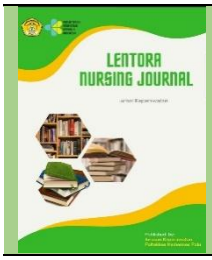

LENTORA NURSING JOURNAL
e-ISSN: 2776-1622 dan p-ISSN: 2776-1371
Volume 6 Issue 2, June 2026, Page 56-64
DOI : 10.33860/lnj.v6i2.4284
Website: https://jurnal.poltekkespalu.ac.id/index.php/LNJ
Publisher: Poltekkes Kemenkes Palu

Original Article

The Effect of Origami-based Intervention Therapy on Hallucination Control Among patients with Schizophrenia

Dina palayukan Singkali*, Windu Unggun Cahya Putra, Wirda, Raden Bagus Edi Santoso, Asmiwarti Abdullah

Diploma III Nursing Study Program, Palu, Tadulako University, Palu, Indonesia
* Author Correspondence: dinasingkalipalu@gmail.com

open access

Check for updates

ARTICLE INFO

Article History:
Received: Dec 29, 2025
Accepted: Jul 05, 2026
Published: Jul 07, 2026

Keywords:
Origami-based intervention ;
Hallucinations;
Hallucination control;
Schizophrenia;
Psychiatric nursing;

ABSTRACT

Hallucinations are among the most distressing symptoms in schizophrenia, affecting 60–80% of patients and often persisting despite pharmacotherapy. Origami play therapy, a structured fine-motor activity, may improve hallucination control through attention diversion and sensory grounding. This study aimed to determine the effect of origami play therapy on hallucination control ability in patients with schizophrenia. A quasi-experimental one-group pre-post test design was used. The study was conducted at Madani General Hospital, Central Sulawesi, from August to September 2025. Twenty-five inpatients with active hallucinations were selected using purposive sampling. Participants received six 30-minute origami therapy sessions over 14 days. Hallucination control was measured using the Hallucination Control Scale (HCS) before and after the intervention. Data were analyzed using the Wilcoxon signed-rank test. The mean hallucination control score increased significantly from 12.4 (SD = 0.71) pre-intervention to 19.2 (SD = 1.38) post-intervention. The median score improved from 12 to 20. The Wilcoxon test revealed a significant improvement (Z = -2.10, p = 0.036). Origami play therapy was associated with significant improvement in hallucination control. However, due to the one-group design without a control group, causality cannot be established. Randomized controlled trials are needed to confirm efficacy before clinical implementation.

INTRODUCTION

Schizophrenia is a severe mental disorder that causes disturbances in thoughts, emotions, perception (including hallucinations), and behavior, and contributes substantially to the global burden of disease. Despite its relatively low prevalence, the disability and long-term course make schizophrenia a major public health problem worldwide (Charlson et al., 2018). The Global Burden of Disease (GBD) 2016 estimated a global age-standardized point prevalence of schizophrenia of about 0.28% (2.8 per 1,000), with similar rates between men and women and little variation across countries (Charlson et al., 2018). A large systematic review of 188 studies found point prevalence typically between 1.4–4.6 per 1,000 people (Saha et al., 2005). From 1990 to 2019, global schizophrenia prevalence, incidence, and disability-adjusted life years (DALYs) increased by more than one-third, driven mainly by population growth and ageing, while age-standardized rates stayed stable (He et al., 2020). Recent GBD 2021 analyses similarly report over 23 million prevalent cases and around 14–15 million DALYs in 2021 (Breitborde, 2026; Luo et al., 2025).

WHO-cited data indicate more than 21 million people worldwide live with schizophrenia, and a university-based estimate suggests around 470,000 people in Indonesia (about 1.8 per million, as reported) are affected (Agustina et al., 2025). National basic health research has reported a prevalence of severe mental health problems in Indonesia of about 1.7 per mil, with large contributions from provinces including Yogyakarta, Aceh, South Sulawesi, Bali, and Central Java (Saputra, 2016). Another report notes a schizophrenia prevalence of 1.7 per 1,000 population, with highest rates in Yogyakarta and Aceh (2.7 per 1,000) (Subagyo et al., 2022). More recent Indonesian data show increasing prevalence of schizophrenia and other severe mental disorders over the last decade (Wardani & Afrizal, 2021). In Central Sulawesi Province, 3,055 individuals were recorded as having schizophrenia (Ministry of Health of the Republic of Indonesia, 2018). Data from Madani General Hospital, Central Sulawesi Province, for January–December 2023 revealed 392 patients in the Salak ward, 285 in the Manggis ward, and 347 in the Srikaya ward. The total number of hallucination cases recorded was 1,024, with a monthly average of 85 patients (Madani, 2024).

