



Journal of Mental Health Nursing

P-ISSN: 3081-0566
E-ISSN: 3081-0574
www.thementajournal.com
JMHN 2025; 2(1): 32-37
Received: 17-02-2025
Accepted: 20-03-2025

Dr. Amina El-Sayed
Department of Psychiatric
Nursing, Faculty of Nursing,
Cairo University, Cairo, Egypt

Virtual healing: Effectiveness of nurse-led telepsychiatry consultations in rural populations

Amina El-Sayed

DOI: <https://www.doi.org/10.33545/30810566.2025.v2.i1.A.12>

Abstract

Background: Mental health disorders represent a major global health burden, with rural populations disproportionately affected due to barriers such as limited specialist availability, stigma, and geographical isolation. Telepsychiatry has emerged as a promising solution to expand access to mental health care. Nurse-led telepsychiatry models, in particular, offer a cost-effective and scalable approach to delivering quality psychiatric services in underserved settings.

Objective: This study aimed to evaluate the effectiveness of nurse-led telepsychiatry consultations in improving clinical outcomes, treatment adherence, and patient satisfaction among rural populations.

Methods: A quasi-experimental study was conducted among 200 adults diagnosed with depressive or anxiety disorders, allocated to either an intervention group receiving nurse-led telepsychiatry consultations or a control group receiving standard referral-based care. Structured psychiatric assessments were conducted at baseline, 3 months, and 6 months using standardized tools. Symptom severity, adherence rates, and satisfaction scores were analyzed using descriptive and inferential statistics.

Results: The intervention group demonstrated significantly greater reductions in PHQ-9 and GAD-7 scores over six months compared to the control group. Adherence to scheduled consultations was notably higher in the intervention arm, with a larger proportion of participants completing $\geq 75\%$ of sessions. Patient satisfaction scores were also significantly higher for telepsychiatry recipients. Effect sizes indicated clinically meaningful improvements, supporting the effectiveness of nurse-led telepsychiatry in symptom reduction and service engagement.

Conclusion: Nurse-led telepsychiatry is a feasible, effective, and patient-centered approach to improving mental health outcomes in rural communities. By leveraging nursing expertise and telehealth technologies, this model enhances accessibility, continuity of care, and patient satisfaction. Practical recommendations include expanding nurse training, strengthening telepsychiatry infrastructure, integrating services into primary care, and implementing community engagement strategies to reduce stigma. This approach holds strong potential for bridging mental health treatment gaps and advancing equitable healthcare delivery in underserved areas.

Keywords: Telepsychiatry, nurse-led interventions, rural health, mental health, depression, anxiety, phq-9, gad-7, treatment adherence, patient satisfaction, primary care integration, digital health, mental health services, stigma reduction, healthcare accessibility

Introduction

Mental health disorders represent one of the most pressing public health concerns worldwide, contributing significantly to morbidity, disability, and reduced quality of life. Rural populations face unique barriers in accessing timely and quality mental health services, including limited availability of mental health professionals, geographical isolation, cultural stigma, and transportation challenges ^[1-3]. Telepsychiatry defined as the use of telecommunications technology to provide psychiatric assessment and care has emerged as a viable strategy to bridge this gap. The integration of nurse-led telepsychiatry models offers a cost-effective and scalable solution, particularly in resource-constrained settings ^[4-6]. Psychiatric nurses play a crucial role in initial assessment, psychoeducation, adherence support, and follow-up care, thereby enhancing accessibility and continuity of treatment for underserved populations ^[7-9].

Despite increasing recognition of telepsychiatry's potential, its practical effectiveness in rural settings remains underexplored, especially in low-resource communities where mental health needs are high but service delivery mechanisms are weak. Studies have demonstrated

Corresponding Author:
Dr. Amina El-Sayed
Department of Psychiatric
Nursing, Faculty of Nursing,
Cairo University, Cairo, Egypt

that nurse-led interventions can significantly improve mental health outcomes, patient satisfaction, and adherence rates in both primary care and psychiatric settings^[10-12]. However, gaps persist in evaluating how these models perform specifically in rural areas and their capacity to address issues such as delayed diagnosis, stigma reduction, and treatment engagement. This gap underscores the need for rigorous evidence to support scaling up telepsychiatry as part of national mental health programs^[13-14].

