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Original Research

Effect of Islamic Spiritual Mindfulness via Mobile Aplication (SI-DEPAPU) on Social Interaction in Isolated Patients

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ABSTRACT

Background: *Social interaction is an important indicator during the process of social isolation treatment. The less active social interaction could lead to other mental disorders such as hallucination, suicide risk, self-care deficit, and violence risk. The study investigated the effect of Islamic Spiritual Mindfulness on Discharged Patient Detection Information System (SI-DEPAPU) application to enhance the social interaction of schizophrenia patients with social isolation.*

Methods: *The research design used was quasi-experimental with a pre-post test method. The study used purposive sampling with 40 respondents divided into two groups of 20 people each. The instruments used were the Social Interaction Questionnaire and Behavioral Observation Sheet, which have been tested for validity and reliability. The statistical tests used included the paired t-test to assess social interaction within the group, the independent t-test to compare before the intervention, and the Mann-Whitney test for after the intervention.*

Results: *The research finding showed the difference in the social interaction of patients before and after the intervention between the intervention group and control group (p=<0.001; <0.05), of which the mean value of the intervention group (43.79) was more significant than the control group (15.21).*

Conclusion: *Based on the research results, it can be concluded that there was an increase in social interaction in patients after receiving Islamic spiritual mindfulness therapy. The SI-DEPAPU application can be implemented as a mental health nursing intervention to improve the social interaction of patients with schizophrenia who suffer from social isolation.*

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INTRODUCTION

Mental health is critically important for everyone, everywhere, and goes beyond the mere absence of a mental health condition. It is integral to well-being, enabling people to realize their full potential, show resilience amidst adversity, be productive across the various settings of daily life, form meaningful relationships and contribute to their communities. At the moment, mental health is a significant world health problem (World Health Organization, 2022).

Data from a psychiatric hospital showed that in 2021, the mental disorders patients were 3529 patients. As many as 45% experienced the risk of violent behavior 39.7% experienced hallucinations 13.6%, experienced social isolation 1.1% experienced a self-care deficit and 0.6% experienced low self-esteem. The data described that the inpatient patients were 972 (27%) patients in 2022.

Social isolation is a strong predictor of poor mental and physical health, social interaction disorders experienced by socially isolated patients have positive and negative impacts which are influenced by several aspects, namely affective, cognitive, and psychometric (Evans & Fisher, 2022). Affective aspects are correlated with a neurocognitive deficit which affects attention (Brandt et al., 2022), sadness, flat affect, emotion, loneliness, the feeling of being disrespected, and social problem. The cognitive aspect is correlated with the ability to communicate and focus during an interaction.

Meanwhile, the psychometric aspects are related to the general skill for interaction and socialization, such as greeting, smiling, making eye contact, also asking and answering questions. The negative impact will lead to hallucinations, low self-esteem, lack of self-confidence, broken social contacts, risk of suicide and risk of violent behavior and self-care deficits (Joshi et al., 2024; Algren et al., 2020). Interventions implemented on patients are Mindfulness is one of holistic nursing care, Mindfulness-Based Stress Reduction (MBSR) (Melnyk et al., 2020), generalist therapy and group activity therapy (Ni'mah et al., 2021;Selfia Merlinda, 2022).

Consultation with caregivers, using video analysis and dialogic methodology to improve communication (Canossa Dias et al., 2024). The Peer Intervention utilizes an employment model rather than a volunteer model, considering the need for ongoing contact with participants, the time commitment required, the greater ability to recruit peers with similar backgrounds, and the higher level of training required to meet the participants' needs (Kotwal et al., 2021). The previous research about the effect of mindfulness on social interaction by using Discharged social interaction Information systems (SI-DESIS) employed the mindfulness steps included in the application to train patients independence in improving social interaction.

There were two questionnaires to detect social interaction ability. The finding of the research was that the mindfulness therapy on SI-DESIS application was effective to improve the social interaction of schizophrenia patients. There were some limitations of the research using the SI-DESIS application, such as the unavailability of videos or photos and audiovisual about the steps of mindfulness therapy (Kurniasari et al., 2020).