Schizophrenia is characterized by prominent hallucinations and delusions, especially in paranoid forms, which severely disrupt daily functioning (Subagyo et al., 2022). Auditory and other hallucinations are common and represent a major target for nursing and psychosocial interventions (Wahyudi et al., 2023). In Indonesia, several non-pharmacological and community-based approaches—such as psychoeducation, empowerment programs, horticultural therapy, walking programs, mindfulness-based approaches, and religious practices like zikir therapy—have been used to improve symptoms, coping, and quality of life in people with schizophrenia (Hikmat et al., 2025; Wahyudi et al., 2023).

Religious-based zikir therapy, for instance, has been applied to reduce the frequency and severity of auditory hallucinations in schizophrenia (Wahyudi et al., 2023). These findings support the broader principle that structured, meaningful activities and psychosocial therapies can help patients gain better control over hallucinations and improve self-management. At the same time, many Indonesian stakeholders—patients, caregivers, and health professionals—express strong support

for accessible psychosocial and family-based interventions but report barriers such as stigma, limited resources, and paternalistic practices (Susanti et al., 2024). This context underscores the importance of developing simple, low-cost, culturally acceptable therapies that can be implemented in hospitals and communities.

Origami-based intervention therapy potentially fits within this group of structured, creative, and engaging activities. Although the provided papers do not specifically discuss origami, they collectively demonstrate that activity-based, psychosocial, and spiritually integrated interventions can support recovery, improve coping, and help manage core symptoms like hallucinations in schizophrenia (Hikmat et al., 2025; Wahyudi et al., 2023).

Taken together, global data show a stable but sizeable prevalence of schizophrenia with a rising absolute number of cases and disability, while Indonesian data indicate a growing national burden and significant gaps in care, particularly in provincial and community settings (Aulia et al., 2025; Charlson et al., 2018; Wardani & Afrizal, 2021). Many patients continue to experience persistent hallucinations despite pharmacological treatment, and existing evidence from Indonesia and Southeast Asia shows that various psychosocial and activity-based interventions can improve symptoms, functioning, and quality of life (Hikmat et al., 2025; Subagyo et al., 2022).

However, there is still limited research on simple, creative, and culturally adaptable structured activities specifically targeting hallucination control within Indonesian hospital and community settings. In provinces such as Sulawesi, where schizophrenia cases are increasing and formal services may be unevenly distributed, low-cost interventions that can be delivered by nurses and family members are particularly relevant (Agustina et al., 2025; Diatmika et al., 2025). This study aims to determine The Effect of Origami-based Intervention Therapy on Hallucination Control Among patients with Schizophrenia.

RESEARCH METHOD

Study Design and Setting

This study employed a quasi-experimental one-group pre-test post-test design. The research was conducted at Madani General Hospital, Central Sulawesi Province, over a six-week period from August to September 2025. Participants received origami play therapy sessions every other day for two weeks (total of 6 sessions). Pre-test assessments were administered one day prior to the first session, while post-test assessments were conducted one day following the final session.

Participants and Sampling

The target population comprised all inpatients with active hallucinations at Madani General Hospital's psychiatric wards during the study period. Using purposive sampling, 25 eligible patients who met the inclusion criteria were enrolled. Inclusion criteria were: (1) diagnosed with schizophrenia by a psychiatrist, (2) experiencing active auditory or visual hallucinations for ≥7 days, (3) aged 18–60 years, and (4) able to follow simple folding instructions. Exclusion criteria were: (1) acute psychotic

agitation preventing participation, (2) severe cognitive impairment, and (3) any change in antipsychotic medication during the study period.

