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Improving Emotional Control And Activities of Daily Living (ADL) of Schizophrenic Patients Using Spiritual Mindfulness Through SI-DEPAPU Application

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Abstract

Background: Schizophrenia is a major mental health problem in the world that requires more attention. Patients with schizophrenia are at higher risk of poor psychological well-being and violent behaviors as an expression of anger and delusion. Mindfulness practices alone are considered less efficient so they need to be developed with technology, as such further technological development regarding its application is needed.
Objective: This study aimed to determine the effects of a spiritual mindfulness intervention through the SI-DEPAPU application on the ability to control anger and perform activities of daily living (ADL) among schizophrenic patients.
Methods: This study used a pretest-posttest quasi-experimental design with a control group. The samples were 60 schizophrenic patients randomly selected and divided into two groups. The intervention group was given four sessions of mindfulness in two weeks through the SI-DEPAPU application. This study used the anger management ability questionnaire developed by Sadipun et al. (2018) to measure the patient's ability to control anger and the North American Nursing Diagnosis Association (NANDA) questionnaire by Wilkinson (2016) to measure ADL. The instrument was tested for its validity among 20 schizophrenic patients with a risk of violent behaviors, and the results were valid and reliable in which the r-count > r-table (0.444), the control group was given standard hospital care.
Results: The results showed that the patient's ability to control anger and perform ADL increased with p=0.000 and p=0.005, (p = 0,000 < 0,05) respectively. The intervention group had a higher mean score than the control group.
Conclusion: Mindfulness spiritual interventions through the SI-DEPAPU application could help schizophrenic patients control anger and increase their ADL.

Keywords: control; emotion; mindfulness; schizophrenia; spiritual

INTRODUCTION

The prevalence of mental disorders is estimated to increase by 25% in 2030. Schizophrenia is a chronic mental disorder in the form of a neurobiological disorder that causes abnormal thinking, including delusions and hallucinations (Wilianto & Yulistiani, 2019). Schizophrenia is one of the 15 major causes of disability worldwide and significantly impacts various aspects of life (WHO, 2022; Facorroa et al., 2021). The global prevalence shows that around 24 million, or 1 in 300 individuals (0.32%) in the world, suffer from this disease (WHO, 2022). Based on the results of the Basic Health Research (Riskesdas) in 2018, it is estimated that around 450,000 people, or 7 out of 1,000 households in Indonesia, experience schizophrenia (Kemenkes RI, 2019).

A common problem occurring among schizophrenic patients is violent behaviors. Violent behaviors occur due to the individual's inability to control their emotions or express their thoughts and feelings

effectively and assertively. This situation can lead to verbal and nonverbal aggressive behaviors aimed at oneself, other people, or the surrounding environment (Nurhalimah, 2016; Muhith, 2015). Schizophrenia also affects the fulfillment of patients' needs and independence in carrying out activities of daily living (ADL). If this problem is not immediately resolved, the patient can experience self-neglect and a decreased health status (Yusuf et al., 2015).

A survey study at the Semarang Psychiatric Hospital in 2018 reported that 308 schizophrenic patients had a relapse and were re-admitted to the hospital. The study also showed that 70% of the respondents had symptoms of violent behaviors due to the inability to control emotions. The stigma that arises from these violent behaviors also affects the relationship between patients and their families. This can hinder the recovery process and prevent an increase in the patient's quality of life (Subu et al., 2016).

Nurses play a vital role in supporting the optimal improvement of a patient's health in the hospital until the time the patient returns home. The focus of treatment and care is to reduce and prevent the reoccurance of violent behaviors and increase patient satisfaction relating to the performance of social activities and ADL. In this case, nurses should approach patients from the perspective that humans are holistic beings with bio-psycho-social and spiritual components (Nurhalimah, 2016).