The impact is that without a video feature, participants rely solely on text or simple processes. This can make understanding mindfulness steps less optimal, especially for respondents who learn more easily through visual media. Audiovisual media has been shown to be more interactive and able to increase user engagement.

The lack of a video feature can result in mindfulness exercises not being implemented correctly, potentially reducing the effectiveness of the intervention. This limitation also opens up opportunities for future research to develop more interactive

mobile applications by adding video, audio, and animation features to make the application more user-friendly and potentially improve intervention outcomes (Kurniasari et al., 2020). The researcher used technology-based intervention in the form of the SI-DEPAPU application, which involves Islamic spiritual mindfulness intervention.

The researcher used Islamic spiritual mindfulness to focus on patients' spiritual aspect, awareness, and self-acceptance through mindfulness (muhasabah) and getting closer to Allah. SI-DEPAPU application was designed to monitor the intervention improvement and better data storage. SI-DEPAPU application was completed with a photo and audiovisual of Islamic spiritual mindfulness steps. When one's relationship with Allah is good, the awareness of building a good relationship with others would also be stimulated. It would also help to cure the sickness.

Islamic spiritual mindfulness therapy could train people to care, focus on awareness and gratitude, and have positive thinking and enthusiasm to recover from the health problem (Rohmatun & Maryatun, 2022);Trisnawati et al., 2021). Spiritual care is an important aspect of the nursing process, although pharmacological and medical interventions remain important in managing the condition, the efficacy of Islamic spiritual therapy is also significant (Wisuda et al., 2024). This study aims to increase social interaction in schizophrenic patients with social isolation through Islamic Spiritual Mindfulness.

MATERIALS AND METHOD

This study uses a quasi-experimental research method that aims to analyze the effect of mindfulness on the social interaction abilities of socially isolated patients using the SI-DEPAPU mobile application at the Mental Hospital by comparing the initial measured scores (pre-test) with the final scores (post-test) in the intervention and control groups. The population in this study consisted of all patients diagnosed with schizophrenia who were targeted for intervention to improve social interaction through the SI-DEPAPU application. The sampling technique in this study used purposive sampling and uses the Cohen method which refers to power and effect size in previous studies.

A purposive sample is the one whose characteristics are defined for a purpose that is relevant to the study (Miller et al., 2020). The sample size significance in the previus study was at a power of 0.80 and this effect size was 26 (Robert-McComb et al., 2004). The sample of the research was 40 respondents divided into two groups, which were intervention and control groups, with inclusion and exclusion criteria.

Inclusion criteria are defined as the key features of the target population that the investigators will use to answer their research questions. Typical inclusion criteria include demographic, clinical, and geographic characteristics (Patino & Ferreira, 2018). In this research inclusion criteria as follows: (1) Patients with a main diagnosis of social isolation who have been screened through a social interaction questionnaire; (2) Patients aged between 45–80 years old; (3) Patients with calm and cooperative state of mind; (4) Muslim patients. The exclusion criteria were patients who went through ECT therapy. This research was conducted at one of the mental hospitals in Semarang city, Indonesia.

The research variables consist of independent variables and dependent variables. The independent variable in this study is The Effect of SI-DEPAPU Application. Dependent variables are Social Interaction with Social Isolation patients in schizophrenia patients

The instruments used Social Interaction Questionnaire and the Behavior Observation Sheet–which were tested for validity and reliability (Nyumirah, 2012). This questionnaire has been modified by (Kurniasari, 2019). The Social Interaction Questionnaire consists of cognitive and affective aspects and has a total of 12 questions, while the Behavior Observation Sheet consists of 6 questions with a scoring rubric of 18-36 for less active interaction, 37–54 for adequately active interaction, and 55–72 for active interaction.

The reliability test result on the Social Interaction questionnaire and behavior observation sheets stated that both instruments were reliable as the Cronbach Alpha value was > 0.60 (Kurniasari, 2019). This questionnaire has been tested for validity and reliability before use with Cronbach Alpha > 0.60. The control group was given interventions in accordance with existing hospital standards, namely general therapy or specialist advanced nursing actions in the form of Implementation Strategies (SP) and Social Group Activity Therapy (TAKS).

