

# Mindfulness-Based Asmaul Husna and changes in general adaptive function response among schizophrenia: A Quasi-experimental study

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## Abstract

**Background:** Poor functional capacity is one of the factors that increase the risk of recurrence of positive and negative symptoms in schizophrenia. Mindfulness is a treatment potentially help patients become fully accepting of their conditions and conscious of it, allowing them to regulate unpleasant emotions and increase awareness of positive emotions.

**Purpose:** This study aimed to investigate effect of mindfulness-based Asmaul Husna on the overall adaptive functioning of individuals with schizophrenia.

**Methods:** This quasi-experiment times series study involved 36 participants selected with simple random sampling. The inclusion criteria of participants were adult Muslim with schizophrenia who had a PANSS-EC score <10, mild symptoms, risk of violent behavior. Participants with severe symptoms and complications from other diseases were excluded. Mindfulness-based Asmaul Husna consisted of Musyhadah-witnessing, tassawur-imagination, tafakkur-contemplation, tadabbur-reflection, and muhasabah-self-introspection was given to each participant over five days. A modified-Global Assessment Functioning (m-GAF) scale used to measure participants' general adaptive functional responses before and after intervention including follow-up at the first and second month after the intervention.

**Results:** There was a significant increase of the m-GAF score ( $p < 0.001$ ) and a chi-square value of 177.2 after the implementation of mindfulness-based Asmaul Husna intervention. The highest mean score difference was observed at the first and second follow-ups, conducted one and two months after the interventions. The effect size calculated using Kendall's  $W_a$  indicates a significant effect (0.821).

**Conclusion:** The study suggests there is a positive effect of the mindfulness-based Asmaul Husna intervention on adaptive functioning of people with schizophrenia.

**Keywords:** Asmaul Husna; mindfulness; m-GAF; schizophrenia

## Introduction

Around 24 million people in the world, or one in 300 people (0.32%), globally suffer from schizophrenia. For adults, this rate is one in 222 (0.4%) (WHO, 2022). In Indonesia, the estimated prevalence of people who have schizophrenia is 1.8 per 1,000 population; schizophrenia usually occurs in adulthood or productive age between 18 and 35 years (Ministry of Health Republic Indonesia, 2019).

People with schizophrenia have positive symptoms that can be easily identified and that are not seen in healthy people (Kanchanatawan et al.,

2018). These include hallucinations, delusions, and abnormal motor behavior with fluctuating degrees of severity (Ueda et al., 2018). Negative symptoms are hard to identify and are associated with a high morbidity rate. The most common negative symptoms included avolition, alogia, anhedonia, and diminished emotional expression (Van Den Oord et al., 2006).

Cognitive symptoms are the last classification, including disorders of speech, thinking, and/or attention, that ultimately affect a person's ability to communicate (Keepers et al., 2021) and impair the individual's communication skills by disturbing his speech and attention (Rasool et al., 2020), all of these symptoms will worsen the general adaptive functioning response.

The primary challenge encountered by individuals diagnosed with schizophrenia is their diminished capacity to perform Activities of Daily Living (ADL). Poor functional capacity is one of the factors that increase the risk of recurrence of positive and negative symptoms in schizophrenia. Caring for schizophrenic patients requires nurses who have a high capacity for understanding, empathy, and non-stigmatization of mental illness (Irfan et al., 2018).

Beyond these signs, nurses must be able to identify patients who are anxious, hopeless, confused, and who may even be contemplating suicide. Nurses must be able to recognize that people with schizophrenia have difficulty distinguishing between reality, delusions, and hallucinations because everything seems true to them. Because of all these factors, efforts from nurses are needed to understand schizophrenia and provide appropriate holistic interventions to prevent recurrence or violent behavior (Arafa et al., 2017).

Health behavior theory is used to understand and predict health behavior, and a number of behavior modification approaches have grown in popularity (Salmoirago-Blotcher et al., 2013). A growing body of research shows that mindfulness-based treatments can enhance physical and mental health outcomes by reducing unhealthy behaviors, encouraging the self-management of chronic illnesses, and altering unhealthy habits (Schuman-Olivier et al., 2020a).

