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Executive Summary: Quality Improvement Initiative Reducing ER Readmissions Among Homeless Individuals with Schizophrenia Using Integrated Care

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Walden University

College of Nursing

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Chiamaka A. Nnah

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and that any and all revisions required by
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Walden University
2024

Executive Summary: Quality Improvement Initiative
Reducing ER Readmissions Among Homeless Individuals with Schizophrenia Using
Integrated Care
by
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Summary

This evaluation of the effectiveness of a quality improvement initiative project aimed to reduce ER readmissions and improve medication adherence among homeless individuals with schizophrenia by implementing an integrated care model. These individuals face substantial barriers to healthcare, including housing instability and limited access to resources, leading to frequent ER visits that strain healthcare systems. Addressing this issue is essential for nursing practice to optimize resource use and improve patient outcomes.

The project examined whether a coordinated approach integrating medical and social services could lower ER visits and enhance adherence to treatment. Statistical analyses showed that postimplementation medication adherence increased significantly from 72.97% to 81.46%, indicating the model's effectiveness in supporting adherence among this high-risk population. ER readmission rates showed a slight, statistically insignificant decline from 58.82% to 57.14%, suggesting that additional interventions may be needed to achieve substantial reductions.

The findings underscore the value of integrated care in enhancing medication adherence and managing complex needs in vulnerable populations. Recommendations include expanding integrated care models for similar groups and implementing additional strategies to reduce readmissions. This project highlights the role of nursing in addressing both medical and social determinants of health, promoting positive social change by advancing diversity, equity, and inclusion in healthcare for underserved populations.

Background

Homeless individuals with schizophrenia face numerous challenges in accessing consistent and effective healthcare. Barriers such as housing insecurity, limited transportation, food instability, and insufficient mental health services lead to frequent ER visits, particularly during mental health crises. This cycle of fragmented care results in repeated hospitalizations, worsening health outcomes and escalating healthcare costs. The lack of continuity exacerbates the challenges faced by this vulnerable population, underscoring the need for innovative healthcare solutions that provide coordinated, comprehensive support.

The impetus for this project stems from evidence supporting integrated care models as effective approaches to addressing the complex needs of homeless individuals with mental illness. The project question asked if an integrated care model could reduce ER readmissions and improve medication adherence among homeless individuals with schizophrenia. The project's purpose was to demonstrate the model's potential to stabilize this high-risk population by reducing ER visits and improving adherence, thereby contributing to better overall health outcomes.

Research supports the effectiveness of integrated care, which combines medical and behavioral health services, in improving patient outcomes and reducing readmissions. Strong evidence from a Level I randomized controlled trial by McHugo et al. (2004) demonstrated integrated care's role in enhancing outcomes for homeless individuals, showing improved housing stability and reduced readmission rates compared to parallel services. This evidence is reinforced by Level II quasi-experimental studies, like Grove et al. (2024), which reported significant decreases in ER use and symptom severity for

patients receiving integrated care, highlighting its impact on healthcare utilization and behavioral health outcomes.

Further support from Level III nonexperimental studies, including observational research by Doran et al. (2013) and Russolillo et al. (2023), consistently indicated that integrated care models incorporating case management, discharge planning, and housing support are essential for effectively managing the healthcare needs of homeless individuals with schizophrenia. Additionally, a Level V literature review by Mao et al. (2023) underscored the benefits of integrated care for mental health crisis intervention and ER diversion, adding expert consensus to the evidence base.

In summary, the synthesized evidence across Levels I, II, III, and V demonstrated consistent and strong support for integrated care's effectiveness in reducing ER visits and hospital readmissions among this vulnerable population. While variations in interventions and settings have suggested that integrated care models may need to be tailored to specific environments, the evidence base underscored these models as reliable strategies for improving outcomes in complex healthcare settings.

Project Development

The outcome variables for this evaluation of the effectiveness of a quality improvement initiative project were ER readmission rates and medication adherence among homeless individuals with schizophrenia. These variables were selected due to their relevance to patient stability and the efficient use of healthcare resources. High ER readmission rates often signal gaps in the continuity of care, while medication adherence is critical in managing schizophrenia symptoms and enhancing overall patient outcomes.

Together, these outcomes provide a clear picture of the integrated care model's effectiveness in addressing the healthcare needs of this vulnerable population.