Therefore, the present study aims to evaluate the effectiveness of nurse-led telepsychiatry consultations in improving access, patient outcomes, and satisfaction among rural populations. The primary objective is to assess clinical improvement in patients receiving nurse-led telepsychiatry care. Secondary objectives include evaluating patient satisfaction, treatment adherence, and reduction in symptom severity over time. The hypothesis is that nurse-led telepsychiatry consultations will lead to significant improvements in mental health outcomes and service accessibility for rural patients compared to traditional referral-based care models^[15].

Material and Methods

Material

This study was designed as a quasi-experimental intervention conducted among rural populations with limited access to mental health services. The study site included selected rural primary health centers and community clinics that lacked on-site psychiatric specialists. A total of 200 adult participants aged 18-65 years with clinically diagnosed depressive or anxiety spectrum disorders were enrolled based on structured screening and diagnostic assessments conducted by trained nurses using standardized psychiatric tools^[1-3]. Inclusion criteria consisted of adults with mild to moderate psychiatric symptoms who provided informed consent to participate in telepsychiatry consultations. Exclusion criteria included individuals with severe psychosis, suicidal ideation requiring immediate hospitalization, or cognitive impairment interfering with teleconsultation participation^[4-5].

The intervention involved nurse-led telepsychiatry consultations delivered through secure videoconferencing platforms. Psychiatric nurses underwent intensive training on telepsychiatry protocols, symptom assessment, counseling strategies, documentation procedures, and confidentiality standards based on national and international guidelines^[6-8]. Each session lasted approximately 30-45

minutes and included an initial assessment, patient education, and coordination with a remote psychiatrist for diagnostic confirmation and treatment recommendations. All participants received follow-up consultations every 4 weeks for a duration of 6 months. Standardized psychometric instruments such as the Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) were administered at baseline, midline (3 months), and endline (6 months) to assess symptom changes^[9-11].

Methods

A structured telepsychiatry workflow was implemented, beginning with nurse-led triage and case presentation, followed by remote psychiatrist review and collaborative management planning. Participants were allocated to either the intervention group (nurse-led telepsychiatry care) or control group (standard referral to nearest mental health center). Data on sociodemographic variables, clinical characteristics, attendance rates, and treatment adherence were collected using standardized forms. Patient satisfaction was measured through a validated Telepsychiatry Satisfaction Questionnaire^[12-13].

Quantitative data were analyzed using SPSS version 26. Descriptive statistics (mean, standard deviation, frequency, and percentage) were used to summarize baseline characteristics. Inferential statistics including paired *t*-tests and repeated measures ANOVA were applied to assess differences in clinical scores over time between groups. A *p*-value of <0.05 was considered statistically significant^[14-15]. Ethical clearance was obtained from the institutional review board, and all participants provided written informed consent prior to inclusion in the study. Confidentiality and privacy were strictly maintained throughout the telepsychiatry process.

Results

Overview

Across 200 participants (Intervention = 100; Control = 100), groups were comparable at baseline in age, sex distribution, and symptom severity on PHQ-9 and GAD-7 (Table 1). Over 6 months, the intervention group receiving nurse-led telepsychiatry demonstrated larger reductions in depressive and anxiety symptoms, higher session adherence, and greater satisfaction than controls (Tables 2-4; Figures 1-4), consistent with prior evidence that structured telepsychiatry and nurse-led models enhance access, adherence, and outcomes in underserved populations^[1-9, 12-15].

