatigue accompanied by a feeling of ineffectiveness in work, which greatly affects the quality of care and the well-being of the nurse herself.

More specific studies related to telehealth in Indonesia, especially those targeting its impact on the mental health of nurses, are still rare. Most of the existing research focuses on the technical aspects of telehealth implementation or its impact on patients, while few examine how this technology affects medical personnel, especially frontline nurses. This creates a significant research gap, which needs to be filled to help understand the challenges and psychological impacts nurses face in this digital age (Usher et al., 2020).

In addition, there is a larger implementation gap related to how hospitals prepare nurses to face changes in the work system driven by telehealth. Many hospitals have not provided adequate training on the use of telehealth platforms or the psychological support needed by nurses. Without adequate training and mental support, nurses are more prone to stress and burnout. This Gap is one of the main challenges in the successful implementation of telehealth in Indonesia, and is very important to be explored further in this study (Puspitasari, 2020).

The lack of understanding of the impact of telehealth on the mental health of nurses and the lack of support provided during the implementation of this technology encourages the need for in-depth and focused research. Several previous studies have indicated that training in the use of technology and adequate social support can reduce the negative impact of telehealth use on the mental health of medical personnel (Wang et al., 2022). However, research conducted in Indonesia, with a different cultural context and health system, is needed to gain a more precise understanding.

In recent years, the use of telehealth has increased significantly, especially after the COVID-19 pandemic which accelerated the adoption of digital-based health services in various health facilities. The initial survey found that telehealth not only improves the effectiveness of Nursing Services and expands the range of services, but also presents new challenges for health workers, including nurses, such as digital workloads, demands for rapid response, and the need to adapt to new technologies. Other studies have indicated that while telehealth may provide benefits such as time efficiency and improved access to services, intensive use without adequate training support has the potential to increase stress and psychological distress in health workers. In addition, a preliminary literature review-based study on tele-mental health services found that this technology is able to expand access to mental health services, but also demands the readiness of human resources and strong support systems to prevent negative impacts on the psychological well-being of medical personnel. These findings reinforce the urgency of further research into the impact of telehealth use on nurses' mental health, particularly in local contexts such as in Dr. Hasan Sadikin Bandung.



Researchers' interest in studying this topic is driven by the growing urgency of the problem amid the increasing use of telehealth. Through this study, researchers hope to provide a deeper insight into the well-being of nurses involved in these digital services, as well as offer solutions that can help reduce the negative impact on their mental health. In addition, this study also aims to open a wider dialogue on the importance of managing the mental health of medical personnel in the digital era, which is now a major challenge for the health system in Indonesia.

METHODS

This study uses a quantitative approach with cross-sectional design conducted at RSUP Dr. Hasan Sadikin Bandung, one of the main referral hospitals in West Java. This study aims to analyze the effect of the use of telehealth platforms on the mental health of nurses. The sample in this study amounted to 75 nurses who work in service units that have implemented telehealth. Inclusion criteria for this study sample were nurses who worked for at least 6 months at the hospital and were directly involved in the implementation of telehealth services, either through remote consultation, patient monitoring, or telehealth-related administration. Nurses who were not involved in the use of telehealth or who had retired were not included in the sample criteria. The sample selection was done using simple random sampling technique, to ensure a fair representation of the nursing population in the hospital.

Data collection was conducted through a structured questionnaire that was prepared to measure two main variables in the study: the level of telehealth use and the mental health of nurses. The questionnaire used consisted of two main parts, namely first, questions regarding the frequency and intensity of telehealth use, and second, a measurement scale that assesses the level of stress, anxiety, and burnout in nurses. The collected Data were analyzed univariately to see the frequency distribution of each variable, and analyzed bivariately using the chi-square test to test the relationship between the level of telehealth use and the mental health of nurses with a significance level of 0.05. The study also adheres to the principles of research ethics, in which each respondent is given an explanation of the objectives of the study and their rights as participants. The written consent of each respondent is obtained before the data is collected, by ensuring the confidentiality of personal information and maintaining the privacy rights of each participant in accordance with applicable research ethics guidelines.

RESULTS

1. Frequency Distribution of Telehealth and Mental Health Nurse Use Rates

Univariate analysis was conducted to see the frequency distribution of variables in this study, namely the level of telehealth use and mental health of nurses. Here is the frequency distribution for each variable.



