



The effectiveness of mindfulness application "SI-SIWATA (Sistem Informasi Sehat Jiwa dengan Cinta) to increase the spirituality of schizophrenia patients: Experimental study

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ABSTRACT

Spirituality is an important aspect in human life and individuals with schizophrenia are no exception, where the problem of spirituality in schizophrenia patients can be handled with spiritual mindfulness psychotherapy which is currently starting to be developed based on an android application. The purpose of this study was to determine the effect of spiritual mindfulness interventions through the android application SI-SIWATA on the spirituality of schizophrenic patients. This research is a quasi-experimental study with a sampling technique using purposive sampling. The sample in this study was 46 schizophrenic patients divided into intervention and control groups. Spiritual mindfulness intervention was carried out six times and was carried out pre-test and post-test using the Daily Spiritual Experience Scale questionnaire and analyzed using paired sample t-test. Statistical test results show the p-value = 0,000 with α (0.05) it means that there is an influence of spiritual mindfulness interventions on the spirituality of schizophrenic patients. An increase in patient spirituality was related to the emphasis on the mindfulness intervention stage, namely the muhasabah (introspection) stage and the independent healthy target stage so, the patient can consciously understand the conditions experienced, accept the treatment process and perform the independent healthy target in worship. Spirituality independence is very important in helping patients growing faith in Allah SWT when undergoing the treatment process.

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Peningkatan spiritualitas pasien skizofrenia dengan mindfulness melalui aplikasi SI-SIWATA (Sistem Informasi Sehat Jiwa Dengan Cinta)

ABSTRAK

Spiritualitas merupakan aspek penting dalam kehidupan manusia, tidak terkecuali individu dengan skizofrenia dimana masalah spiritualitas pasien skizofrenia dapat ditangan dengan psikoterapi mindfulness spiritual yang saat ini mulai dikembangkan dengan berbasis aplikasi android. Tujuan penelitian ini untuk mengetahui pengaruh intervensi mindfulness spiritual melalui aplikasi android SI-SIWATA terhadap spiritualitas pasien skizofrenia. Penelitian ini merupakan penelitian quasi-eksperimental dengan tehnik pengambilan sampel menggunakan purposive sampling. Sampel pada penelitian ini berjumlah 46 pasien skizofrenia yang dibagi dalam kelompok intervensi dan kelompok kontrol. Intervensi mindfulness spiritual dilakukan selama enam kali dan dilakuakn pre-test dan post-test menggunakan kuesioner Daily Spiritual Experience Scale dan dianalisis

Kata kunci:

Spiritualitas

Skizofrenia

Mindfulness

Aplikasi android

Aplikasi SI-SIWATA

menggunakan paired sample t test. Hasil uji statistic menunjukkan nilai $p = 0,000$ dengan $\alpha (0,05)$ artinya ada pengaruh intervensi mindfulness spiritual terhadap spiritualitas pasien skizofrenia. Adanya peningkatan spiritualitas pasien berhubungan dengan penekanan tahapan intervensi mindfulness yaitu tahapan muhasabah dan tahap target sehat mandiri, sehingga pasien secara sadar mampu memahami kondisi yang dialami, menerima proses pengobatan dan melakukan target sehat mandiri dalam beribadah. Kemandirian spiritualitas sangat penting dalam membantu pasien menumbuhkan keyakinan kepada Allah SWT dalam menjalani proses perawatan.

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Introduction

Schizophrenia is a persistent brain disease that results in psychotic behavior, concrete thinking, and difficulties in processing information, interpersonal relationships and difficulty in solving problems. Schizophrenia patients experience positive symptoms and negative symptoms. Positive symptoms include hallucinations, delusions, speech and irregular behaviour. Then, the negative symptom was flat affect, apathy and social withdrawal (Sudeen & Sudart, 2007).

Individuals suffering from schizophrenia often experience negative views (stigma) from their family and environment (Dadang hawari, 2014). The impact of stigmatization can cause schizophrenia patients to experience social isolation, lack of life opportunities such as work and also social discrimination, which results can decrease the life quality of schizophrenia patients (Koutsouleris N et al, 2009). People with schizophrenia show more maladaptive coping changes that react emotionally. The use of *maladaptive* coping would have an impact on spiritual dissatisfaction and religious passivity (Ariyani S & Mamnu'ah, 2014).

Negative religious coping have a higher risk of suicide attempts because a person was only able to surrender for the situation experienced which can increase despair. Suicides also occur in 9% to 13% of clients with schizophrenia (Mohr S et al, 2006). In this case, the nurses have the responsibility of carrying out nursing care related to the provision of the intervention to the patients. Interventions performed in schizophrenic patients consist of pharmacological and non-pharmacological treatment. In non-pharmacological treatment usually done cognitive behavior, *family support*, environmental modification therapy, PACT (*Program for Assertive Community Treatment*) (William H & Simmons LA TP, 2015). Mindfulness therapy was a holistic therapy which useful in providing calmness, comfort, increasing the focus of awareness and helping in achieving the independence target (Dwidiyanti, M. 2018).