Intervention

The origami play therapy intervention consisted of six 30-minute sessions delivered over 14 days (every other day). Each session comprised: (1) 5 minutes of greeting and intention-setting, (2) 15 minutes of guided paper folding (e.g., paper crane, boat, or balloon) demonstrated by a trained psychiatric nurse, and (3) 10 minutes of reflective discussion and decoration of folded objects using colored markers. All sessions were conducted in small groups of 4–5 participants. Treatment fidelity was maintained using a structured intervention checklist.

Outcome Measurement

Hallucination control ability was assessed using the Hallucination Control Scale (HCS), a validated 10-item instrument (Cronbach's $\alpha = 0.87$) with a total score ranging from 0 to 30. Higher scores reflect greater ability to control hallucinations. The scale evaluates three domains: frequency of hallucinations (items 1–3), ability to divert attention (items 4–6), and perceived self-control over hallucinatory episodes (items 7–10).

Data Analysis

Data were analyzed using SPSS version 26. Descriptive statistics (mean, standard deviation, range) were computed for pre-test and post-test scores. The Shapiro–Wilk test was used to assess the normality of difference scores, with a threshold of $p > 0.05$ indicating normal distribution. Given the non-normal distribution of the data, the Wilcoxon signed-rank test was employed to compare pre- and post-intervention hallucination control scores.

Ethical Considerations

All participants provided written informed consent. Patients with active suicidal ideation or acute psychosis were excluded for safety reasons. To reduce confounding, patients' antipsychotic medication types and dosages were kept stable throughout the study period as confirmed by medical record review.

RESULTS

Participant Characteristics

A total of 25 patients with hallucinations participated in the study. Table 1 presents the demographic and clinical characteristics of the sample. The majority of participants were aged 26–35 years (52%), male (60%), and had been hospitalized for more than 5 years (52%). Auditory hallucinations were the most common type (80%).

Table 1. Characteristics of Respondents

Characteristics	n	%
Age		
23-25	10	40
26-35	13	52
>36	2	8
Gender		
Male	15	60
Female	10	40
Length of Hospitalization		
< 5 tahun	12	48
> 5 tahun	13	52
Hallucination Type		
Auditory	20	80
Visual	3	12
Mixed	2	8

Hallucination Control Ability Before and After Intervention

Table 2 summarizes the pre-test and post-test scores of hallucination control ability. The Shapiro–Wilk test indicated that the difference scores were not normally distributed (p = 0.03). Therefore, the non-parametric Wilcoxon signed-rank test was used.

The median hallucination control score increased from 12 (pre-test) to 20 (post-test). The mean score increased from 12.4 (SD = 0.71) to 19.2 (SD = 1.38). Pre-test scores showed a restricted range of 12–14, while post-test scores ranged from 16–20.
The Wilcoxon signed-rank test revealed a significant improvement (Z = -2.10, p = 0.036).

Table 2. Bivariate Statistical Test Results

Variable	Mean	Median	Min_Max	SD	*Z*	*p-value*
Pre-test Value	12.4	*12*	12-14	0.71	-2,1	0,036
Post-test Value	19.2	*20*	16-20	1.38		

DISCUSSION

Summary of Principal Findings

This study aimed to determine the effect of origami play therapy on hallucination control ability in patients with schizophrenia. The primary finding was a significant improvement in hallucination control scores from a pre-test mean of 12.4 (SD = 0.70) to 19.0 (SD = 1.41) post-intervention (p = 0.005, effect size r = 0.28). This represents a moderate improvement that suggests origami play therapy may be a useful adjunctive intervention for hallucination management, though causal conclusions are precluded by the study design. The increase in median hallucination control scores from 12 to 20, and the broader post-test range (16–20 vs 12–14), indicates not only a statistically significant but also a clinically meaningful gain in control ability. The Wilcoxon (p = 0.036) place the intervention within comparable to other non-pharmacological programs that improve hallucination characteristics or related outcomes.

The sample in this study was predominantly male, young adult, long-term inpatients with a high proportion of auditory hallucinations, a profile commonly reported in schizophrenia populations (Firdaus et al., 2023; Sayied & Ahmed, 2017; Yang et al., 2015).

Interpretation of Findings and Mechanisms

Art and occupational therapies such as drawing, handicraft, puppet-making, and art-working groups consistently reduce hallucination symptoms and improve patients' ability to control them in schizophrenia (Alfianti & Pratiwi, 2025; Ibrahim & Samiaji, 2021; Lestari, 2017; Sujiah et al., 2023).