Mindfulness can stimulate the anterior cingulate cortex, insula, hippocampus, temporoparietal intersection, and front-limbic network so that changes in brain structures occur that are relevant to the regulation and control of emotions, feelings, and behavior (Shonin & Van Gordon, 2016). Previous research has demonstrated the effectiveness of mindfulness interventions. Mindfulness-based psychoeducation groups are associated with reduced psychotic symptoms and re-hospitalizations, as well as improved functioning and understanding of the condition and its treatment (Chien et al., 2017). Mindfulness-based stress reduction (MBSR) has been found to increase hope, psychological well-being, and functional recovery in patients with schizophrenia (Özdemir & Kavak Budak, 2022).

Another type of mindfulness is Islamic spiritual mindfulness, which refers to a spiritual state in which a person is aware of Allah's (name of God for Muslims) awareness over their soul, their innermost thoughts and feelings, and their actions, and this also increases self-efficacy (Dwidiyanti et al., 2021). Islamic spiritual means *aqidah* or a person's belief in Allah as their God; happiness and peace will be felt when they practice good activities and believe in Allah. When believers face psychological problems or difficult situations, remembering Allah gives them peace, and *aqidah* influences their spiritual well-being (Hasan & Tanjung, 2018).

The systematic reviews and meta-analysis of mindfulness interventions for schizophrenia show that mindfulness affects the reduction of both positive and negative symptoms overall, with small to moderate effects in pretest-posttest comparisons (Hodann-Caudevilla et al., 2020). Most of the mindfulness techniques that have been developed are based on Buddhist cultural values (Frisk, 2012). It is hoped that all of these outcomes can improve the ability of individuals with schizophrenia to carry out daily functions through adaptive functional capacity (Schuman-Olivier et al., 2020b).

Meanwhile, Isgandarova has developed mindfulness-based *muraqaba* as meditation, an Islamic-oriented cognitive behavioral therapy tool, but said that although *muraqaba* might not be effective for all mental health issues, she suggests a possible value of *muraqaba* for treating symptomatic anxiety, depression, and pain (Isgandarova, 2019a). However, her studies have not explained how is the effect of this mindfulness on the general response of adaptive functioning in schizophrenic patients with positive symptoms, especially mindfulness with spiritual approaches. The application of mindfulness with Islamic values needs more in-depth research, especially in Indonesia, the country with the largest Muslim population in the world (Ministry of Health Republic Indonesia, 2014) and which believes in the existence of God; mental health includes spiritual health (Mastuki, 2020).

In this research, mindfulness-based *Asmaul Husna* (the name of Allah), according to an Islamic perspective, mindfulness comes from the term *muraqaba*, which means "to look at and observe" (Isgandarova, 2019b). Knowing that Allah is constantly watching over us is the basis of *muraqaba*, which makes us more concerned about our actions, thoughts, feelings, and moods and that is the realization of the highest quality of character, spiritual perfection. According to a correct interpretation of the beautiful names that accurately reflect Allah's flawless knowledge, *muraqaba* is essentially the fulfillment of worshipping Him. Ibn Al-Qayyim closes his chapter on *muraqaba* by stating that the name of Allah (*Asmaul Husna*) as the Watcher (*Al-Raqib*), the Guardian (*Al-Hafith*), the Knowing (*Al-'Alim*), the Hearing (*Al-Sami'*), and the Seeing (*Al-Basir*) should be the focus of the *muraqaba*. Therefore, whoever learns these names and is committed to living up to

them will obtain muraqaba (Parrott, 2017).