Before conducting the research, the researcher had conducted a mindfulness workshop with the head of the nursing department and nurses at Psychiatric Hospital. This research was assisted by hospital nurses when researchers needed assistance. The intervention used in this study is mindfulness with a spiritual approach through the SI-DEPAPU application for intervention gorup.

The intervention procedure consists of: the researcher gives informed consent, seeks consent from the respondent, prepares the patient, prepares a bed or chair, prepares a clean and comfortable room, instructs the patient to perform ablution first, arranges the patient's position as comfortable as possible, clicks on the mindfulness menu, the researcher can intervene with the patient by following the mindfulness steps that have been provided, after the intervention is complete a history of the intervention will appear and the intervention is given 4 times in 2 weeks for 25 minutes. The menu contained in the SI-DEPAPU application is population data, pre-test, post-test, intervention and documentation. The steps in operating and displaying the SI-DEPAPU application are as follows:

Patients' Demographic Data

Nurses entered information about patients, such as their name, age, gender, occupation, education, length of stay (in days), readmission history, and whether they were in the intervention or control group.

Pre-Test on Social Isolation Menu

This feature contained information about the pre-test questionnaire on social interaction distributed to the intervention and control groups (previously filled by the nurse). If the patients belong to the intervention group, the patient's data would be entered into the mindfulness menu for the intervention. However, if the patient belonged to the control group, the patient would automatically enter the post-test menu.

Islamic Spiritual Mindfulness Menu

This feature contains the procedure of conducting mindfulness intervention in the form of photos for each mindfulness stage using audiovisuals to help the nurse and patient implement the therapy. The procedures are: 1) The moment of realization to change by reciting *istighfar,* 2) Self-reflection, 3) Feel the physical and spiritual response (body scan) by feeling and sincerely accepting the pain, 4) Repentance, 5) Pray for mercy toward Allah and always recite *istighfar* and avoid the same mistake, 6)

Tawakkul, and 7) Relaxation from the body responses such as headache, vomiting, coughing, fever, nausea, etc. Mindfulness intervention was conducted in four meetings.

After the intervention, the nurse filled the patients' health self-target. Six independent patients joined the training in speaking and asking, focusing on communication, delivering and accepting critics from others, asking and giving an apology, self-introduction and greeting others, also smiling and keeping eye contact during the interaction with others.

Post-Test on Social Isolation Menu

This feature contains social interaction post-test questionnaire. The nurse administered a post-test to the intervention and control groups. The post-test questionnaire was to see the difference in social interaction between the two groups.

Documentation Menu

This feature contains a tool for nurses and researchers used to report the results of observations during the intervention process. In addition, this feature can play a role in providing information on barriers during intervention implementation.

Figure 1. SI-DEPAPU Application Menu

The statistical test used to assess the level of social interaction in the intervention and control groups was a paired t-test, as the data were normally distributed ($p > 0.05$). The level of social interaction before the intervention was normally distributed with a value of 0.09 ($p > 0.05$), and the level of social interaction after the intervention was not normally distributed with a value of 0.00 ($p < 0.05$). Therefore, the independent t-test

was used for the level of social interaction before the intervention, while the Mann-Whitney test was used for the level of social interaction after the intervention.

This research has undergone ethical review and has been deemed acceptable by the Ethics Committee based on the principles of the Declaration of Helsinki, including respect for human dignity, the welfare of participants, scientific validity, risk-benefit balance, protection of vulnerable groups, informed consent, and fairness in recruitment. The researcher submits an ethical test to and has been declared ethical by the Ethics Team. The certificate number is as follows Number: 420 / 9792.

RESULTS

Table. 1 Significan Diference of Demogrhapic Characteristic Between Intervention and Control Group (n = 40)

Variabel	Group				*p-value**
	Intervention (n = 20)		Control (n = 20)		
	n	%	n	%	
Sex					
Male	14	79.3	13	75.9	1.000[a]
Female	6	20.7	7	24.1	
Total	**20**	**100**	**20**	**100**	
Age					
Midle Age	12	88.0	10	90.0	
Elderly	3	5.4	5	5.0	0.888[b]
Old	5	6.6	5	5.0	
Total	**20**	**100**	**20**	**100**	
Education					
No School	1	3.4	1	3.4	
Elementary School	6	27.7	10	72.5	0.543[b]
Junior High School	4	20.6	5	12.5	
Senior High School	9	48.3	4	11.6	
Total	**20**	**100**	**20**	**100**	
Profession					
Work	20	100	13	51.7	0.283[a]
Does'nt work	0	0	7	48.3	
Total	**20**	**100**	**20**	**100**	
Frequency Relaps					
1-3 times	16	82.8	20	100	0.052[c]
4-6 times	4	17.2	0	0	
Total	**20**	**100**	**20**	**100**	