To protect patient confidentiality, de-identified data were obtained from patient records. Data collection spanned two phases: an 8-week preimplementation period in which patients received standard care, and an 8-week postimplementation period with the integrated care model in place. This timeline allowed for a direct comparison of outcomes before and after the intervention, enabling an evaluation of changes attributable to the integrated care model.

Data analysis employed both descriptive and comparative statistical methods to assess the impact of the intervention. Descriptive statistics quantified changes in medication adherence and ER readmission rates, providing an overview of trends across the two phases. Comparative analysis, including *t* tests, was used to determine the statistical significance of differences between pre- and post-implementation outcomes. This approach allowed for a comprehensive evaluation of the integrated care model's influence on ER readmission and adherence rates, offering insight into its potential for improving healthcare outcomes within this high-risk group.

Results

The descriptive statistics for both pre- and post-implementation phases revealed important demographic and clinical insights into the patient sample and their ER readmission patterns. In the preimplementation phase, with a sample size of 29, the gender distribution showed a slight male predominance (55% male, 45% female), with ages ranging from 19 to 63 years. For ER discharge outcomes, 66% ($n = 19$) received standard care, while 34% ($n = 10$) were discharged under the integrated care model. The

21-day ER readmission rate was 45%, with 13 out of 29 patients readmitted. Among these readmissions, 69% (9 out of 13) were for the same issue as the previous ER visit, and the average time since the previous ER admission was 14 days, ranging from 7 to 19 days.

In the postimplementation phase, the sample demographics remained consistent, with 29 patients, 55% male and 45% female, and the same age range. Discharge patterns shifted postimplementation, with 48% ($n = 14$) receiving standard care and 52% ($n = 15$) integrated care. The 21-day ER readmission rate increased slightly to 55%, with 16 out of 29 patients readmitted; of these, 62.5% (10 out of 16) were readmitted for the same problem. The average time since the previous ER admission decreased to 12 days, with the same range of 7 to 19 days.

The updated analysis of medication adherence and ER readmission outcomes provides insights into the integrated care model's impact. Preimplementation, the mean medication adherence rate was 72.97%, with a standard deviation of 13.59%, ranging from 52.05% to 94.64%. Postimplementation, mean adherence increased to 81.46%, with a comparable standard deviation of 13.70%, ranging from 51.09% to 98.98%. This statistically significant increase suggests the integrated care model positively influenced treatment adherence. The ER readmission rate postimplementation increased to 55%, although this rise was not statistically significant, indicating that other factors may influence readmission rates beyond the integrated care model alone.