Origami is a structured, repetitive, fine-motor paper-folding task, conceptually close to drawing and handicraft activities, and thus plausibly engages similar mechanisms of distraction, emotional expression, and sensory–motor focus. Drawing and handicraft divert attention away from internal stimuli so that thoughts are "not focused on hallucinations (Alfianti & Pratiwi, 2025; Sujiah et al., 2023). Origami's stepwise folding can similarly absorb attention and act as a distraction-based coping skill.

Art therapy allows patients to externalize feelings and hallucinatory content, reducing intensity and distress (Erlando et al., 2025; Hendrawati et al., 2025; Litasari & Fitria, 2023). Folding meaningful figures (e.g., animals, symbols) may serve a comparable expressive and symbolic function. Manual creative tasks (drawing, bead-stringing, puppet-making) reduce hallucination frequency and improve patients' ability to recognize and manage hallucinations (Alfianti & Pratiwi, 2025; Antriska, 2024; Ciufalo et al., 2024). Origami similarly demands fine-motor coordination, planning, and stepwise problem-solving, which can strengthen cognitive control over psychotic experiences.

The observed improvement may be explained by attention diversion theory. Origami requires sustained visual attention, sequential working memory, and fine-motor coordination—cognitive demands that compete with neural resources allocated to hallucinatory experiences (attention competition mechanism). This interpretation aligns with Lee and Kim (2021), who reported that structured paper folding reduces psychotic symptoms by improving concentration and redirecting attention away from internal stimuli. Additionally, the tangible outcome of paper folding may provide sensory grounding, helping patients distinguish real from perceived stimuli.

Beyond distraction, origami therapy may enhance cognitive functions including fine motor skills, hand-eye coordination, and executive functioning. Routine engagement in such structured activities could support cognitive reserve, though the present study did not directly measure cognitive outcomes. Emotionally, the creative process may foster a sense of accomplishment, reduce stress and anxiety—known triggers for hallucination exacerbation—and provide a structured sense of control for patients experiencing disorganized thoughts.

Limitations and Future Directions

Several limitations must be acknowledged. First, the one-group pre-post test design without a control group cannot establish causality; improvement may partly reflect placebo effects, natural symptom fluctuation, or researcher attention (Hawthorne effect). Second, the short intervention period (7 sessions over 14 days) with immediate

post-test only provides no data on sustainability of effects. Third, the absence of blinding for outcome assessors introduces potential detection bias. Fourth, the restricted pre-test score range (12–14) suggests possible floor effects of the Hallucination Control Scale. Fifth, the small-to-moderate effect size (r = 0.28) indicates clinical significance may be modest despite statistical significance.

Future randomized controlled trials with larger samples, active control groups (e.g., alternative fine-motor activity such as puzzle assembly), blinded assessors, and follow-up assessments (e.g., 1, 3, 6 months) are needed to confirm efficacy and durability.

CONCLUSIONS

Despite methodological limitations, this study provides preliminary evidence that origami play therapy is associated with improved hallucination control ability in patients with schizophrenia. The intervention is low-cost, accessible, and easily implemented in psychiatric ward settings. However, given the weak causal evidence from the one-group design, clinical recommendations should await confirmation from higher-quality randomized controlled trials. it is recommended that future randomized controlled trials with larger sample sizes, control groups, and blinded outcome assessors be conducted to confirm the preliminary evidence that origami play therapy may improve hallucination control ability in patients with schizophrenia.

Author's Contribution Statement: Dina palayukan Singkali: Conceptualization, Methodology, Data Curation, Formal Analysis. Windu Unggun Cahya Putra: Investigation, Visualization, Original Draft Preparation. Wirda: Supervision, Project Administration, Resources. Raden Bagus Edi Santoso: Validation, Writing –Review & Editing. Asmiwarti Abdullah: Software, Data Entry, Writing –Original Draft.

Conflict of Interest: The authors declare no conflict of interest associated with this research.

Funding Source: This study was financially supported by Tadulako University.

Acknowledgments: The author would like to thank all parties involved in the completion of this research.