Note: n = number of observations; % = percentage of observations; [a]=Continuity Correction, [b]= Pearson Chi-square, [c]=Fisher exact

Table 1. of respondent characteristics explains that most patients in the intervention group were male, 79.3% in the intervention group, 75% in the control group. The majority of ages were in the middle age range of 45-55 years, 84.4% in the intervention group, 90% in the control group. Most of the high school education, 48.3%

in the intervention group, 72.5% in the control group. Most of the employment status, 100% in the intervention group, 51.7% in the control group. The majority of length of hospitalizations, 82.8% were unemployed, 100% in the control group.

The confounding variables of the two research groups after homogeneity testing using the Chi-square Crosstab test due to categorical scale data can be concluded that the variants of the variables of sex, age, education, occupation, and number of times treated are significantly homogeneous (p-value >0.05).

Table. 2 Distribution of Respondents Based on the Patient's Level of Social Isolation Before and After the SI-DEPAPU Intervention in the Intervention Group and Control Group (n=40)

Variable	Range	Intervention (n = 20)		Control (n = 20)	
		After n (%)	Before n (%)	After n (%)	Before n (%)
Social Interaction					
Active	18-36	0 (0)	13 (87)	0 (0)	0 (0)
Quite active	37-54	10 (50)	6 (13)	7 (13)	9 (35)
Less active	55-72	10 (50)	0 (0)	13 (87)	11 (65)
Total		**20 (100)**	**20 (100)**	**20 (100)**	**20 (100)**

Based on Table 2 above, the majority of respondents in the intervention group before being given the intervention were in the less active category in social interaction as many as 50%) respondents and after being given the intervention were at an active level in social interaction as many as 87% respondents. The majority of respondents in the control group before being given the intervention were less active, as many as 87.0% respondents and after being given the intervention were at less active 65.0% respondents.

Table. 3 Comparison of Mean Social Interaction Scores in Each Group (Before and After Intervention) (n=40)

Groups	MD	Before Intervention		Before Intervention		p-Value *
		Mean ± SD	Range (Min–Max)	Mean ± SD	Range (Min–Max)	
Intervention (n =20)	23.58	34.62 ± 5.29	24–46	58.21 ± 5.31	45 – 67	<0.001
Control (n = 20)	5.68	35.86 ± 4.63	25–43	41.76 ± 3.65	34 – 50	<0.001

Note: MD = Mean Different; SD = Standard Deviation; * The Paired t-test

The Kolmogorov-Smirnov normality test on the level of social interaction before the intervention showed that the data were normally distributed (p-value = 0.094; p-value > 0.05). Conversely, the Kolmogorov-Smirnov test on the social interaction level data after the intervention showed that the data was not normally distributed (p-value = 0.003; p-value < 0.05). Therefore, the analysis before the intervention used the independent t-test, while the analysis after the intervention used the Mann-Whitney test.

Table. 4 Effect of Islamic Spiritual Mindfulness via SI-DEPAPU on Social Interaction in Isolated Patients in Intervention and Control Group (n=40)

Variable		Intervention (n = 20)		Control (n = 20)		
		Mean ± SD	**Min-Max**	**Mean ± SD**	**Min-Max**	**p-Value**
Interaction Social	**Before**	34.62±5.29	24-46	35.86 ± 4.63	25-43	0.346[a]
		Mean Rank	**Sum Rank**	**Mean Rank**	**Sum Rank**	**p-Value**
	After	43.79	1270	15.21	441	<0.001[b]

Note: SD = Standard Deviation; [a]The Independent t-test; [b]The Mann-Whitney test

Based on Table 4, using the independent t-test, it can be concluded that there is no difference in the level of social interaction before intervention in the intervention group and control group (p-value = 0.346; p-value > 0.05). Based on Table 4, using the Mann Whitney test, it can be concluded that there is a difference in the level of social interaction after intervention with a value (p-value = <0.001; p-value < 0.05) with a mean rank value of the intervention group (43.79) greater than the mean rank of the control group (15.21). The results of the data analysis can be concluded that Islamic Spiritual Development through the Application of SI-DEPAPU is effective in Improving Social Interaction with social isolation patients.