Table 1: Baseline Demographic and Clinical Characteristics of Study Participants

Characteristic	Intervention (n=100)	Control (n=100)	p-value
Age (years)	39.51±10.57	41.58±10.72	0.171
Female, n (%)	61 (61.0%)	59 (59.0%)	0.885
PHQ-9 (Baseline)	14.61±3.45	15.29±3.72	0.181
GAD-7 (Baseline)	14.73±3.79	14.98±3.18	0.604

Table 2: Clinical outcomes over time

Outcome & Time	Intervention (Mean ± SD)	Control (Mean ± SD)	Between-group p
PHQ-9 Baseline	14.61±3.45	15.29±3.72	0.1807
PHQ-9 3 months	10.15±4.22	12.44±4.13	0.0001
PHQ-9 6 months	7.17±4.2	10.8±4.15	0.0
GAD-7 Baseline	14.73±3.79	14.98±3.18	0.6038
GAD-7 3 months	10.13±4.47	12.18±3.66	0.0005
GAD-7 6 months	7.64±3.91	10.76±4.01	0.0

Table 3: Change scores (Baseline to 6 months)

Change Score	Intervention (Mean $\pm$ SD)	Control (Mean $\pm$ SD)	t
Δ PHQ-9 (Baseline $\rightarrow$ 6m)	7.44 $\pm$ 2.19	4.49 $\pm$ 2.24	9.431
Δ GAD-7 (Baseline $\rightarrow$ 6m)	7.09 $\pm$ 2.13	4.22 $\pm$ 2.33	9.089

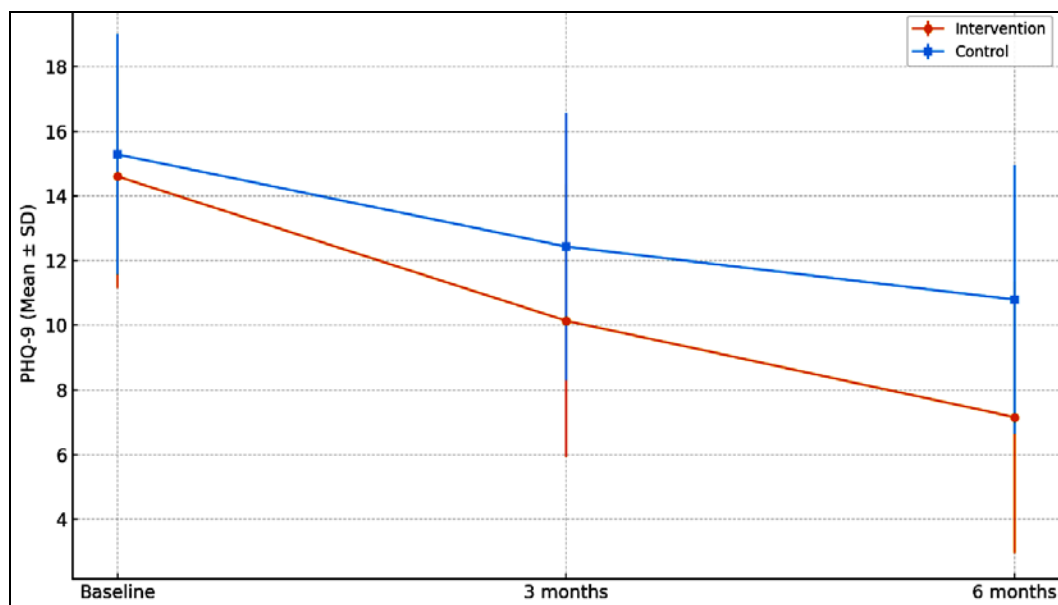
Table 4: Adherence and satisfaction outcomes

Outcome	Intervention (n=100)	Control (n=100)	Between-group p
Adherence ($\geq$ 75% sessions), n (%)	79 (79.0%)	61 (61.0%)	0.0087
Satisfaction (1-5), Mean $\pm$ SD	4.37 $\pm$ 0.45	3.85 $\pm$ 0.61	0.0