The research showed that spiritual mindfulness interventions can improve medication adherence in patients mental disorders. *Mindfulness* therapy can be a deliberate awareness therapy with full acceptance without judgment, awareness brings unexpected feelings and sensations with the aim of recognizing the experiences experienced and receiving them with spaciousness (Sari, Sri Padma & Dwidiyanti M. 2014)

Mindfulness therapy development was currently not only done directly to patients but has begun to be developed in the form of an android application (Ningsih H, 2018). The selection of Android as a system that helps in this intervention is due to the fact that almost 80% of Indonesian

smartphones are Android-based and the Indonesian people include the nurses spend approximately 5 hours in front of their cellphones. This is because cellphones can be carried anywhere and anywhere. Several *Android* applications on *mindfulness*-based nursing interventions have been developed in Indonesia such as the SI-BESUTA (Sistem Informasi Belajar Sukses dengan Cinta) android application to measure the stress *adjustment* level of nursing students (Ningsih H, 2018) and the SI-DESI (Sistem Informasi Deteksi Interaksi Sosial) to measure the social interaction of schizophrenic patients (Kurniasari, CI, 2019).

This study aims to determine the mindfulness effect on spirituality level in schizophrenic patients through the android application. SI-SIWATA (Sistem Informasi Sehat Jiwa dengan Cinta) is an *Android*-based spiritual *mindfulness* application design. SI-SIWATA application has several features such as patient identity, pre-test feature wherein this feature there is a DSES questionnaire so that nurses can measure the patient spirituality level before mindfulness intervention. There are steps in implementing mindfulness to patients and there is a daily spiritual patient where nurses can monitor the patients' daily spiritual activities. The post-test feature is the same as the pre-test where the nurse measures the patient spirituality level using the DSES questionnaire after the patient has performed a mindfulness intervention and documentation features as a progress note each time the patient is mindfulness intervened and monitored for the ability to worship so, the patient's condition is expected to be better and accelerate maintenance process

Method

This research is a quasi-experimental research with pretest-posttest with control group design. The sample of this study was schizophrenia patients in the inpatient room of Dr. Aminogondo Hutomo Psychiatric Hospital as many as 46 respondents were selected using a *purposive sampling* technique. Previous respondents had received an explanation regarding voluntary participation and signed *informed consent*. This research lasted for one month with the help of ten enumerators, where the enumerators in this study were inpatient nurses who had previously been given spiritual *mindfulness* training.

Participant

Respondents in this study were divided into two groups: 23 patients in the intervention group and 23 patients in the

control group. Respondents in this study were patients with a schizophrenia diagnosis, young adults to cooperative elderly (PANSS score 10), Muslims, who could read and write. The control and intervention groups differed based on inpatient rooms available at the hospital to avoid interactions during the research.

Procedure

The initial study began with the division of respondents into intervention and control groups. Then the two groups were done the *pre-tested to determine the spirituality level* by the researchers and enumerators using the DSES questionnaire contained in the pre-test feature on the SI-SIWATA android application. The *pre-test* results were a reference in providing spiritual *mindfulness* interventions. Spiritual *mindfulness* interventions are only given to intervention groups and carried out 6 times over 3 weeks. First meeting conducted *inform consent* and pre-test to patients, then conducted mindfulness interventions, second up to fifth meeting provided mindfulness interventions, evaluated the obstacles, the patient's ability to do mindfulness and evaluated the patient independence target in conducting worship spiritual activities. Then at sixth meeting was to evaluate the mindfulness ability and did the post-test measurements of patients' spirituality level by nurses.

The steps to do Islamic spiritual mindfulness by using the stages of *Tazkiyatun Nafs*, (Dwidiyanti M, 2019): 1) Intentions and *Muraqabah*, relax, believe in Allah SWT 2) muhasabah / self-introspection from mistakes that have been made, 3) repentance with pleading forgiveness to Allah SWT, 4) body scan by feeling the heart response, 5) praying confidently to Allah SWT and making healthy targets independently in worship spiritual activities. In the control group, only *pre-tests* and *post-test* and were not given spiritual mindfulness intervention. Post-tests were conducted after the intervention group received spiritual *mindfulness* for six times, then the data analysis process was carried out.

Steps to use the SI-SIWATA application:

1. Login using the username and password that has been registered through the admin



2. Select the patient identity feature then select add the patient to enter patient data



3. Return to the main menu then select the Pre-test feature which contains a 16-point questionnaire (DSES) to measure the spirituality level in intervention and control patients. After being filled out and submitting, the pre-test result will appear and can be seen in the pre-test documentation feature.