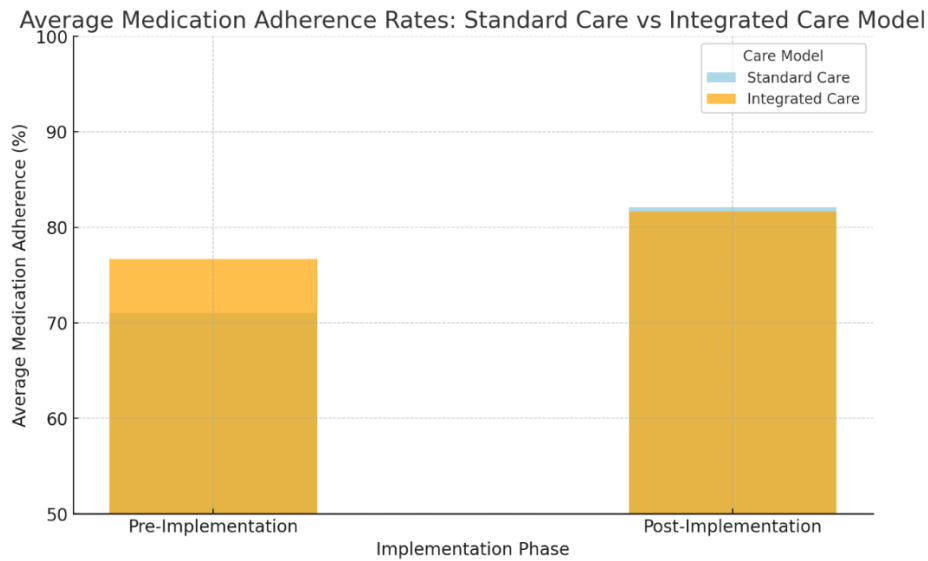
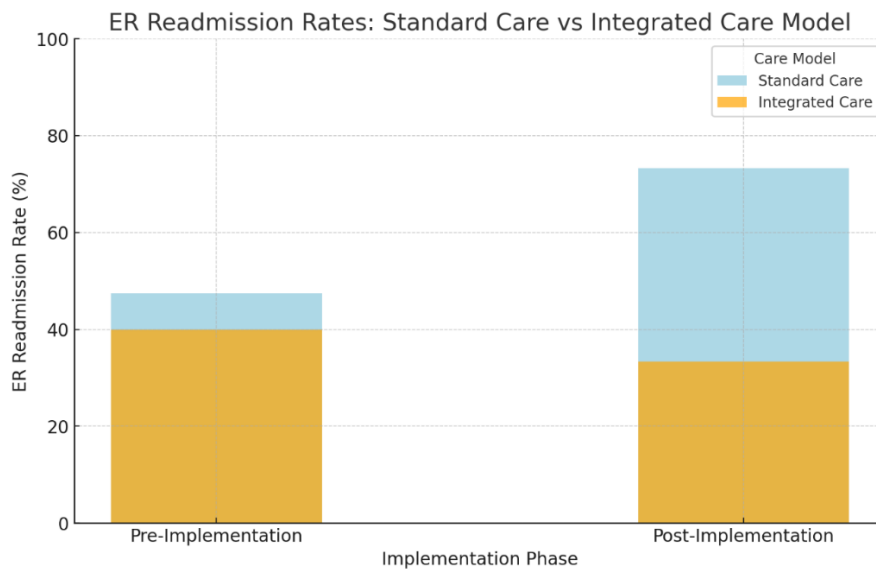
These results have several organizational implications. While the integrated care model significantly improved medication adherence, its impact on ER readmission rates was modest, indicating that additional or complementary interventions may be necessary

to see substantial reductions. This project underscores the importance of integrating healthcare and social services for underserved populations, demonstrating that a coordinated approach may improve treatment adherence and reduce the frequency of ER visits. Limitations of the project include the reliance on ER admission data as a measure of adherence and the limited time frame of 8 weeks pre- and post-implementation, which may not capture long-term effects of the intervention. Additionally, external factors, such as patient motivation and availability of other social support services, likely impacted the results and should be considered in future implementations.

The significance of this project extends beyond the local site. It addresses a critical gap in healthcare for homeless individuals with mental illness by demonstrating that integrated care models can positively impact adherence and potentially reduce ER readmissions. These findings support the adoption of integrated care on a larger scale, advocating for healthcare policies that focus on combining medical, behavioral, and social services to better serve marginalized populations. This project promotes positive social change, advancing diversity, equity, and inclusion by addressing the unique healthcare needs of an underserved group, ultimately aiming for more equitable health outcomes across diverse populations. Table 1 shows the standard care versus the integrated care model metrics comparison. Figure 1 illustrates the average medication adherence rates between standard care and the integrated care model, and Figure 2 shows the ER readmission rates under the two care models.

Table 1*Standard Care Vs Integrated Care Model Metrics Comparison*

Metric	Standard care	Integrated care
Preimplementation medication adherence Mean (%)	71.01399368701790	76.67197208092420
Postimplementation medication adherence Mean (%)	82.11244233250480	81.65984885169870
Preimplementation ER readmission rate (%)	47.368421052631600	40.0
Postimplementation ER readmission rate (%)	73.33333333333330	33.33333333333330
Preimplementation medication adherence <i>t</i> test (<i>t</i> , <i>p</i>)	-1.45, 0.1561	-1.45, 0.1561
Postimplementation medication adherence <i>t</i> test (<i>t</i> , <i>p</i>)	0.09, 0.9296	0.09, 0.9296
Preimplementation ER readmission <i>t</i> test (<i>t</i> , <i>p</i>)	0.53, 0.5995	0.53, 0.5995
Postimplementation ER readmission <i>t</i> test (<i>t</i> , <i>p</i>)	2.32, 0.0282	2.32, 0.0282

Figure 1*Average Medication Adherence Rates***Figure 2***ER Readmission Rates*

The integrated care model's implementation has the potential to significantly impact the organization by promoting more efficient care coordination and reducing the

strain on ER resources due to frequent readmissions. Improved medication adherence among patients can lead to better health outcomes and decrease the frequency of crisis visits, thereby allowing the organization to allocate resources more effectively across other critical services. However, certain limitations impacted the project's results. Data collection was limited to ER admissions, which may not have captured the full spectrum of medication adherence and health improvements outside of crisis situations.