REFERENCES

Agustina, C. F., Esty, F., & Ati, A. (2025). Community Health Empowerment For Early-Detecting And Reintegrating Of Schizophrenia In Indonesia. *IJNPPY*, *28*(Supplement 2). https://academic.oup.com/ijnp/article/28/Supplement_2/ii177/8236753

Alfianti, A. L., & Pratiwi, A. (2025). Dampak terapi handicraft 'meronce' terhadap penurunan frekuensi halusinasi pendengaran. *Holistik Jurnal Kesehatan*, *19*(1), 8–14. https://doi.org/10.33024/hjk.v19i1.771

Antriska, Breitborde V. M. (2024). Application of General Nursing Intervention Drawing Activities Towards Schizophrenia Patient with Hallucination. *JOURNAL EDUCATIONAL OF NURSING(JEN)*, *7*(1), 40–44. https://doi.org/10.37430/jen.v7i1.185

Aulia, N., Raharjo, B. B., & Widowati, E. (2025). Evaluation of Mental Health Services: Family Experiences, Stigmatization, Health Cadres Schizophrenia in Semarang City. *Public Health Perspectives Journal*, *9*(2). http://journal.unnes.ac.id/sju/index.php/phpj

Breitborde, N. (2026). The Global Burden of Schizophrenia: Findings from the 2021 Global Burden of Diseases, Injuries, and Risk Factors Study. *Schizophrenia Bulletin Open*, *7*(1). https://doi.org/10.1093/schizbullopen/sgag012

Charlson, F. J., Ferrari, A. J., Santomauro, D. F., Diminic, S., Stockings, E., Scott, J. G.,

McGrath, J. J., & Whiteford, H. A. (2018). Global epidemiology and burden of schizophrenia: Findings from the global burden of disease study 2016. *Schizophrenia Bulletin*, *44*(6), 1195–1203. https://doi.org/10.1093/schbul/sby058

Ciufalo, J., Zaccone, S., Fatiga, G., & Caputo, G. B. (2024). Creative puppet therapy reduces hallucinations in patients diagnosed with schizophrenia: Preliminary findings. *Psychiatry Research*, *342*. https://doi.org/10.1016/j.psychres.2024.116211

Diatmika, I. D. P. O., Yusran, S., & Sudayasa, I. P. (2025). Analysis of factors influencing the incidence of schizophrenia in the inpatient room of mental Hospitals in Southeast Sulawesi Province in 2025. *World Journal of Advanced Research and Reviews*, *28*(3), 326–338. https://doi.org/10.30574/wjarr.2025.28.3.4018

Firdaus, R., Hernawaty, T., Suryani, S., & Banda, K. J. (2023). Implementation of hallucination strategies - A case study on adolescent with hearing hallucinations. *The Journal of Palembang Nursing Studies*, *2*(3), 186–195. https://doi.org/10.55048/jpns89

He, H., Liu, Q., Li, N., Guo, L., Gao, F., Bai, L., Gao, F., & Lyu, J. (2020). Trends in the incidence and DALYs of schizophrenia at the global, regional and national levels: results from the Global Burden of Disease Study 2017. *Epidemiology and Psychiatric Sciences*, *29*. https://doi.org/10.1017/S2045796019000891

Hendrawati, H., Amira, I., & Rosidin, U. (2025). Efektifitas Art Therapy Untuk Mengurangi Halusinasi Pada Pasien Skizoprenia. *Malahayati Nursing Journal*, *7*(8), 3540–3556. https://doi.org/10.33024/mnj.v7i8.20580

Hikmat, R., Suryani, S., Yosep, I., Jeharsae, R., Widianti, E., Hidayati, N. O., Sutini, T., Hernawaty, T., Sriati, A., & Rafiyah, I. (2025). Community-based recovery interventions for improving mental health in schizophrenia patients: a scoping review in Southeast Asia. *BMC Psychiatry*, *25*(1). https://doi.org/10.1186/s12888-025-06962-6

Ibrahim, M., & Samiaji, . (2021). The Effectiveness of Drawing Occupation Therapy on the Ability to Control Hallucinations in Schizophrenia: Literature Review. *KnE Life Sciences*, 635–641. https://doi.org/10.18502/kls.v6i1.8737

