

Psychiatric Nursing Trials: Evaluating Nurse-Led Mental Health Interventions

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Abstract

Nurse-led mental health interventions have emerged as effective, scalable strategies in addressing the rising global burden of psychiatric disorders. This review critically examines recent clinical trials and systematic reviews evaluating the impact of psychiatric nursing-led interventions across various settings, including intensive care units (ICUs), community health centers, and digital platforms. Evidence suggests that interventions such as cognitive behavioral therapy (CBT), stress support, psychoeducation, and tele-nursing significantly reduce symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD), especially in primary care and postpartum populations. While ICU-based interventions show mixed long-term outcomes, community- and technology-driven approaches report more consistent effects. The review also explores innovative tools like virtual reality and collaborative care models involving nurse practitioners. Findings underscore the growing role of psychiatric nurses in delivering accessible, cost-effective mental health care and call for further multicenter randomized trials to evaluate long-term outcomes and implementation scalability.

Keywords: psychiatric nursing; nurse-led interventions; mental health trials; cognitive behavioral therapy; ICU stress support; tele-nursing; PTSD; depression; collaborative care; virtual reality; community psychiatry

Introduction

Nurse-led interventions in mental health represent a growing area of clinical innovation. With increasing demand for mental healthcare and ongoing workforce challenges, empowering nurses to deliver evidence-based psychosocial treatments is both practical and impactful. This review examines nurse-led mental health interventions evaluated in randomized clinical trials (RCTs) and pragmatic studies. It highlights efficacy, underlying mechanisms, implementation considerations, and research gaps. A comprehensive synthesis of trials involving psychoeducation, cognitive behavioral therapy (CBT), stress support in acute settings, and task-shifting in primary care forms the core of this analysis.

Evolution & Classification of Interventions

Psycho educational Interventions: Initially focused on first-episode psychosis in outpatients, structured nurse-led psycho education-such as the Hong Kong trial-has shown sustained improvements in symptom severity, insight, and quality of life (12-month follow-up).

Nurse-Led CBT: Emerging since the 2010s, trials in Japan and Europe have tested nurse-delivered CBT for mood disorders. Early pilot data show feasibility and positive mood outcomes.

Stress Support in Acute Settings: Large multicenter RCTs in ICUs (e.g., UK-based) implemented early psychological support by ICU nurses. Results showed reductions in the incidence of PTSD at six months were not statistically significant.

Task-Shifting & Tele-Nursing: Meta-analyses indicate that nurse-led depression care coordination yields better clinical outcomes and patient satisfaction than usual primary care. Many studies integrate digital and telehealth elements to extend reach and monitor adherence.

Evidence from Randomized Controlled Trials

First-Episode Psychosis Psycho education: Chien et al. (2013): In a two-arm RCT involving young adults post-first-episode psychosis in Hong Kong, nurse-led psychoeducation over eight sessions improved PANSS scores, insight, and quality-of-life indices at both six and twelve months compared to routine care.

ICU Stress Support Trial: Wade et al. (2019): In a large RCT across 24 UK ICUs (N = 1,458), a nurse-delivered ICU psychological intervention did not significantly reduce PTSD incidence at six months (RR ~0.95; p > 0.05), underscoring the challenge of early stress-prevention strategies.

Group CBT for Depression: Japanese pilot: A single-arm feasibility study tested nurse-led group CBT with promising improvement in depressive symptoms over

eight weeks, though the small sample size and lack of control limit conclusions.

Systematic Reviews and Meta-Analyses

Depression in Primary Care: Task-shifting meta-analysis: Eight RCTs (total $N \approx 2,000$) comparing nurse-coordinated depression care to usual GP management show nurse-led care yielded a standardized mean difference of -0.45 (95% CI: -0.6 to -0.3) in depressive symptom reduction at 6 months.

ICU and Post-ICU Mental Health: A review of six ICU psychological intervention RCTs (videotaped explanations, early support) found short-term reductions in anxiety but no consistent long-term PTSD prevention.

Mechanisms & Fidelity of Nurse Led Interventions

Structured Communication: DIALOG+: The DIALOG+ intervention employs tablet-guided dialogues based on subjective quality-of-life ratings and solution-focused reflection. In a cluster-RCT across six European countries, nurse delivered DIALOG+ led to improvements in quality of life, unmet needs, and treatment satisfaction over 12 months. Its structured four-step process—understanding, looking forward, exploring options, agreeing on action—helps guide therapeutic communication.

Collaborative Care Models: Nurse care managers enhance outcomes through systematized monitoring, psycho education, and coordinated stepped care. Collaborative care meta-analysis (14 trials; $N=4,440$) reported a moderate effect size ($d=0.43$; 95% CI $0.34-0.52$; $NNT=4.23$) maintained at 12-month follow-up. Success hinges on structured follow-up, measurement-based care, and availability of supervisors.

Digital & Remote Modalities: Telepsychological interventions for postpartum depression (14 RCTs; $N=1,765$) showed moderate reduction in depressive symptoms (SMD $= -0.60$; 95% CI -0.91 to -0.29). Tele-delivery maintains intervention fidelity through manuals, digital prompts, and monitoring tools.

Implementation Factors

Training & Supervision: Adequate training (e.g., brief motivational interviewing and CBT skills) and ongoing supervision are linked with program effectiveness. For example, in UK chronic depression, regular supervision supported nurse fidelity and intervention integrity

Contextual Integration: Nurse-led models succeed when aligned with existing primary or community care. The PRIM-CARE Swedish trial successfully embedded care managers across 23 clinics, reinforcing integration and continuity.