Kuisisioner

Seberapa sering anda merasakan adanya Allah dihati anda? **Pilih**

Saya merasakan suatu makna dengan seluruh kehidupan. **Pilih**

Selama beribadah seberapa sering anda merasa bahagia dan merasa masalah anda bisa hilang. **Pilih**

Apakah dengan beribadah anda merasa bisa lebih tabah dalam menghadapi masalah, seberapa sering? **Pilih**

Apakah dengan beribadah dengan beribadah anda merasa bisa lebih tabah dalam menghadapi masalah, seberapa sering. **Pilih**

Saya merasa nyaman dengan agama saya. **Pilih**

Saya merasa nyaman dengan... **Pilih**

Seberapa sering anda merasakan orang lain peduli dengan kondisi anda. **Pilih**

Seberapa sering anda bersyukur dengan ciptaan Allah. **Pilih**

Apakah anda merasa bersyukur dengan kondisi anda. **Pilih**

Apakah anda peduli dengan teman-teman disekitar anda. **Pilih**

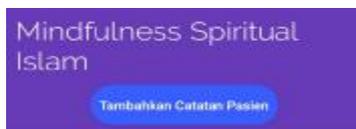
Ketika orang lain melakukan kesalahan, apakah anda bisa memeriea. **Pilih**

Saya berkeinginan untuk lebih dekat dalam beribadah kepada Allah. **Pilih**

Menurut perasaan Anda, seberapa dekat anda dengan Allah? **Pilih**

Submit

4. After the pre-test score is known, then return to the main menu and select the Mindfulness feature to do the 5 steps of mindfulness intervention to the patient, then document it by clicking on the add patients' note



Langkah-langkah mindfulness spiritual islam dengan menggunakan tahapan Tazkiyatun Nafs.

1. Niat dan Muraqabah dengan mindfulness,
 - Bapak/Ibu mari kita mulai dengan niat Rismillahinhamanirnihim hawha

5. After clicking add patients' note, then fill in all items according to the patient's condition after the mindfulness intervention, then submit

Riwayat Intervensi

A

Telah dilakukan intervensi sebanyak :
0 kali

Tanggal Intervensi Terakhir :
belum ada

Akun yang melakukan Intervensi terakhir :
belum ada

Daily Spiritual Pasien

Berwudhu : Pasien melaku...
Beristighfar : Pilih
Beribadah (sholat) : Pengetahuan y...
Membaca suratan pendek (ar'nos, al'ikhlas, al'falaq) : Pilih

Intervensi Selanjutnya

Catatan :

Submit

6. Select the documentation feature for viewing the patient's progress



Dokumentasi Pasien

ny. S

Intervensi ke : **1**

Tanggal : **29 Aug 2019**

Berwudhu : **Keyakinan bahwa kemampuan ini penting**

Beristighfar : **Pengetahuan yang dibutuhkan**

Beribadah (sholat) : **Keyakinan bahwa kemampuan ini penting**

Membaca suratan pendek : **Pengetahuan yang dibutuhkan**

Catatan : **S:- klien mengatakan senang bisa latihan
-klien mengatakan jarang sholat
O: klien masih belum bisa fokus,
A:klien butuh bimbingan dalam pengetahuan terkait latihan mindfulness dan kegiatan spiritual
P:-melakukan latihan mindfulness
- melakukan edukasi dan bimbingan dalam kegiatan ibadah**

Tenaga Medis : **Feri**

HASIL PRE **HASIL POST**

7. Post-tets can be done if the intervention has been carried out for 6 times then submitted and recorded in the documentation feature



Instrument

The measuring instrument used is the *Daily Spiritual Experience Scale* (DSES) questionnaire that has been tested for validity using *face validity* conducted by 20 respondents as samples with characteristics according to the research inclusion criteria. Reliability test using the alpha method (α) Cronbach was conducted for 20 respondents with α

results > 0.850 so, this questionnaire can be stated reliable. The DSES questionnaire was designed to measure spirituality level and spirituality belief in one's life. The spirituality scale was designed to find out how one's perception of God's presence in daily life. This scale illustrates how the relationship of spirituality beliefs with daily life events. DSES consists of 15 positive statement items.

Data Analysis

The analysis in this study was a univariate analysis using frequency distribution and bivariate analysis to determine the effect of mindfulness interventions on the spirituality level of schizophrenic patients through the application of SI-SIWATA using *paired sample t-test*. This research has obtained ethical permission from Dr.Aminogondo Hutomo Semarang Psychiatric Hospital with number: 420/1/02609.