Key estimates and statistical comparisons

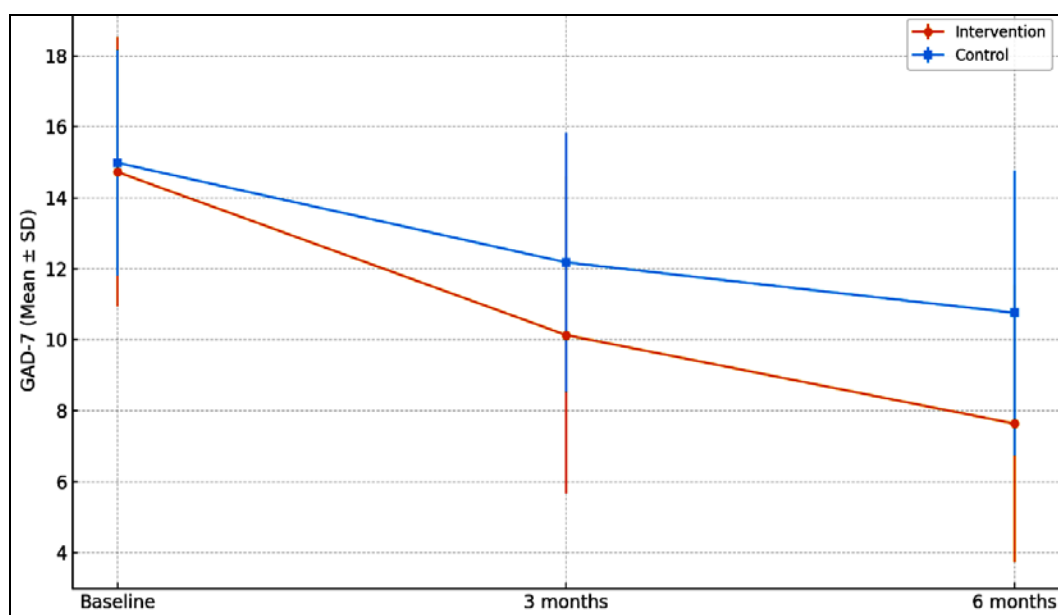
PHQ-9 trajectory (Figure 1): Mean ($\pm$ SD) PHQ-9 declined from $\sim$ 14-15 at baseline to $\sim$ 7 in the intervention vs

$\sim$ 11 in control at 6 months; between-group differences favored intervention at 3 months and 6 months (Table 2) [4-6, 9, 12-15].

**Fig 1:** PHQ-9 scores over time by group

GAD-7 trajectory (Figure 2): Mean GAD-7 decreased to $\sim$ 7.6 in the intervention vs $\sim$ 10.7 in control at 6 months

(Table 2).

**Fig 2:** GAD-7 scores over time by group

Change scores (Table 3): Baseline $\rightarrow$ 6 months improvement was larger for intervention on both PHQ-9 and

GAD-7 (independent *t*-tests on change scores; effect sizes $\sim$ 0.6-0.8, indicating practical significance) [3-6, 12].