Mindfulness with integrated Islamic spirituality is practiced with a high level of awareness because Muslims believe that Allah (God) is the source of all problems and that only He has the power to solve them. According to this study, mindfulness-based on Asmaul Husna (Mimasna) refers to awareness of

the soul, thoughts, and actions based on awareness of the presence of Allah through His names and their meanings. Therefore, the purpose of this study was to find out how mindfulness-based on Asmaul Husna (Mimasna) affects the general response of adaptive functioning among Muslims with schizophrenia in controlling the risk of violent behavior. This

**Table 1. Mindfulness-based on Asmaul Husna (Mimasna) Intervention procedures**

Steps	Activities	Day	Time
Musyadah (witnessing)	ablution dhuha prayer sholawat for the prophet Muhammad, peace be upon him Guide participant to say Asmaul Husna," yaa Raqib, yaa Al-Hafith), yaa 'Alim), yaa Sami', yaa Al-Basir", accompanied by sayings, "O Lord, giver of healing, heal my body, my soul and my mind" guide the participants to identify wandering thoughts, situations encountered when these thoughts and feelings occur guide participants to recognize their mistakes or sins guide participants for say istighfar 3 times	Day-1	30minute
Tasawur (imagination)	ablution dhuha prayer sholawat for the prophet Muhammad peace be upon him say istighfar 3 times say Asmaul Husna: Allah is the creator (yaa..khaliq) while doing body scanning, to help patients imagine the integrity of their body and being grateful for a healthy body and soul guide for deep breathing and say, "...Alhamdulillah..."	Day-2	30minute
Tafakkur (contemplation)	ablution dhuha prayer sholawat for the prophet Muhammad peace be upon him focuses on Allah's creation, namely the universe, galaxy-solar-system-planet-our-earth guide for deep breathing and say, "...Allahu akbar..." guide participants to believe that Allah is the power and helper	Day-3	30minute
Tadabbur (reflection)	Ablution dhuha prayer sholawat for the prophet Muhammad peace be upon him guide the informant to read the story of forgiveness, discuss the sentence that made the most impression, and the positive attitude of the story guide to identify daily activities that are empowering or disempowering	Day-4	45minute
Muhasabah (self-introspection)	Ablution dhuha prayer sholawat for the prophet Muhammad, peace be upon him guide the participants to read Quran, Surah An-Naas, Al-Ikhlâs and al-Falaq three times each with hands placed in front of their face, then rub all over the body Assist the participants in identifying potential obstacles to implementing the positive behavioral commitments discussed on days 3 and 4. Assist the participants make steps that they must take if they have difficulty committing positive behavior to reduce the risk of violence (note: involve the participants' social support) Encourage the participants to independently practice the muraqabah Asmaul Husna technique again, similarly to how it was done on the first to third days. Closed the session and make sure the termination phase is correct, namely reflecting on the mindfulness carried out and making adjustments for future repetition.	Day-5	45minute

**Table 2 Correlation between characteristics of the participants with m-GAF score**

Characteristics	f (%)	m-GAF <sup>c</sup> (p-value)
<b>Age<sup>a</sup></b>		
25 to 44 years (young age)	16 (44.4%)	0.844
>44-60 years (middle age)	19 (52.8%)	
60-75 years (elderly)	1 (2.8%)	
<b>Gender</b>		
male	25 (69.4%)	0.879
female	11 (30.6%)	
<b>length of stay</b>		
< 1 years	8 (22.2%)	0.268
>1 to 3 years	17 (47.2%)	
>3 years	11 (30.6%)	
<b>Nursing diagnosis<sup>b</sup></b>		
Hallucination	14 (38.9%)	0.038
Risk of violence	22 (61.1%)	
<b>Mental disorder diagnoses</b>		
Hebephrenic schizophrenia	1 (2.8%)	0.085
Paranoid schizophrenia	25 (69.4%)	
Unspecified schizophrenia	10 (27.8%)	
<b>Employment history</b>		
Worked	15(41.7%)	0.755
Never worked	21(58.3%)	
<b>Education history</b>		
Elementary	7(19.4%)	0.980
Junior high school	15(41.7%)	
Senior high school	6(16.7%)	
College	8(22.2%)	
<b>M-GAF Score</b>		
Some Serious Symptoms	1(3%)	
Moderate Symptom	11(31%)	
Some Persistent Mild Symptoms	15(42%)	
Some Transient Mild Symptoms	9(25%)	

