

Telenursing Applications in Treatment Compliance among Patients with Mental Disorders

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ABSTRACT

Background: Treatment adherence is one of the problems in the treatment of patients with mental disorders. Telenursing is a part of telemedicine that plays an important role in providing modern nursing care, improving the quality of care, and accessing services quickly. **Purpose:** To describe the use of telenursing in medication adherence in patients with mental disorders. **Methods:** Literature review searches were conducted on PubMed, Wiley, and Google scholar. The search strategy used the keywords "telenursing" OR "telehealth" AND Medication Adherence" AND "Mental disorder". The inclusion criteria are the article uses a Randomized Control Trial design, the article does not limit the place or location, published in the last 5 years (2017-2021), in English and free full text. While the exclusion criteria are qualitative research, mixed-method, journal review/systematic review, published under 2017, the title and abstract do not match. **Results:** Four articles matched the inclusion criteria and topics. From four articles, it was found that the application of telenursing in mental disorders uses TIPS (Telephone Intervention Problem Solving), LEAN (Lay health supporters, E-platform, Award, and iNtegration), cellular applications such as WhatsApp, WeChat, Telegram, Line. **Conclusion:** With a smartphone application, it can provide a signal, reminder, or education, in overcoming forgetting or not wanting to take medicine or forgetting to control schedules and can be adjusted to resource and geographical conditions. The use of telenursing can help people with mental disorders to increase their belief in the importance of treatment, increase treatment adherence, reduce the length of hospital stay.

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1. Introduction

Technological developments will help relieve nurses in providing nursing care to the patients, families, and communities. Telenursing is an alternative technology for providing nursing care. Telenursing is part of telemedicine in providing modern nursing care, improving quality care, access nursing care (Pepito & Locsin, 2018) services quickly so that they can overcome geographic barriers

that focus on long-term patient health. In addition, it also provides opportunities for health workers to train, provide follow-up, and provide support to the families (Fathizadeh et al., 2020).

Telenursing uses communication technologies such as telephone, short message service (SMS), e-learning tools, email, and smartphone software (Fathizadeh et al., 2020). Convenient and complex telenursing services in nursing practice consist of telephone triage, nurse counseling, and care management (Yliluoma & Palonen, 2020). Moreover, telenursing can be an option in providing psychotherapy or assessment to patients with mental health problems, dealing with depression, anxiety, and post-traumatic stress disorder (Lawes-Wickwar et al., 2018). People with severe mental disorders must get an early intervention to prevent mental health decline or recurrence (Lawes-Wickwar et al., 2018). Long-term treatment aims to reduce death and chronic disease. This will be achieved if the patient adheres to the treatment.

Adherence to treatment in people with mental disorders affects the disease episodes, repeated hospitalizations, recurrence rates, costs, and suicide attempts (Beebe et al., 2017). Medication nonadherence is caused by the side effects of psychiatric treatment, negative attitudes toward medication, distrust of medication, self-indulgent withdrawal, psychiatric symptoms, memory problems, alcohol use, and lack of social support. On the other hand, non-compliance with treatment can lead to disease recurrence, increased access to health facilities, hospitalization costs, poor health, suicidal thoughts, and decreased response to treatment (Beebe et al., 2017). High adherence to treatment is critical to the treatment success. However, in practice, treatment adherence is low and decreases over time. The concept of telemedicine can improve services and close the gap between inpatient and outpatient care (Stentzel et al., 2016). One of them is the adherence to take medication which has been agreed with health workers. Compliance is influenced by beliefs, experiences, and culture (Pouls et al., 2021).