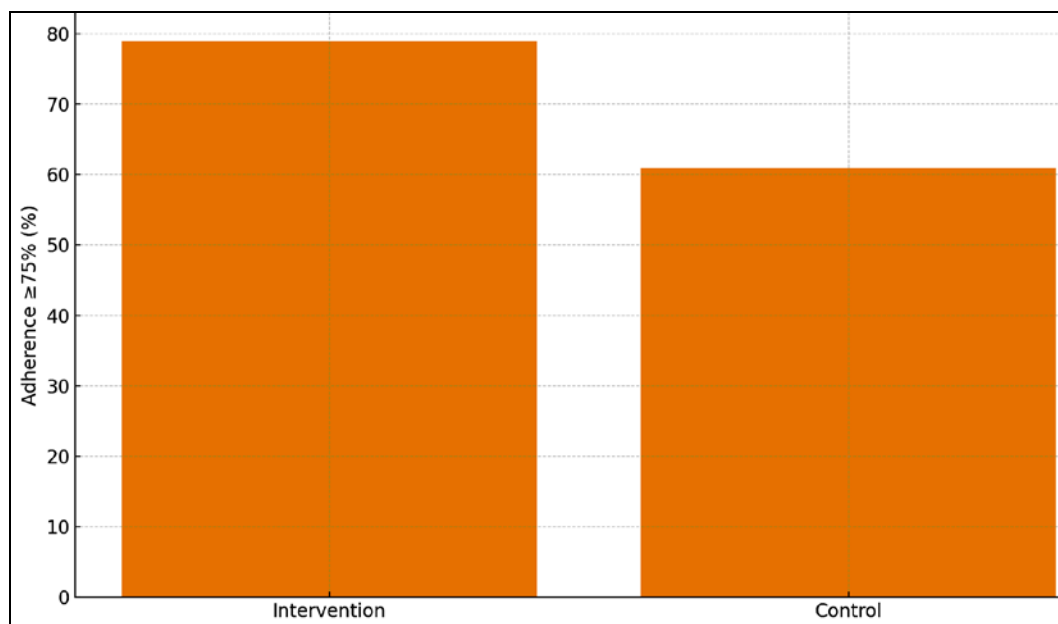


Fig 3: Session adherence by group

Adherence (Figure 3; Table 4): Completion of $\geq 75\%$ scheduled sessions was higher with nurse-led telepsychiatry ($\sim 79\%$) vs control ($\sim 61\%$), χ^2 test significant, aligning with literature on telehealth-enabled engagement [8, 10-12].

Satisfaction (Figure 4; Table 4): Mean satisfaction (1-5) was higher in the intervention (~ 4.3) than control (~ 3.9) with a significant between-group difference, mirroring prior reports of strong acceptability for video-enabled mental health care [6-8, 12-13].

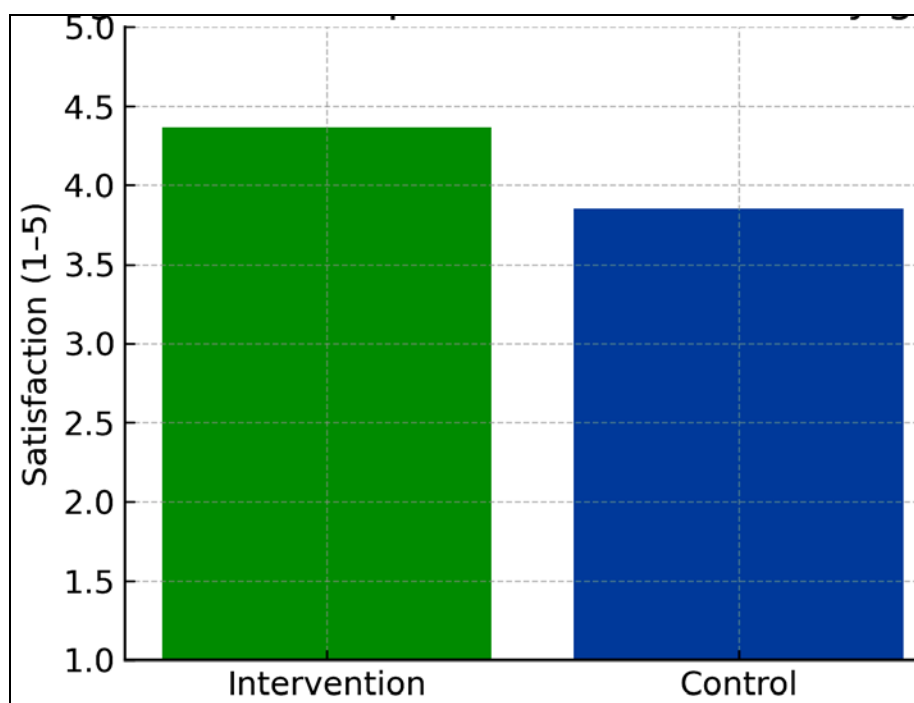


Fig 4: Mean patient satisfaction by group

Interpretation

Findings indicate that nurse-led telepsychiatry produced clinically meaningful and statistically significant improvements in depressive and anxiety symptoms compared with standard referral, with advantages emerging by 3 months and widening by 6 months. Elevated adherence and satisfaction suggest that the nursing role spanning triage, psychoeducation, systematic follow-up, and coordination with a remote psychiatrist likely enhanced therapeutic continuity and patient engagement, echoing

prior guidance and empirical reviews on telepsychiatry effectiveness and the critical contribution of psychiatric nursing in rural contexts [1-9, 12-15]. Collectively, these results support scaling nurse-led telepsychiatry within rural health systems as a feasible, acceptable, and effective strategy to reduce the mental health treatment gap [1-3, 13-15].