**Table 3. Friedman Test for mindfulness based on asmaul husna (Mimasna) to m-GAF**

m-GAF	N	Mean	SD	Min	Max	Mean Rank	$\chi^2$	p
skor_1st day (baseline)	36	65.11	7.222	50	76	1.22	177.2	<0.001
skor_2nd day	36	67.08	6.725	55	78	2.03		
skor_3rd day	36	69.08	6.389	58	80	3.22		
skor_4th day	36	71.22	6.410	60	80	4.38		
skor_5th day	36	72.42	6.570	60	82	5.49		
skor_1st follow-up*	36	72.86	6.081	60	81	5.83		
skor_2nd follow-up**	36	72.94	6.463	60	83	5.83		

\*1 month \*\* 2 month df 6; CI: 95% ( 2 table 12.592) Kendall's Wa (0.821)

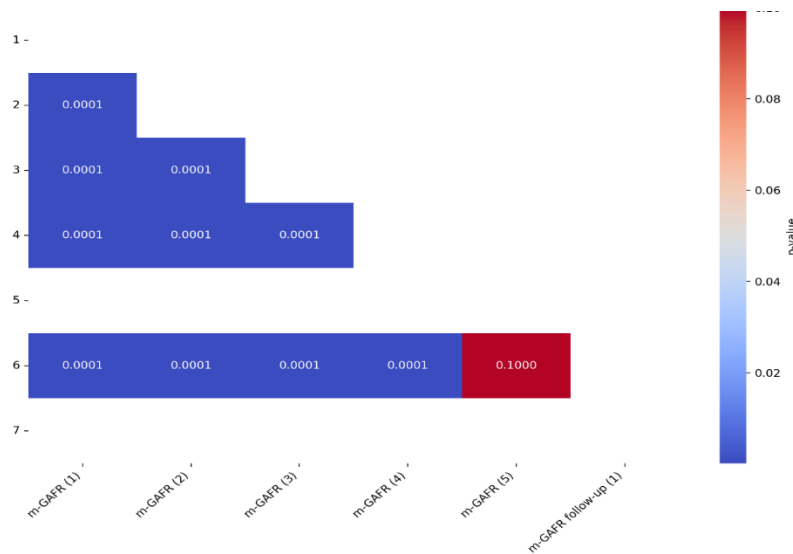


Figure 1. Pairwise Comparisons (Durbin-Conover)

research is expected to make a contribution to nurses in increasing general adaptive responses by controlling aggressive behavior among Muslims with schizophrenia.

## Materials and Methods

### Design

This research was conducted with a quantitative approach. The type of research used was a quasi-experiment times series design, which took place on May - July 2023.

### Setting and sample

This study was conducted in a mental disorder rehabilitation center in West Java, Indonesia. This center was established in 2000, with 45-50 inpatients/year; 90% of patients were Muslims and diagnosed with schizophrenia. Mindfulness therapy has never been done in this center.

The inclusion criteria for this study were adult Muslims with schizophrenia who had a PANSS-EC (Positive and Negative Syndrome Scale - Excited Component) score <10, mild symptoms, and risk of violent behavior. Mild symptoms suggest that the disorder affects the individual but is not significantly debilitated by it. They may still be capable of managing daily responsibilities with some support and are often more responsive to treatment than those with moderate or severe symptoms (Harvey & Rosenthal, 2018; Müller & Riedmüller, 2017).

Participants with severe symptoms and complications from other diseases were excluded. The number of samples was calculated using G-Power version 3.1.92. The F test was used with an error probability of 0.05, power (1- $\beta$ ) of 0.95, and effect size ( $f^2$ ) of 0.25; the estimated minimum sample size was 25 participants, and to anticipate dropping out the number of participants was increased to 40 % (Adhikari, 2021; Diggle &

Taylor-Robinson, 2019) and the total sample was 36 participants. The participants were recruited through simple random sampling. The eligible patients were randomized using computer software. Facilitated by the ward nurse, the researchers approached the selected patients, provided research information, and asked their willingness to participate in this study. Patients who were willing to participate were then asked to sign the informed consent form.