Results and Discussion

All 46 respondents participated in this study. Analysis result of respondent characteristic as follows:

Table 1
 Research respondents characteristics

Variable	Group		p
	Intervention (n(%)) (Mean±SD)	Control (n(%)) (Mean±SD)	
Age	31,57±10,03	27,26±7,75	0,307
Gender			
Male	15 (65,2)	16 (69,6)	0,753
Female	8 (34,8)	7 (30,4)	
Last Education			
Elementary	13 (56,5)	11 (47,8)	0,808
Middle School	8 (34,8)	9 (39,1)	
High School	2 (8,7)	3 (13,0)	
Profession			
Work	11 (47,8)	9 (39,1)	0,552
Does Not Work	12 (52,2)	14 (60,9)	
Closeness to Allah			
As close as possible	1 (4,3)	0	0,197
Very close	6(26,1)	17(73,9)	
A little close	16 (69,6)	6(26,1)	

In table 1 it was concluded that the age variants variables are significantly homogeneous ($p = 0.307 > 0.05$), gender ($p = 0.753$), education ($p = 0.808$), profession ($p = 0.552$) and closeness to Allah ($p = 0.197$), there were no

differences in respondent characteristics between the intervention and control groups.

Table 2
 The spirituality level of schizophrenia patients on pre-test and post-test carried out Spiritual Mindfulness Intervention through the SI-SIWATA android application

	Mean Difference	Pre-test	Post-test	p
		Mean±SD	Mean±SD	
Intervention	20,83	51,83±10,21	72,65±9,67	0,001
control	1,61	49,09±10,32	50,70±11,96	0,310

Based on table 2 using *paired sample t-test* was obtained the different levels result of patient spirituality towards the

intervention group before and after being given *mindfulness* intervention ($p= 0,000 < 0,05$), while the control group can

be concluded there was no change in the spirituality level ($p = 0.310 > 0.05$).

This showed that spiritual *mindfulness* intervention through the SI-SIWATA android application significantly influences spirituality in schizophrenia patients in the intervention group. The spirituality level in schizophrenia patients has increased, seen from an increase in the average of spirituality level at before and after the *mindfulness* intervention was 20.83.

Research (Weinstein et al, 2009) on *mindfulness* online interventions prove a positive impact on stress, anxiety, depression and well-being. *Mindfulness* training through digital can have the same impact as training with direct assistance. This was supported by research (Emerik APP Van, 2017) stating that mindfulness training provided through smartphone applications can improve life quality ($p = 0.003$), well-being ($p = 0.002$), independent *mindfulness* ability ($p = 0.000$), reduce depressive symptoms ($p = 0.001$). *Mindfulness* training through SI-BESUTA android application in reducing stress ($p = 0.000$) (Ningsih H, 2018).

Mindfulness therapy is able to provide a relaxing effect on the body, calm, comfortable, make individuals closer to Allah, realize mistakes that have been made, interpret the pain that is being experienced, make individuals believe that Allah will provide healing. Then being able to make healthy targets independently in improving spirituality such as increasing worship, praying, dhikr, being patient and forgiving according to the spiritual *mindfulness* concept that is in the SI-SIWATA application. Spiritual *mindfulness* interventions in improving the spirituality of schizophrenic patients consist of five stages of *Tazkiyatun Nafs*; 1) Intentions and *Muraqabah*, relax, faith in Allah SWT 2) muhasabah / self-introspection of mistakes that have been made, 3) repentance with asking for forgiveness from Allah SWT, 4) body scan with feeling the heart response, 5) prayer with confidence to Allah SWT and make independent

healthy targets in spiritual worship activities (Dwidiyanti M, 2019).

The focus in improving spirituality was the introspection stages and the independent healthy target in worship. According to the research (Dwidiyanti, M. 2018) which showed that 6 respondents (54%) of 11 respondents undertook spiritual activities independently after 7 days of undergoing spiritual *mindfulness* therapy with p -value = 0.024 ($\alpha < 0.05$) where the respondent means that there was an influence of spiritual mindfulness therapy on spiritual independence and significantly increases medication adherence in schizophrenic patients with a value ($p = 0.023$).

The next important stage was the independent healthy target which is a step to train patients being able to create independent targets in improving spirituality. The spirituality independence in schizophrenic patients was very important in fostering confidence when undergoing the recovery process, controlling anger and awareness in forgiving past incidents (Sari, Sri Padma & Dwidiyanti M, 2014).

Conclusions and Recommendations

Mindfulness intervention using the SI-SIWATA android application which is carried out for six times can help patients in improving spirituality by growing faith in Allah SWT when undergoing the treatment process. The technology role can help nurses to care more about patients and make it easier to document nursing care result. SI-SIWATA application is used by nurses in hospitals and this application must be connected to the internet when it will be used. This research needs to be developed by conducting research on patients diagnosed with schizophrenia by sampling using a randomized control trial and factors that affect the spirituality level of patients such as age and parenting need to be added.

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