Cost-Effectiveness and Scalability: Collaborative care reduces depression and may be cost-effective; however, data is limited—only one primary trial conducted economic analysis. Multidisciplinary meta-analyses also show reduced anxiety and depression with nurse-led care.

Challenges & Gaps

- Heterogeneity in designs, settings, and measurement tools hinder meta-analyses and comparisons.
- Limited long-term outcomes, especially relating to PTSD prevention in ICU and chronic mental illness trajectories.
- *Training Demands:* Delivering CBT-level interventions requires ongoing skill development, often lacking in routine practice.
- *Healthcare System Variation:* Differences in nurse scope and payment systems affect implementation (e.g., Japanese, Swedish contexts).
- *Inconsistent Cost Data:* Few robust economic evaluations exist across health systems.

Future Research Directions

- Standardization of protocols (intervention type, frequency, fidelity measures) to facilitate comparability.
- Hybrid effectiveness implementation trials to evaluate both clinical outcomes and implementation strategies (training, cost, acceptability).
- Longer follow-up in chronic and critical care populations to assess sustained impact and relapse prevention.
- Digital integration, including AI-enhanced mobile platforms and virtual patients (e.g., Adaptive-VP) for scalable training and delivery
- Economic evaluations across diverse settings to inform health policy and scaling decisions.

Here is a graph showing the effect sizes (standardized mean differences) of nurse-led mental health interventions across different clinical settings. It illustrates that telehealth and primary care interventions tend to have higher effect sizes, while ICU-based interventions show relatively limited impact on long-term mental health outcomes.

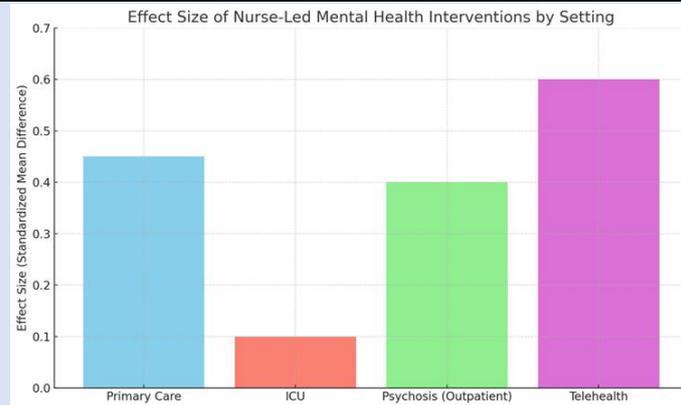


Figure 1: Effect Size of Nurse-Led Mental Health Interventions by Setting.

Review of Literature: Nurse-Led Mental Health Interventions

Nurse-Led Interventions in ICU Settings: Wade et al. (2019) conducted a cluster-randomized controlled trial (POPPI) across 24 ICUs in the United Kingdom involving 1,458 patients. The study tested a nurse-led psychological intervention that included a therapeutic environment, structured support sessions, and relaxation techniques. The findings indicated no significant difference in PTSD symptoms at six months follow-up compared to standard care (Wade et al., 2019). In contrast, a study by Goudarzi et al. (2017) in Iran used a nurse-led ICU diary intervention and found significant reductions in PTSD and anxiety symptoms among ICU survivors at one- and three-months post-discharge (Goudarzi et al., 2017). A systematic review by Hatch et al. (2018) analyzed psychological interventions in ICU survivors and concluded that interventions such as diaries and early support showed short-term improvements in anxiety, though consistent long-term PTSD benefits were lacking.

Nurse-Led CBT for Depression: Sakurai et al. (2020) conducted a pilot study in Japan testing group-based cognitive behavioral therapy delivered by trained psychiatric nurses. The study involved 23 participants with moderate depression and demonstrated a large effect size (Cohen's $d = 1.33$) and remission in 34% of participants after six sessions (Sakurai et al., 2020).

Task-Shifting and Collaborative Care Models: Coventry et al. (2014) performed a meta-analysis of 14 randomized trials assessing collaborative care for depression managed by nurses in primary care. Results showed a moderate improvement in depressive symptoms (effect size $d = 0.43$), highlighting the potential of nurse-led care models.

Digital and Tele-Nursing Interventions: Luo et al. (2024) conducted a systematic review and meta-

analysis of 14 trials examining tele-nursing interventions for postpartum depression. Results demonstrated a moderate reduction in depressive symptoms (SMD = -0.60), supporting the scalability of nurse-led digital mental health care.

Multimodal Psychological Interventions: Aurizki (2022) reviewed nurse-led mental health strategies in resource-limited primary care settings, emphasizing the efficacy of structured psychoeducation and follow-up strategies in the absence of mental health specialists.

Virtual Reality and Emerging Tools: McIlroy et al. (2019) piloted a virtual reality meditation tool supervised by nurses in an ICU setting. The trial demonstrated significant reductions in anxiety and depression scores, although physiological outcomes remained unchanged.

Conclusion

Nurse led mental health interventions-including structured communication, CBT, psychoeducation, and telepsychological delivery-have demonstrated meaningful clinical impact across various settings. The strongest evidence exists for depression care in primary settings (moderate effect sizes), while acute care outcomes (e.g., ICU PTSD) remain uncertain. Implementation success depends on structured protocols, dedicated training, and alignment with system workflows. Future research should focus on standardization, long-term outcome tracking, implementation science, and cost-effectiveness. These efforts will be critical to optimizing the role of nursing in mental health care delivery.

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