### Variable

The independent variable is mindfulness-based asmaul husna, and the dependent variable is changes in general adaptive function response.

### Instruments and data collections

The assessment was based on observation while nurses were with the participants. A modified General Adaptive Scale (GAS), namely the Modified Global Assessment of Functioning (m-GAF) scale, was used with an ICC value of 0.81 (Hall, 1995; Mossbarger, 2005) by incorporating more criteria and new scoring guidelines into the structure of the original GAF instrument, which is an instrument for measuring general adaptive function responses and was used as an instrument in this research. These are the scoring guidelines for m-GAF: 01-10 (in persistent danger of severely hurting self or others); 11-20 (in some danger of hurting self or others); 21-30 (inability to function in almost all areas); 31-40 (major impairment in several areas of functioning); 41-50 (some serious symptoms or impairment in functioning); 51-60 (moderate symptom); 61-70 (some persistent mild symptoms); 71-80 (some transient mild symptoms); 81-90 (absent or minimal symptoms); Data collection was carried out by measuring m-GAF scores before the intervention (first day) and after each intervention (days 2, 3, 4 and 5) then follow-up was measured in the first and second month after the Mimasna intervention.

## Intervention

Mindfulness-based intervention procedures based on Asmaul Husna (Mimasna) were adopted and modified from Isgandarova's (2019). The expert judgment (psychologists) was applied to validate the content and steps of the Mimasna procedures. The intervention consisted of Musyahadah (witnessing), Tassawur (imagination), Tafakkur (contemplation), Tadabbur (reflection), and Muhasabah (self-introspection). At each step, the patients were requested to pronounce Asmaul Husna (Allah's name and characteristics) and pray for healing based on their current state. The detailed description of activities can be seen in Table 1 below.

A team of six trained researchers executed the intervention. Participants were divided into six groups, with a maximum of six participants in each group. This approach promotes rich, focused intervention and manageable discussions, providing high-quality qualitative data. The assessment of the m-GAF was conducted by six nurses serving in the mental rehabilitation center.

## Data analysis

The Shapiro-Wilk test is used to determine the distribution of the data; the results showed ( $p < 0,001$ ) that the data distribution is not normal, so the statistical test used is the Friedman test, with effect size using Kendall's  $W_a$  test with value  $0.1 - < 0.3$  is a minimum effect,  $0.3$  to  $< 0.5$  is a moderate effect, and  $\geq 0.50$  is a significant effect (Houser, 2018).

## Ethical consideration

The study was carried out under an ethics permit issued by the Ethics Committee of Universitas Aisyiyah Bandung (407/KEP. 01/UNISA-BANDUNG/V/2023). Patients who agreed to participate signed consent forms and were assured of anonymity and confidentiality to protect their privacy and ensure their willingness to participate in the study. Participants were informed that they could leave the study and that their autonomy would be protected as soon as the informed consent form was signed. Justice was ensured by applying random sampling, distributing the same interventions to all participants, providing assistance as needed, and providing mementos. Participants received gifts as compensation for their time and contribution to this study.

## Results

The study participants' characteristics, including age, gender, and length of stay, are detailed in Table 2, along with their correlation to the m-GAF scores. The majority were middle-aged men, with an average age of 44 years. They had been at the mental disorder rehabilitation center for 1 to 3 years, with nursing diagnoses of hallucinations and a prevalence of paranoid schizophrenia. Many participants in the study had not worked and had

completed junior high school. According to the m-GAF questionnaire, most fell into the adaptive function category with persistent mild symptoms, meaning ongoing impairments in daily activities, social interactions, or occupational functioning.

The only characteristic significantly related to the m-GAF score was the nursing diagnosis ( $p$ -value 0.038).