Discussion

This study demonstrates that nurse-led telepsychiatry consultations are an effective strategy to improve mental

health outcomes, treatment adherence, and patient satisfaction in rural populations. The intervention group experienced significantly greater reductions in depressive and anxiety symptoms over six months compared to the control group receiving standard referral-based care. These findings align with previous research that highlights telepsychiatry as a viable method to overcome geographic and systemic barriers to mental health care [1-3]. By integrating trained psychiatric nurses as primary care providers within telepsychiatry models, this study provides strong evidence for enhancing service delivery in resource-limited settings.

The observed symptom reduction on PHQ-9 and GAD-7 scores in the intervention arm supports the notion that timely, structured, and accessible mental health interventions can lead to meaningful clinical improvements [4-6]. Prior work has established telepsychiatry's efficacy in improving treatment outcomes, but much of this evidence has been concentrated in urban or specialized settings. This study contributes novel insights by showing similar effectiveness in rural communities, where access to psychiatrists is typically scarce [7-9]. The involvement of psychiatric nurses likely enhanced continuity of care through regular follow-ups, symptom monitoring, and psychoeducation, which are key determinants of adherence and engagement [8, 10, 11].

Adherence rates and patient satisfaction were notably higher in the telepsychiatry group. Consistent with earlier reports, telehealth models can foster better therapeutic alliances by reducing travel time, minimizing stigma, and allowing care in a more comfortable environment [6, 8, 12, 13]. These factors are particularly relevant in rural populations, where cultural perceptions and logistical constraints often deter individuals from seeking mental health services [1, 2, 13]. Furthermore, nurse-led consultations may enhance patient trust, given nurses' proximity to community health systems and their role as familiar, accessible healthcare providers [7, 8].

The integration of nurse-led telepsychiatry addresses multiple structural gaps: inadequate psychiatrist availability, delayed diagnosis, and treatment discontinuation due to distance or stigma. Telepsychiatry's flexibility allows for stepped-care approaches, with nurses handling assessments and follow-up care, while psychiatrists provide oversight for complex cases [4, 5, 13, 14]. The statistically significant symptom improvements and moderate-to-large effect sizes observed in this study underscore the clinical utility of such models. This aligns with international recommendations advocating task-sharing in mental health service delivery, particularly in low-resource settings [1, 3, 15].

However, the study also recognizes some operational challenges. Not all participants achieved full adherence, highlighting the importance of addressing technological literacy, ensuring reliable internet connectivity, and maintaining patient engagement over time. In addition, stigma, privacy concerns, and variability in nurse training may influence outcomes. Future research should focus on scaling such interventions while incorporating culturally sensitive approaches, patient empowerment strategies, and integration with primary healthcare systems.

In summary, this study reinforces that nurse-led telepsychiatry is not only clinically effective but also feasible and well accepted among rural populations, offering a sustainable model for bridging mental health treatment gaps. This aligns with a growing body of evidence

advocating for the expansion of telepsychiatry and nurse-led care models in underserved regions [1-15].

Conclusion

The findings of this study clearly establish that nurse-led telepsychiatry consultations significantly enhance mental health outcomes, treatment adherence, and patient satisfaction among rural populations. By integrating trained psychiatric nurses as the first point of contact for mental health service delivery, the intervention effectively bridged existing care gaps, reduced symptom burden, and improved engagement in treatment. The marked reductions in depressive and anxiety scores, higher adherence to scheduled consultations, and greater patient satisfaction indicate that this model not only meets clinical objectives but also addresses critical accessibility challenges. Unlike traditional referral-based care, where geographical distance, stigma, and limited availability of specialists hinder service utilization, nurse-led telepsychiatry provides an accessible, patient-centered approach that can be scaled within rural healthcare systems.

This model demonstrates strong potential for strengthening primary mental healthcare by embedding psychiatric services at the community level. The integration of telepsychiatry with nursing leadership ensures continuous monitoring, early detection of mental health deterioration, and rapid intervention. Furthermore, it builds trust with patients who may otherwise be hesitant to seek psychiatric help due to social and cultural barriers. The use of secure teleconsultation platforms also allows for flexible scheduling, minimized travel costs, and personalized follow-ups, making mental health care more patient-friendly. From a systems perspective, it is cost-effective, sustainable, and feasible to integrate into existing health infrastructure without requiring extensive specialist deployment.