This holistic approach provides both pharmacological and other interventions, one of which is the spiritual mindfulness intervention. This intervention can make patients aware of their condition without judgment and accept it full-heartedly so that patients are able to control negative affects and obtain increased awareness of positive affects (Davis & Zautra, 2013). Previous research shows that mindfulness effectively increases adult patients' ability to control emotions (Sadipun et al., 2018). However, based on a study by Aikens et al., the provision of conventional mindfulness is considered too slow, so it needs to be developed in conjunction with technology to make it more efficient (Alkens et al., 2014).

Recent technological advances have enabled nurses to improve their ability to aid patients. Nurses should innovate to help overcome patients' problems. According to Locsin, the basic concept of technology in health views technology as an instrument and tool in facilitating human care. Also, it can be a tool to increase human activity in health services. Caring technology can assess patients' experiences from time to time so that nurses can fully understand the patients' problems (Locsin, 2015).

Several android applications using mindfulness-based nursing interventions have been developed in Indonesia, such as the SI-DESIS (Social Interaction Detection Information System) and SI-SIWATA (Information System for Mental Health with Love). The SI-DESIS app is used to detect the social interactions of schizophrenic patients and improve patient interaction skills. Meanwhile, the SI-SIWATA aims to help schizophrenic patients increase their spiritualnesswith Islamic spiritual mindfulness interventions (Kurniasari et al., 2020). However, currently no application has focused on helping patients control their emotions to avoid violent behaviors. Emotions play a vital role in schizophrenic patients and the ultimate goal of treatment is symptom improvement and patients' personal satisfaction in carrying out social activities and ADL. The researchers are interested in researching the effectiveness of an application to increase the ability to control emotions and monitor ADL among schizophrenic patients.

SI-DEPAPU (Discharged Patient Detection Information System) is a system developed by a research team at Diponegoro University to help outpatients maintain their mental health after returning home, including the ability to control their anger, social isolation, and self-care. In addition, SI-DEPAPU helps nurses in patient therapy programs, so that nurses are able to anticipate the needs of patients and their families at home. In this application, the researchers provide features of patient demographic data, ADL, monitoring of emotional control, social interaction, spiritual mindfulness exercises, and documentation.

METHOD

Research design

This study used a pre-post-test quasi-experimental design with a control group.

Population and samples

The population was all schizophrenic patients undergoing treatment at Dr. Amino Gondohutomo Psychiatric Hospital, Central Java Province. The samples in this study were 60 patients who were randomly selected. The inclusion criteria included schizophrenic patients who were aged between 18-55 years old, Muslim, able to read and write, had a history of violent behaviors within three weeks of treatment, were cooperative, and were willing to become respondents. Meanwhile, the exclusion criteria were patients who did not complete the research procedure from start to finish. There was no respondents who dropped out.

Measurement and data collection

The control group was given standard hospital care, while the intervention group followed procedures using the SI-DEPAPU application in addition to standard hospital care, in the control group are given medication according to the patient's needs and standard activities of the hospital. The following are the features of the SI-DEPAPU application:

Figure 1. Application features

Figure 2. Emotional control menu

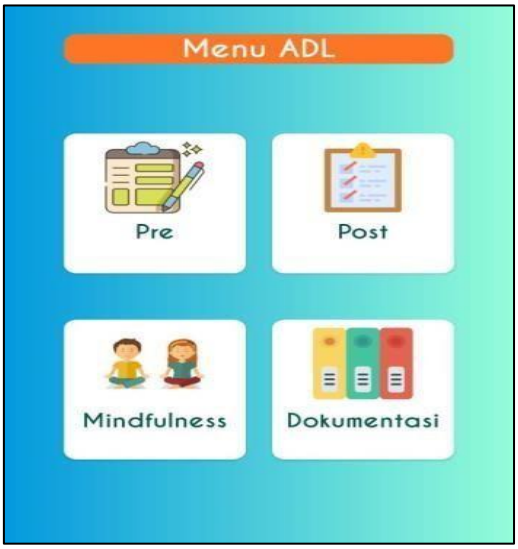

Figure 3. ADL feature

Using the SI-DEPAPU application, the patients participated in a series of spiritual mindfulness interventions four times with the help of research assistants are health care staff and under the

researcher's supervision. Interventions were given once every three days for two weeks. After the interventions, a post-test was carried out on the last meeting in both groups to see differences in patient's ability to control anger and perform ADL, each session between 30 minutes and 40 minutes, consisting of steps of intention, muhasabah (self-acountability), repentance, body scan, prayer, trust and relaxation.