Table 3 below shows that the Mimasna intervention affected the increase in the m-GAF score with a  $p$ -value  $< 0.001$  and  $\chi^2_{2177.2} (> 12.59)$ ; the difference mean score was highest on the first and second follow-up or two months after interventions. The effect size using Kendall's Washows large effect (0.821)

Meanwhile, table 4 below shows a  $p$ -value less than 0.05, which typically indicates a statistically significant difference. In this study, the values  $< .001$  suggest very strong evidence against the null hypothesis, indicating significant differences between the groups compared. This heatmap visually represents the  $p$ -values for pairwise comparisons, with color intensity indicating the significance level. Cooler colors indicate higher significance (lower  $p$ -values), whereas warmer colors indicate lower significance (higher  $p$ -values). The diagonal is excluded as it would compare each group with itself.

## Discussion

The study discovered that the mindfulness-based Asmaul Husna (Mimasna) intervention notably enhanced the modified Global Assessment of Functioning (m-GAF) scores in people with schizophrenia. This indicates that Mimasna effectively improves the functional abilities of participants, possibly by promoting mindfulness and spiritual well-being. The combination of mindfulness techniques with the recitation of Asmaul Husna may help stabilize the mind, reduce symptoms like hallucinations, and improve emotional regulation.

The effectiveness of the intervention was observed across participants who were predominantly middle-aged men with a history of severe psychiatric symptoms, including paranoia and hallucinations. Despite their challenging characteristics, such as long-term institutionalization and unemployment, the participants showed marked improvements in their functional outcomes. This indicates that Mimasna may be particularly beneficial for individuals with deep-rooted psychological and emotional challenges related to schizophrenia.

Additionally, the study highlighted a correlation between nursing diagnoses and improvements in m-GAF scores after the intervention, suggesting that Mimasna can address both persistent and transient symptoms of schizophrenia. These findings align with previous research on mindfulness interventions and their positive impact on mental health, emphasizing the potential of Mimasna as a therapeutic tool for enhancing the overall well-being

of individuals with schizophrenia (Budiarto et al., 2022; Stuart et al., 2016).

Another study has shown that, after mindfulness intervention, the intervention group had more excellent mean scores in both hope and recovery (Yulina Astuti et al., 2020). Similarly, another study reported that mindfulness-based stress reduction training was more successful in raising the level of hope, psychological well-being, and functional recovery in people with schizophrenia (Özdemir & Kavak Budak, 2022).

A survey by Khoury found that pre-post analyses indicated that mindfulness therapies moderately reduced negative symptoms (Khoury et al., 2013). Likewise, another study reported that specific evaluations of positive and negative symptoms, hallucinatory distress, or functioning/disability were not shown to be significantly affected (Louise et al., 2018). This difference may occur due to various interventions provided and differences in the involved participants' characteristics.

In this study, mindfulness-based Asmaul Husna guides participants to awareness (musyahadah-witnessing), attention (tassawur-imagination), present-focus (tafakkur-contemplation and tadabbur-reflection), and acceptance (muhasabah/self-introspection, for better thoughts, feeling and behavior). The former supports adaptive self-regulation and desired health outcomes, which can be explained by mindfulness and de-automatization. It demonstrates how four aspects of mindfulness, awareness, attention, present focus, and acceptance, could trigger four major mental processes to improve self-regulation (Kang et al., 2012).

Observing one's innermost self (al-sir) to become aware of what is concealed by every thought and word is known as muraqabah (Parrott, 2017); Parrott's statement is in line with the definition of mindfulness known so far, namely the awareness that comes by paying attention to the present moment in a nonjudgmental manner (Schuman-Olivier et al., 2020a).

Participants in this research are instructed to believe that prayer, effort, and resignation are forms of the healing process under the fundamental notion of mindfulness with an Islamic spiritual approach. This spiritual belief will develop mindfulness and equanimity, which is a dispositional disposition or state of mind that is dispassionate toward all experiences and objects, regardless of how those objects may be interpreted as pleasant, painful, or neutral (Schuman-Olivier et al., 2020a).