DISCUSSION

The difference between the intervention and control groups was evident in the social interaction skills category. In the intervention group, the majority of respondents were in the less active and moderately active categories before the intervention, but after the intervention, the majority were in the active category. Meanwhile, in the control group, they were in the less active category, but there was improvement in the moderate category. The increase in social interaction in the control group was the result of interventions provided in accordance with hospital standards, such as social isolation implementation strategies and group activity therapy socialization taught by psychiatric hospital nurses. This is supported by previous research that respondents experienced a decrease in social isolation behavior after receiving TAKS.

Socially isolated patients who are less active in interacting are generally accompanied by decreased emotional control, decreased social behavior and motivation, and are characterized by negative cognitive abilities (Mosolov & Yaltonskaya, 2022). Cognitive aspects can affect processing, focus, executive function, learning or communication skills, and perception. Social interaction issues are also greatly influenced by behavioral aspects. The affective aspects that influence this are apathy, sad facial expressions, dull affects, and lack of attention (Cowman et al., 2021).

Behavioral aspects refer to the ability to interact and socialize in general, such as greeting, smiling, making eye contact, asking and answering questions. In this context, patients with social isolation tend to behave in isolation, withdrawn, and rejecting relationships with others (Lieberz et al., 2021). These three aspects relate to the negative aspects of relationships: social isolation, loneliness, and related concepts are determined by the presence or absence of desired contact or support from social relationships. The concept of relationship quality, including expressed emotions, and some conceptualizations of social capital also consider interpersonal relationships (such as

criticism or active communication engagement) that require social contact (Zhang & Dong, 2022;Taylor et al., 2023).

Mindfulness therapy can train individuals to be mindful, focused on awareness, gratitude, positive thinking, and enthusiasm about the desire to heal. Islamic spiritual mindfulness is a practice for individuals that emphasizes spiritual aspects by focusing on moments of awareness for change and reflection by drawing closer to God. Islamic spiritual mindfulness helps patients consciously understand that their conditions or experiences occur not by chance but by the will of God. Islamic spiritual mindfulness therapy can not only increase independence in interactions but can also increase spiritual independence in patients, which is supported by previous research, namely the results of this study show that spiritual mindfulness has an effect on the spiritual independence of patients (Cheung & Lau, 2021).

Intervention through the SI-DEPAPU application provides new opportunities for mental health nurses in supporting schizophrenia patients with social isolation problems. This application facilitates patients to practise Islamic spiritual mindfulness independently and continuously. Nurses act as facilitators in providing education on the use of the application, monitoring progress, and encouraging patients to remain consistent in their practice. This digital support not only enhances social interaction but also strengthens patients' spiritual independence. Thus, SI-DEPAPU can serve as an innovative technology-based intervention relevant to modern mental health nursing practice.

This study's limitations include data input through the SI-DEPAPU application requires a stable internet connection to avoid errors in data input, which can lead to data duplication and errors. Random sampling techniques cannot be used in sample selection in mental hospitals, as they can lead to data bias or dropout. Recommendations for further research include developing the SI-DEPAPU application with an offline system and using more diverse sampling techniques to make the research results more representative.

CONCLUSION

The results of the study indicate that an Islamic spiritual mindfulness intervention through SI-DEPAPU application is effective in improving social interaction in patients with social isolation. Before the intervention, most respondents tended to be passive in interacting; however, after the intervention, their social interaction skills increased and became more active. In addition to detecting social interaction problems, this application also has the potential to be used to monitor patients' social interaction levels more comprehensively. Thus, SI-DEPAPU is expected to support post-discharge patient monitoring, improve the quality of nursing interventions, and facilitate more systematic patient data storage.

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