A study in Türkiye also stated that non-adherence to take medication was 85% (Uslu, 2019). Many interventions can be used to improve medication adherence in people with mental disorders. One of them is the use of communication technology which is growing rapidly and widely and can be used to provide health services in various conditions, populations, and settings. Telephone is the most popular means of communication used in the developed countries, due to its cost effectiveness and accessibility (Fathizadeh et al., 2020). Most patients do not use antipsychotics and half have problems taking the drug. However, most people with schizophrenia are reluctant to use antipsychotics. According to some sources, half of people with schizophrenia have problems with medication adherence. Communication technology used in providing health services is often called telehealth. Telehealth is a healthcare provider, where patients can see and listen without being in the same room (Lawes-Wickwar et al., 2018). In addition, telenursing is considered a form of quality nursing designed for all age groups with various health problems, where knowledge and skills are needed to listen, communicate, and take appropriate action (Eriksson et al., 2020). Based on the problems previously described non-compliance in the treatment of patients with mental disorders needs to be resolved. It is because patients need interventions that are effective, and easily accessible so that problems of non-compliance can be overcome. Telenursing treatment is treatment given to people with mental disorders by phone, which is useful for extending the time patients spent in the community and for reducing the number of days spent in the hospital during repeated hospitalizations, as well as the number of applications for return inpatient.

The use of telenursing is expected to increase medication adherence after discharge and reduce the severity of psychiatric problems even though the patients receive less treatment with telemedicine. The purpose of this study is to provide an overview of the use of telenursing in medication adherence in patients with mental disorders.

2. Methods

Using the Systematic Literature Review method is a more systematic and formal type of literature review. Literature Review is carried out in a systematic way, namely by using standardized protocols or review plans to carry out the selection, evaluation, and synthesis of studies to be reviewed. The searching strategy used the keywords “telenursing” OR “telehealth” AND “Medication Adherence” AND “Mental disorder”. The searching conducted in the PubMed, Wiley, and Google scholar databases is limited to the last 5 years, in English and free full text. The inclusion criteria are articles with Randomized Control Trial design, articles that do not limit place or location, published in the last

5 years (2017-2021), in English and free full text while the exclusion criteria are qualitative research, mixed methods, journal reviews/systematic reviews, published under 2017, title and abstract do not match. The articles obtained were filtered and selected according to the focus of the review and the purpose. After that, they were organized into Endnotes which were named according to the database used. A search of review articles across three databases yielded 13625 articles, in English and free full text with 57 article results. The focus on the application of telenursing in medication adherence to mental disorders was found in 4 articles. Data search can be seen in the PRISMA diagram (The Preferred Reporting Items for Systematic Reviews and Meta-Analysis) in Fig. 1.