According to Ibn al-Qayyim, maintaining internal muraqabah entails controlling one's thoughts, intentions, and actions: the truth of a pure heart (al-qalb al-Salim). Building one's intellect and body through contemplative practice is essential for overcoming destructive emotions or character flaws that haunt people (Munsoor & Sa'ari, 2017); mindfulness can deepen spirituality, which acts as a protective barrier against feelings of isolation or

be overtaken by adversity (Shonin & Van Gordon, 2016).

In this study, on the fourth day of mindfulness activities, there was a bibliotherapy session where participants were guided through reading to draw conclusions about positive behavior obtained from reading with the theme of forgiveness. In this session, participants were also guided to identify daily activities that are beneficial or not for their social function.

The benefits of this session are based on the benefits of bibliotherapy as healing (Canty, 2017) and mindfulness, which enables deliberate introspection, promotes reconsideration, decreases automatic inference processing, improves cognitive control, facilitates metacognitive insight, and prevents thought suppression and distortion (Cao et al., 2022).

Mindfulness can enhance the prefrontal cortex, respiratory sinus arrhythmia (RSA), and anterior cingulate cortex (ACC), resulting in mental recovery (Cao et al., 2022; Chen et al., 2015; Smith et al., 2018). The cingulated anterior cortex, insula, hippocampus, temporoparietal intersection, and front-limbic tissue are particularly associated with changes in brain structure that are related to increasing self-efficacy and self-regulation needed by schizophrenic patients to regulate and control emotions, feelings, and behavior (Shonin & Van Gordon, 2016); thus, the general response of the adaptive function of people with mental disorders improved.

## Implications

The implications of the results of this research for nursing practice show that mindfulness interventions for individuals with schizophrenia are very important in providing holistic care. Mindfulness interventions can play an important role in the treatment of individuals with schizophrenia, especially in reducing negative and positive symptoms so that functional capacity increases. This is important to prevent relapse and improve the quality of life of individuals with schizophrenia.

Additionally, nursing educators should emphasize the importance of tailoring mindfulness interventions to the specific needs and abilities of individuals with schizophrenia. This personalized treatment approach is essential, as not all patients will respond the same to mindfulness techniques. Nurses must have experience in assessing each patient's readiness and capacity to engage in mindfulness practices. In addition, nurses are also required to be able to collaborate with mental health professionals to integrate mindfulness into a comprehensive treatment plan (Siagian et al., 2021). Ultimately, mindfulness interventions can be a valuable tool in the nursing toolkit in providing effective and compassionate care to individuals with schizophrenia.

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### Strength and Limitation

The study's strength lies in its robust and valuable nature. It was conducted with rigorous ethical considerations, had a well-defined sample and setting, and a carefully structured and validated intervention, including the training for intervention providers conducted before the study. Robust data analysis and significant findings demonstrated the effectiveness of the mindfulness-based Asmaul Husna intervention.

However, this study also holds some limitations, such as the absence of a control group and reliance on self-reported measures, which introduce potential biases and make it difficult to attribute changes solely to the intervention. Additionally, the cultural specificity of the Asmaul Husna intervention and the limited scope of outcome measures suggest that further research is needed to validate and extend these findings to broader populations.

### Conclusion

The study found that a mindfulness-based Asmaul Husna program could help improve overall functioning. Future research with a more rigorous research design and a focus on the long-term effects of this intervention is warranted, including identifying its specific components and effectiveness compared to other mindfulness-based interventions. Expanding the research to include a comparative analysis could offer a broader understanding of its unique benefits and contribute to integrating culturally sensitive interventions into mental health care for Muslim patients with schizophrenia.

### Declaration of Interest

The authors declare that they have no competing interests that could influence the interpretation of the results or the presentation of the information in this manuscript.

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### Data Availability

The data and materials supporting the findings of this study are available upon request. Please contact [inggriane.puspita@unisa-bandung.ac.id] for access.

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