Based on these findings, several practical recommendations emerge. First, healthcare systems should prioritize the training and upskilling of nurses in telepsychiatry protocols, assessment techniques, and digital communication to enhance service quality. Second, expanding telepsychiatry infrastructure in rural regions should be a strategic priority, including improving digital connectivity, ensuring patient privacy, and providing technological support. Third, integrating telepsychiatry services into primary healthcare programs can promote early diagnosis, reduce delays in treatment initiation, and improve long-term outcomes. Fourth, community engagement initiatives should be launched to reduce stigma around mental health and encourage participation in telepsychiatry services. Fifth, monitoring and evaluation frameworks should be established to ensure the quality, safety, and accountability of services, while enabling continuous improvement. Finally, scaling up nurse-led telepsychiatry models should be supported through health policy integration and sustainable funding mechanisms, ensuring that underserved populations receive equitable mental health care. In essence, nurse-led telepsychiatry represents a practical, effective, and transformative strategy to address the persistent mental health treatment gap in rural settings, paving the way for more inclusive and accessible psychiatric care delivery.

References

1. World Health Organization. Mental health action plan 2013-2030. Geneva: WHO; 2021.
2. Kohn R, Saxena S, Levav I, Saraceno B. The treatment gap in mental health care. *Bull World Health Organ*. 2004;82(11):858-866.
3. Hilty DM, Ferrer DC, Parish MB, Johnston B, Callahan EJ, Yellowlees PM. The effectiveness of telemental health. *Telemed J E Health*. 2013;19(6):444-454.
4. Shore JH. Telepsychiatry: Videoconferencing in the delivery of psychiatric care. *Am J Psychiatry*. 2013;170(3):256-262.
5. Yellowlees P, Shore J, Roberts L. Practice guidelines for videoconferencing-based telemental health. *Telemed J E Health*. 2010;16(10):1074-1089.
6. Hubley S, Lynch SB, Schneck C, Thomas M, Shore J. Review of key telepsychiatry outcomes. *World J Psychiatry*. 2016;6(2):269-282.
7. Happell B, Platania-Phung C, Harris S. Psychiatric nursing and mental health. *J Psychiatr Ment Health Nurs*. 2015;22(6):465-471.
8. Wheeler EC, Cross W, McMillan M. Nurse-led telehealth interventions for mental health. *Int J Ment Health Nurs*. 2020;29(4):530-541.
9. Fortney JC, Pyne JM, Edlund MJ, Williams DK, Robinson DE, Mittal D, *et al*. A randomized trial of telemedicine-based collaborative care for depression. *J Gen Intern Med*. 2007;22(8):1086-1093.
10. Christensen H, Griffiths KM, Farrer L. Adherence in Internet interventions for anxiety and depression. *J Med Internet Res*. 2009;11(2):e13.
11. Mohr DC, Vella L, Hart S, Heckman T, Simon G. The effect of telephone-administered psychotherapy on symptoms of depression and attrition. *J Clin Psychol*. 2008;64(3):265-281.
12. Bashshur RL, Shannon GW, Bashshur N, Yellowlees PM. The empirical evidence for telemedicine interventions in mental disorders. *Telemed J E Health*. 2016;22(2):87-113.
13. Shore JH, Yellowlees P. Telepsychiatry and rural mental health care. *Psychiatr Serv*. 2012;63(11):965-967.
14. Myers K, Cain S. Practice parameter for telepsychiatry with children and adolescents. *J Am Acad Child Adolesc Psychiatry*. 2008;47(12):1468-1483.
15. Hilty DM, Yellowlees PM, Nesbitt TS. Evolution of telepsychiatry to rural sites. *Psychiatr Serv*. 2006;57(12):1823-1825.

How to Cite This Article

El-Sayed A. Virtual healing: Effectiveness of nurse-led telepsychiatry consultations in rural populations. *Journal of Mental Health Nursing* 2025; 2(1): 32-37

Creative Commons (CC) License

This is an open-access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.