Table 1. Frequency Distribution of Telehealth and Mental Health Nurse Use Rates at RSUP Dr. Hasan Sadikin Bandung Year 2025

Variable	Categories	Frequency (n)	Percentage (%)
Telehealth Usage Rate	Low	22	29.3
	Medium	23	30.7
	High	30	40
Mental Health	Good	15	20
	Good Enough	18	24
	Less Good	45	60

From the results of univariate analysis, it can be seen that 40% of nurses has a high level of telehealth use, while 30.7% of nurses have a moderate level, and another 29.3% have a low level. Regarding mental health in general, 60% of nurses experience poor mental health conditions, while 24% of nurses have a fairly good mental health condition, and only 20% of nurses have a good mental health condition.

2. Relationship Of Telehealth Use Rates With Mental Health Of Nurses

A bivariate analysis was conducted to examine the relationship between telehealth use levels and nurses mental health using the chi-square test. Here is the test result of the relationship between the two variables.

Table 2. Relationship of Telehealth Use Rates with Mental Health of Nurses at RSUP Dr. Hasan Sadikin Bandung Year 2025

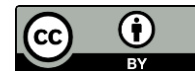
Variable	Categories	Telehealth Usage Rate	p-value
Mental Health	Good	4 (26,7%)	0,004
	Good Enough	9 (40%)	
	Less Good	42 (93,3%)	

The results of the chi-square test showed a significant relationship between the level of telehealth use and the mental health of nurses (p -value = 0.004). Nurses with high telehealth use were more likely to experience poor mental health (93.3%), compared to nurses with low or moderate levels of telehealth use. In addition, nurses with high telehealth use had a 2.3 times greater risk of developing mental health disorders compared to nurses with low levels of telehealth use. This suggests that intense telehealth use may increase the risk of mental health disorders in nurses.

DISCUSSION

1. Frequency Distribution of Telehealth and Mental Health Nurse Use Rates

The results of the univariate analysis showed that the majority of nurses (40%) had high levels of telehealth use, followed by 30.7% of nurses with moderate levels of Use, and 29.3% with



low levels of use. This fact shows that the hospital has implemented the telehealth platform quite effectively, considering that more than a third of nurses are involved in the use of the platform at a high level. This high adoption of telehealth is in line with the growing trend of increased use of telemedicine in many large hospitals in Indonesia post-COVID-19 pandemic, which encourages hospitals to adopt digital technology in health services.

The theory of technology adoption proposed by Rogers in the Theory of Diffusion of Innovations states that the adoption of technologies such as telehealth will be more quickly accepted by individuals who have a positive perception of the benefits and ease of use of these technologies. In this context, the results of studies showing a high level of telehealth use among nurses can be understood as a result of the adoption of technology driven by a positive perception of the effectiveness of telehealth in simplifying health services and increasing efficiency. This reflects the good acceptance of technology in the world of health, although challenges in the adaptation of digital technologies remain.

High rates of telehealth use in Dr. Hasan Sadikin Bandung showed the success of hospitals in integrating new technologies. However, this success needs to be balanced with adequate training for nurses to ensure that the use of such platforms does not impair their well-being. Based on the existing literature, many studies show that the use of technology in the medical world has the potential to provide significant benefits, but can trigger stress or burnout if not balanced with the right support.

In terms of mental health, the results showed that 60% of nurses in this hospital experienced poor mental health, while 24% had a fairly good mental health condition, and only 20% had good mental health. This fact indicates a serious problem related to the psychological well-being of nurses, although they are involved in the use of advanced technologies such as telehealth. These Data reflect the potential for burnout and occupational stress common to the nursing profession, which are widely researched in the literature as factors that can degrade the quality of health care.

The job demand-resources theory proposed by Bakker & Demerouti (2017) explains that stress and burnout can arise when there is an imbalance between job demands and resources owned by individuals. In this sense, the use of telehealth as a complex new job demand can increase nurse stress if it is not balanced with sufficient resources, such as training, social support and good time management.

According to the researcher, although the adoption of technologies such as telehealth can improve work efficiency, the risks to the mental health of nurses must be further considered. Researchers assume that one of the possible factors leading to a poor state of mental health is the lack of psychological support and training to adapt to this technology. Therefore, it is necessary to have policies that support the mental well-being of nurses, such as psychosocial training and stress management in accordance with the demands of new technologies.