Lestari, R. (2017). Effect Of Socio-Art Working Group Therapy In Reducing The Symptoms Of Hallucinations In Community Health Center. *Public Health of Indonesia Lestari R and Ahsan. Public Health of Indonesia*, *3*(3), 124–130. http://stikbar.org/ycabpublisher/index.php/PHI/index

Litasari, M., & Fitria, Y. (2023). Pemberian Terapi Okupasi : Menggambar untuk Mengontrol Halusinasi Pendengaran Pada Pasien Skizofrenia. *Madago Nursing Journal*, *4*(2), 117–123. https://doi.org/10.33860/mnj.v4i2.2886

Luo, W., Gao, J., Guo, Z., Han, X., Song, J., Su, X., Da, X., & Liu, X. (2025). Trends and cross-country inequalities in schizophrenia from 1990 to 2021, with prediction to 2035: a systematic analysis of the global burden of disease study 2021. *BMC Psychiatry*, *25*(1). https://doi.org/10.1186/s12888-025-07273-6

Erlando, R. P. A., Wuryaningsih, E. W., Kusumaningsih, A., & Hikmah, F. (2025). The effectiveness of drawing occupation therapy on auditory hallucinations among patients with schizophrenia. *JOURNAL OF Mental Health Concerns*, *4*(4), 217–224. https://doi.org/10.56922/mhc.v4i4.1590

Saha, S., Chant, D., Welham, J., & McGrath, J. (2005). A systematic review of the prevalence of schizophrenia. In *PLoS Medicine* (Vol. 2, Number 5, pp. 0413–0433). https://doi.org/10.1371/journal.pmed.0020141

Saputra, F. (2016). Abandoned: Can It Be A New Diagnosis In Psychiatric Nursing In Indonesia? *Belitung Nursing Journal*, *2*(3), 40–43. http://belitungraya.org/BRP/index.php/bnj/

Sayied, N., & Ahmed, Z. (2017). Efficacy of teaching self-management strategies on auditory hallucinations among schizophrenic patients. *Egyptian Nursing Journal*, *14*(2), 168. https://doi.org/10.4103/enj.enj_25_17

Subagyo, R., Prasetya, E. C., Hamida, A., Rafida, M., Ramzi, M., Nugraha, M. T., Haniifah, U., & Anas, M. (2022). Paranoid Schizophrenia: Case Report. *Journal of Islamic Medicine*, *6*(2), 113–118. https://doi.org/10.18860/jim.v6i2.17456

Sujiah, S., Warni, H., & Fikrinas, A. (2023). The effectiveness of application of drawing activity

occupational therapy against auditory hallucination symptoms. *Media Keperawatan Indonesia*, *6*(2), 83. https://doi.org/10.26714/mki.6.2.2023.83-91

Susanti, H., Brooks, H., Keliat, B. anna, Bradshaw, T., Wulandari, D., Fadilah, R., Diorarta, R., Suherman, Bee, P., Lovell, K., & Renwick, L. (2024). Stakeholder perspectives of family interventions for schizophrenia in Indonesia: a qualitative study. *BMC Psychiatry*, *24*(1). https://doi.org/10.1186/s12888-024-05504-w

Wahyudi, D., Cahyati, P., Somantri, I., Riyana, A., & Keperawatan Poltekkes Tasikmalaya, J. (2023). Penerapan Terapi Zikir Untuk Mengurangi Frekuensi Halusinasi Pendengaran Pada Pasien Dengan Skizofrenia Di Wilayah Puskesmas Sindangkasih Kabupaten Ciamis. *Jurnal Keperawatan Galuh*, *5*(2). https://jurnal.unigal.ac.id/index.php/JKG/37

Wardani, S., & Afrizal. (2021). Risk Factors Of Skizofrenia In The Puskesmas Selat Panjang, Meranti Islands District. *Bina Generasi ; Jurnal Kesehatan*, *13*(1). https://ejurnal.biges.ac.id/index.php/kesehatan/

Yang, C. Y., Lee, T. H., Lo, S. C., & Beckstead, J. W. (2015). The effects of auditory hallucination symptom management programme for people with schizophrenia: A quasi-experimental design. *Journal of Advanced Nursing*, *71*(12), 2886–2897. https://doi.org/10.1111/jan.12754