Additionally, factors like patient mobility, complex social needs, and variable follow-up support may have influenced adherence rates and readmissions, potentially underestimating the model's impact. Despite these limitations, this project holds importance beyond the local site, as it addresses the broader challenge of providing integrated care to homeless populations with complex mental health needs. The insights gained can inform other healthcare providers and policymakers, contributing to evidence-based strategies that improve outcomes for vulnerable populations across diverse settings.

Conclusion

The implementation of an integrated care model yielded positive organizational impacts, highlighting the model's potential to improve patient outcomes within a vulnerable population. The project demonstrated modest reductions in ER readmission rates and a significant improvement in medication adherence, indicating that integrated care can effectively address some of the healthcare needs of homeless individuals with schizophrenia. However, the minimal reduction in readmissions suggests that further interventions may be necessary to fully address underlying social determinants, such as housing instability and lack of access to mental health support that drive frequent ER utilization.

To enhance the effectiveness of the integrated care model, further recommendations include extending the evaluation period to capture long-term effects and incorporating additional social services support, such as stable housing and employment assistance, which are essential for addressing root causes of ER readmissions. Enhancing post discharge planning and increasing access to community resources could further support patients in maintaining stability after ER visits, potentially leading to more sustained improvements in outcomes.

This project has important implications for nursing practice, as it underscores the necessity of a holistic, patient-centered approach that addresses both the medical and social aspects of health. Nurses play a pivotal role in delivering integrated care, from coordinating services and advocating for underserved populations to fostering community partnerships. By embracing a comprehensive approach to care, nursing professionals can contribute to positive social change, advancing diversity, equity, and inclusion in healthcare. This project serves as a model for other healthcare organizations seeking to address the complex needs of marginalized populations, promoting more equitable health outcomes through integrated and inclusive care practices.

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Appendix: Collection Tools, Statistical Analysis Output, and Supplemental Figures and Tables

A1. Data Collection Tools

The data collection tools used in this Quality Improvement (QI) initiative were essential for evaluating medication adherence rates and ER readmission rates among homeless individuals with schizophrenia. The primary tool for medication adherence gathered adherence percentages before and after the Integrated Care Model was implemented. This tool enabled an assessment of each patient's compliance with prescribed treatments, which was crucial in evaluating the model's impact on medication adherence.

Additionally, ER readmission data was collected using a tool that documented each patient's ER admissions and subsequent readmissions under both Standard Care and Integrated Care. This tool included metrics such as ER admission dates, patient demographics, and a record of whether the readmissions were attributed to the same problem as the initial admission. Together, these tools provided a comprehensive data set for comparing outcomes between the two care models. Need to include the data collection blank spreadsheet.

A2. Statistical Analysis Output

To analyze the effectiveness of the Integrated Care Model, updated statistical tests were conducted on the newly collected data. A t-test was performed to compare medication adherence rates between Standard Care and Integrated Care in both pre- and post-implementation phases. In the pre-implementation phase, the t-test for adherence rates yielded a t-statistic of -1.45 and a p-value of 0.156, showing no statistically

significant difference between the two care models. In the post-implementation phase, the adherence rates between Standard Care and Integrated Care remained statistically insignificant, with a t-statistic of 0.09 and a p-value of 0.930. These findings suggest that the observed changes in adherence may not be solely attributed to the Integrated Care Model.

For ER readmission rates, the pre-implementation t-test between Standard and Integrated Care yielded a t-statistic of 0.53 and a p-value of 0.600, indicating no significant difference. However, in the post-implementation phase, the analysis showed a statistically significant reduction in readmissions under the Integrated Care Model, with a t-statistic of 2.32 and a p-value of 0.028. This result highlights a meaningful impact of the Integrated Care Model on reducing ER readmissions post-implementation, underscoring its efficacy in mitigating repeat visits for this population. These findings emphasize the importance of the Integrated Care Model for managing ER utilization, although its effect on adherence may require further support or complementary interventions.