This study used the anger management ability questionnaire developed by Sadipun et al. (2018) to measure the patient's ability to control anger and the North American Nursing Diagnosis Association (NANDA) questionnaire by Wilkinson (2016) to measure ADL. The instrument was tested for its validity among 20 schizophrenic patients with a risk of violent behaviors, and the results were valid and reliable in which the r-count > r-table (0.444).

Data Analysis

Statistical data analysis was performed from the results of the pre-test and post-test intervention using the Mann-Whitney test.

Ethical Considerations

This study has received ethical approval from the Health Research Ethics Committee of Dr. Amino Gondohutomo Psychiatric Hospital, Central Java, Indonesia, with a reference number of 420/6028. All respondents signed informed consent forms prior to their participation in this study. Furthermore, they were informed of the study's purposes and procedures and that they had the right to withdraw from the research at any time without penalty. Confidentiality of the recorded data was also strictly maintained.

RESULTS

The study was conducted among 60 respondents who were divided into two groups: the intervention group (n=30) and the control group (n=30).

Table 2. Characteristics of the Respondents

Variable	Intervention		Control	
	n	%	n	%
Age	Mean±SD (Min-Max) 33.8±8.5 (19-48)		Mean±SD (Min-Max) 30.0±7.5 (19-45)	
Gender				
Male	18	60.0	15	50.0
Female	12	40.0	15	50.0
Education				
Elementary	4	13.3	1	3.3
Junior high school	16	53.3	9	30.0
High school	10	33.3	20	66.7
Job				
Unemployed	17	56.7	17	56.7
Entrepreneur	4	13.3	10	33.3
Farmer	2	6.7	0	0
Factory worker	3	10.0	3	10.0
Other	4	13.3	0	0
Length of stay	Mean±SD (Min-Max) 8.87±10.04 (2-41)		Mean±SD (Min-Max) 11.1±5.20 (2-21)	
Frequency of admission				
1-3 times	21	70.0	28	93.3
4-6 times	7	23.3	1	3.3
7-10 times	2	6.7	1	3.3

Table 2 shows that all variables are homogeneous, and there are no differences in the respondents' characteristics. In the intervention group, the mean age was 33.8, and the majority were male (n=18; 60.0%), junior high school graduates (n=16; 53.5%), and unemployed (n=17; 56.7%). The average length of stay was 8.87 days. Meanwhile, in the control group, the mean age was 30.0; the majority were junior high school graduates (n=20; 66.7%) and unemployed (n=17; 56.7%). The average length of stay was 11.1 days, and the number of male and female respondents was equal (n=15; 50.0% each).

Table 3. The Effect of Spiritual Mindfulness Therapy through the SI-DEPAPU Application on the Ability to Control Emotion among Schizophrenic Patients in the Intervention and Control Groups

		Intervention		Control		*p*
		Mean Rank	Sum Rank	Mean Rank	Sum Rank	
Anger control	Pre-test	34.08	1022.50	26.92	807.50	0.108
	Post-test	45.50	1365.00	15.50	465.00	0.000

Mann-Whitney test

Emotion control

Table 3 shows no significant difference between the control and intervention groups. However, a significant difference in controlling emotions was found after the intervention (p=0.000 <0.05).

Table 4. The Effect of Spiritual Mindfulness Therapy through the SI-DEPAPU Application on the Independence Level of ADL of Schizophrenic Patients in the Intervention and Control Groups

		Intervention		Control		*p*
		Mean Rank	Sum Rank	Mean Rank	Sum Rank	
ADL independence	Pre-test	27.04	730.00	27.96	755.00	0.739
	Post-test	30.00	837.00	24.00	648.00	0.005

Mann-Whitney test

Activities of Daily Living (ADL)

Table 4 shows no significant difference in the ADL independence between the two groups before the intervention (p = 0.739 >0.05). However, after the intervention, a significant difference in the increase of ADL independence was found (p = 0.005 <0.05).