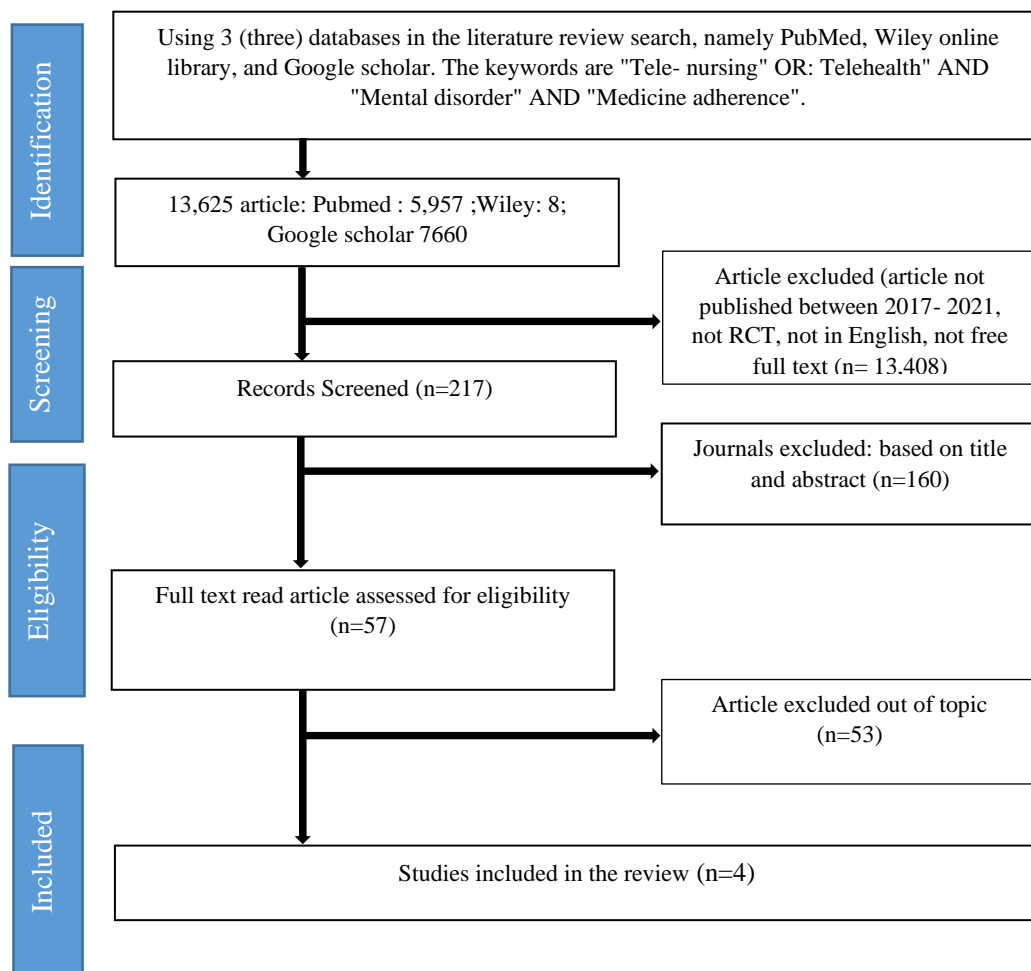


Fig. 1. Processing of the Records

3. Results

The focus of this literature review is the application of telenursing in medication adherence in mental disorders. The first thing to do is classifying the search results and getting four articles that match the criteria and topics that have been determined. As for the search, it was found the use of TIPS (Uslu & Buldukoglu, 2020), LEAN (Cai et al., 2020; Lu et al., 2019), and telephone applications (Low et al., 2021) in assisting medication adherence in mental patients. More details can be seen in Table 1.

Table 1. Details of the results of the literature review

No	Author and year	Method	Location	Sample	Intervention	Result
1	Uslu & Buldukoglu, (2020)	Randomized Controlled trial	Turki	46 patients consisted of 22 intervention groups and 24 control groups.	TIPS (telephone intervention problem solving) was given to the intervention group 8 times for 2 months and routine care continued, while the control group received routine care provided by the hospital.	TIPS has a high influence on medication adherence in schizophrenic patients.
2	Low et al., (2021)	Randomized Controlled trial	Malaysia	183 respondents consisting of 92 intervention groups and 91 control groups from outpatient psychiatric services.	The intervention group received two types of reminders: medication adherence and schedule control. Reminders sent via mobile message of the respondent's choice, WhatsApp's, WeChat, telegram, or line. The control group did not receive any reminders. The intervention was carried out for 2 months.	Mobile app messaging improves outpatient attendance, medication adherence in depressed patients.
3	Cai et al., (2020)	Randomized Controlled trial	China	277 respondents divided into 139 intervention groups and 138 control groups in the community.	The intervention group received LEAN (Lay health supporters, E-platform, Award, and integration) and the control group received the 686 programs (reload records, re-hospitalization, death from any reason, suicide, violent behavior) then continued with both groups.	Mobile SMS messaging is more effective in improving medication adherence, reducing symptoms, and reducing repeated hospitalizations in schizophrenic patients.
4	Xu et al., (2019)	Randomized Controlled trial	Central China	278 respondents consisted of 139 intervention groups and 139 control groups.	The intervention group and health cadres received LEAN (Lay health supporters, E-platform, Award, and integration). The intervention was carried out for 3 months.	The addition of SMS to patients can improve treatment adherence, reduce recurrence and reduce repeated hospitalizations in schizophrenic patients.

The use of TIPS, LEAN, and mobile messaging applications such as WhatsApp, WeChat, telegram, the line can improve medication adherence, reduce the length of hospital stay, and reduce the relapse of people with mental disorders. Smartphone applications will increase confidence in the importance of treatment, provide a signal, reminder, or education, in overcoming forgetting or not wanting to control or taking medication, and can be adjusted to the condition of the existing resources.