Related to the comparison of telehealth use and mental health, the results of this study show that high telehealth use is more often followed by poor mental health conditions. This



illustrates that although nurses may find this technology helpful in their work, the additional burden brought about by the use of such technology can lead to greater anxiety and stress. These findings support the pre-existing opinion that technology, while bringing many benefits, can also be a source of stress for health workers if not implemented carefully.

According to the theory of work stress developed by Karasek and Theorell (2021), stress can arise when the individual feels that he has no control over his work or when the demands of work exceed the individual's capacity to deal with them. In this context, the use of telehealth can increase job demands for nurses, especially if they feel poorly trained or burdened with technical aspects that they must master. Therefore, the implementation of this technology must pay attention to the balance between job demands and the support provided, in order to minimize the negative impact on the well-being of nurses.

According to the researchers, to reduce the negative impact on mental health, hospitals should provide intensive training for nurses to ensure they feel competent in using this technology. It also includes providing psychosocial support, such as counseling sessions or stress management programs that can help nurses manage the feelings of anxiety and stress they experience as a result of technology use.

In the context of mental health, most nurses who experience mental health problems may also be affected by external factors, such as high workload, lack of rest time, and pressure to provide quality health care. The theory of workplace stress expressed by Kabat-Zinn (2020) emphasizes the importance of factors such as long working hours and conflicts between work and family in increasing stress levels in medical personnel. Researchers argue that the use of telehealth should not increase the burden, but rather be an effective solution to reduce the physical and emotional stress of nurses. However, without adequate support, the benefits of such technologies can be lost (Kabat-Zinn, 2020).

Based on the theory of psychological toughness (resilience), individuals who are more resilient tend to be better able to cope with challenges and stress in their work. By providing adequate training and strong social support, nurses can improve their resilience in the face of pressures arising from the use of technology. Therefore, it is important to consider resilience improvement strategies for nurses in telehealth implementation (Tugade & Fredrickson, 2020).

From the results of this study, it can be concluded that although the use of telehealth shows a high level among nurses, unfavorable mental health factors need to get more attention. Stress factors caused by new technologies must be balanced with appropriate mitigation strategies. Thus, hospitals and other health organizations should focus not only on the implementation of technology, but also on the psychological well-being of medical personnel involved in the use of such technology.

2. Relationship Of Telehealth Use Rates With Mental Health Of Nurses

Based on the results of bivariate analysis using the chi-square test, it was found that there was a significant relationship between the level of telehealth use and the mental health of nurses.



Nurses with high levels of telehealth use showed less good mental health (93.3%), while nurses with low or moderate levels of telehealth use had better mental health conditions. These results indicate a significant influence between the intensity of telehealth use and mental health disorders in nurses, with a very significant p-value (p-value = 0.004). These findings suggest that more frequent use of telehealth has the potential to increase stress and mental health disorders in nurses directly involved in this technology.

In relation to the theory of work stress, the theory proposed by Karasek and Theorell (2021) provides a relevant explanation. Karasek suggests that job stress occurs when there is an imbalance between job demands and individual resources. In the context of this study, the use of telehealth as a new, often complex job demand can increase nurses' stress levels, especially if it is not supported with adequate resources, such as training or emotional support. Karasek and Theorell (2021) explain that this imbalance can lead to physical and emotional tension, which can negatively affect mental health.

Researchers assume that higher telehealth use may increase the psychological burden on nurses, as they not only face more job demands, but also mental pressure to master new technologies. Researchers suggest that hospitals need to provide intensive training that integrates the use of telehealth with stress management programs. This is important so that nurses can adapt to technological change without further burdening their mental health.

The study also found that nurses who used telehealth at high levels had a 2.3 times greater risk of developing mental health disorders compared to nurses who used telehealth at low levels. The findings reinforce the view that work intensity, in this case high telehealth use, is associated with poorer mental health. This is in accordance with the burnout theory proposed by Maslach and Leiter (2020), which explains that emotional and physical exhaustion often occurs in medical personnel who feel they are unable to meet the ever-increasing demands of work, in the absence of adequate support.

From these results, the researchers assume that nurses exposed to intensive use of telehealth in the absence of effective support mechanisms would be more prone to emotional burnout. Therefore, hospitals need to develop policies that support the overall well-being of nurses, including providing adequate rest periods and providing opportunities for relaxation or affordable psychological therapy. This is in line with the findings of Zhang et al. (2021), which showed that nurses who work in an environment with high technological demands tend to experience more symptoms of stress and mental fatigue.