DISCUSSION

Providing Islamic spiritual mindfulness interventions through the SIDEPAPU application combined with hospital standard interventions can positively affect schizophrenic patients. This study showed that the intervention group had a higher mean score than the control group. In addition, the patient's ability to control emotions (p=0.000) and perform ADL (p=0.005) significantly increased after the intervention. This result aligns with a previous study reporting that mindfulness through applications can significantly increase the user's level of awareness over a 4-week period (Chittaro & Vianello, 2016). Mindfulness also focuses on increasing self-awareness, acceptance, and processing negative thoughts, emotions, and feelings related to illness or stress experienced (Chien et al., 2019).

Neurobiological disorders in schizophrenic patients cause disturbances in thinking and difficulty concentrating (Yilmaz & Okanli, 2017; Wilianto & Yulistiani, 2019). As a result, schizophrenic patients often have poor emotional regulation and are at risk of violent behaviors that can endanger themselves, others, and the environment (Nurhalimah, 2016) (Visser et al., 2018). Patients also experience decreased functional activity, including independent self-care (Cetin & Aylaz, 2018; Lopez-Navarro & Al-Halabi, 2022). If these problems are not immediately addressed, the patient can experience self-neglect and decreased health status (Yusuf et al., 2015). Hence, interventions for emotional control and ADL monitoring are essential aspects to consider in the treatment process.

The intervention innovation utilized in this study was an Android-based application called SI-DEPAPU.

This application consists of features that function to monitor emotional control and ADL, as well as exercise guidelines that can be conducted independently when the patient returns home. Each feature had pre and post-intervention screening menus, mindfulness practice guidelines, and documentation. Internet-based interventions facilitate user access and are flexible, enabling users to integrate these interventions into their daily lives. A previous study states that giving mindfulness by using technology positively is considered more attractive and creates positive feelings for its users (Chittaro & Vianello, 2016). Using technology is also a form of caring for nurses to understand the patient's moment-to-moment needs so that they can understand the patient as a whole (Locsin, 2015).

Spiritual mindfulness practices make patients aware of their condition with full acceptance and without judgment so that they can control negative affects and improve their awareness of positive affects (Dwidiyanti & Wiguna, 2018). This intervention consists of several steps provided every three days for two weeks, namely (1) moment of awareness, (2) self-evaluation, (3) body scan, 4) repentance and prayer, 5) relaxation and 6) independent health targets. This spiritual attention is carried out with full awareness, believing that every problem experienced by an individual comes from God and only God has the power to overcome it (Dwidiyanti et al., 2019; Munif et al., 2019). Through this practice, patients can accept past emotional events and focus on themselves, so that they can change dysfunctional behaviors in managing the disease (Zhang et al., 2021). Mindfulness stimulates changes in the brain structure, especially the cingulated anterior cortex, insula, hippocampus, temporoparietal intersection, and frontolimbic tissues, which are associated with increased self-efficacy and self-regulation that schizophrenic patients need to regulate and control emotions, feelings, and behaviors (Compare et al., 2014).

Mindfulness or having emotional awareness promotes emotional regulation and is considered a factor underlying the attainment of positive mental health and well-being (Eisenstadt et al., 2021; Gross, 2014). Mindful individuals can accept their conditions gracefully; they will do something with full awareness and try to improve their problem-solving ability (Dwidiyanti et al., 2019). The increased ADL of patients in this study showed positive results. This is because restoring functional status is one of the positive indicators in schizophrenic patients, which is related to self-awareness and empowerment (Yuksel & Yilmaz, 2021). This recovery relates to how the patient regains hope and determines goals, values, attitudes, responsibility, and independence (Dziwota et al., 2018).

CONCLUSION

The SI-DEPAPU intervention significantly affected anger control and ADL in schizophrenic patients. SI-DEPAPU could become a new technology to support nurses in helping schizophrenic patients improve their anger control and sustainable self-care.

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