4. Discussion

Remote nursing/ telenursing is considered a communication technology that can provide various technologies such as internet, telephone, SMS, email, and video. The four articles discussed the use of telenursing in medication adherence in people with mental disorders. The application of telenursing can help patients with mental disorders to continue to undergo treatment, both with control and taking medication.

Compliance is determined by the individual attitudes, norms, and perceived behavioral control. Attitudes reflect beliefs and values associated with the perceived outcomes related to compliance. Norms reflect the degree to which others, such as family members and caregivers encourage compliance. While behavioral control/self-efficacy reflects the perceived ease or difficulty to overcome obstacles in compliance and the level of confidence in one's ability to do so (Beebe et al., 2017).

A study conducted by Uslu & Buldukoglu (2020) apply the use of TIPS (telephone intervention problem solving). TIPS provides a solution to the problem of people with schizophrenia by calling them eight times over about 2 months. As a result, the treatment adherence in the intervention group increased. TIPS is a telenursing application that can prevent patients with schizophrenia from voluntarily discontinuing treatment and increase their beliefs about the need for treatment and adherence to treatment. In this study, nurse clinical decision-makers should know the benefits of using TIPS and consider implementing TIPS in the clinic.

The other two articles explain the use of LEAN (Lay health supporters, E-platform, Award, and integration). According to Xu et al (2019), the addition of SMS improves medication adherence, reduces relapse, and reduces repeated hospitalizations. SMS is expected to provide a signal or enlightenment to overcome forgetting or not taking medication. This can be adjusted to the existing resource conditions.

This program is relatively easy to implement and low cost of use. LEAN is a program for health cadres through text messages to remind them about treatment, health education, and monitoring for early signs of relapse associated with primary care facilities. LEAN consists of four elements: (1) lay: health support (family members who care for sufferers, side effects and relapses, and supervise emergency care), (2) e-platforms (medication reminders, health education, and relapse monitoring SMS), (3) rewards as tokens to facilitate behavioral improvement, and (4) Integration of SMS into existing health care systems to enable collaborative care.

However, in using LEAN, there is a cost to provide training and continuation of the program. The system also has to be reliable as it needs to select the correct phone to track the customer changing number. The patients can use SMS to connect all patient care teams, cadres, doctors, psychiatrists, and anyone who supports the sufferers.

The same was done by Cai et al (2020) who said that long-term SMS intervention with LEAN in schizophrenic patients and health care workers would improve medication adherence, reduce the severity, and reduce repeated hospitalizations. Whereas (Low et al., 2021) said that the group that received reminder messages experienced an increase in adherence to antidepressant treatment as evidenced by the MADRS (Montgomery-Asberg Depression Rating Scale) score which experienced a change after two months of the intervention.

In this study, mobile messaging applications such as WhatsApp, WeChat, Telegram, or line are used as reminders. With this application, patient attendance for control has increased. Medication adherence will improve symptoms of depression overall. This is similar to what was reported by Morawski et al (2018) who said that smartphone applications could help overcoming non-adherence or absenteeism in the treatment of hypertensive patients.

This is usually due to forgetfulness or a low level of consciousness. Meanwhile, according to Huang et al (2019) stated that smartphone applications increase awareness of medication adherence in type 2 diabetes patients and reduce barriers to medication adherence. The telephone-based treatment strategy showed improvement in medication adherence in schizophrenic patients after the intervention. Treatment adherence occurs in patients who have negative attitudes and perceptions about treatment (Montes et al., 2010).

5. Conclusion

The use of TIPS, LEAN, and mobile messaging applications such as WhatsApp, WeChat, Telegram, and Line can improve medication adherence, reduce the length of hospital stay, and reduce the relapse of people with mental disorders. Smartphone applications will increase confidence in the importance of treatment, provide a signal, reminder, or education, in overcoming forgetting or not wanting to control or taking medication, and can be adjusted to the condition of the existing resources. Future researchers can conduct research on the use of telenursing in Indonesia.

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