In addition, the theoretical Job Demand-Resources (JD-R) Model proposed by Bakker and Demerouti (2017) also provides further insight into this dynamic. This Model states that when the demands of the job increase, but the resources available are insufficient, the individual will experience greater stress and fatigue. In the context of this study, nurses who use telehealth at a high level can experience a significant increase in job demands, but if they are not supported with sufficient resources, such as technical training and emotional support, they are at risk of developing mental health disorders.



Researchers assume that the use of telehealth can not only be seen as a tool to improve efficiency, but also as a factor that can increase the workload of nurses if not supported by appropriate mitigation strategies. One proposed solution is for hospitals to implement training programs that not only teach the technical aspects of telehealth use, but also include psychosocial training that helps nurses manage stress and improve their mental toughness in the face of work pressure.

Along with the development of health technology, more and more hospitals are implementing telehealth systems to reduce physical burden and improve service efficiency. However, it is important to note that the theory of stress adaptation proposed by Lazarus and Folkman (1984) suggests that although individuals can adapt to stress, long-term negative impacts remain if the stress is not properly managed. The use of technology such as telehealth requires adequate adaptation time as well as effective workload management to reduce the impact of stress.

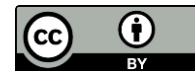
Based on these findings, researchers argue that nurses exposed to high levels of telehealth use should be given adequate support in the form of intensive training and ongoing stress management. The researcher also highlighted the importance of creating a work environment that facilitates technological adaptation without worsening the mental health conditions of nurses. More holistic training programs, covering both technical and psychosocial aspects, are urgently needed to ensure nurses can better use telehealth technology without compromising their well-being.

These results also reflect a broader trend in the medical world, where the pressures that come with technological advances can have an impact on the mental health of medical personnel. The theory of technological dependence proposed by Greenfield et al. (2020) revealed that over-reliance on technology can add to stress, especially if the technology is not accompanied by adequate training or emotional support. In this study, intensive use of telehealth without sufficient support is one of the factors that can increase stress among nurses.

In conclusion, although the use of telehealth provides many benefits in improving the efficiency and accessibility of health services, the negative impact on the mental health of nurses needs to be taken seriously. Based on the results of this study, hospitals are expected to implement policies that not only encourage the use of technology, but also provide the necessary psychological support to reduce the negative impact of telehealth use on nurses' mental health.

CONCLUSIONS

The conclusion of this study shows that the use of telehealth platforms has a significant effect on the mental health of nurses in Dr. Hasan Sadikin Bandung. Based on the results of the univariate analysis, it was found that the vast majority of nurses (70.7%) use telehealth at a high level, while 60% of nurses experience poor mental health conditions. The bivariate analysis showed a significant association between the level of telehealth use and the mental health condition of nurses, with a p-value of 0.004. Nurses who use telehealth at high levels have a 2.3 times greater risk of developing mental health disorders compared to nurses who use telehealth at



low levels. This illustrates that although the use of telehealth can increase efficiency in health services, it can also be a contributing factor to increased stress and mental health disorders in nurses. Therefore, hospitals need to pay attention to the mental well-being of medical personnel by providing adequate training and psychosocial support to reduce the negative impact of the use of these technologies.

However, this study has some limitations that need to be considered. First, the cross-sectional design of the study only gives an idea of the relationship between telehealth use and mental health at one point in time, so it cannot show a direct cause-and-effect relationship. Second, a sample size limited to 75 nurses in one large hospital may also limit the generalization of these findings to nurse populations in other hospitals or in different areas. In addition, the measurement of mental health using self-report through questionnaires can affect the objectivity of the results, as nurses may experience bias in reporting their mental health condition. For further research, it is recommended to use a longitudinal design with a larger and more diverse sample, as well as more objective methods of measuring mental health in order to obtain a more comprehensive picture of the impact of telehealth use on the well-being of nurses.

ACKNOWLEDGMENT

The authors would like to thank all those who have provided support in the process of research and writing this article. Gratitude goes to RSUP Dr. Hasan Sadikin Bandung for the support of the facilities that have been provided. Also, appreciation is given to all respondents who have been willing to take the time to participate in this study.

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Vol. 03, No. 2, April 2026

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