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Staff Education on Metabolic Syndrome Screening in Patients Receiving Long-Acting Injectable Psychotropics

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Efetze Akana

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Executive Summary: Staff Education Project
Staff Education on Metabolic Syndrome Screening in Patients Receiving Long-Acting
Injectable Psychotropics

by

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Summary

This Doctor of Nursing Practice project was a staff education initiative designed to improve metabolic syndrome screening practices for patients receiving long-acting injectable psychotropic medications in an outpatient psychiatric setting. People living with serious mental illness face a heightened risk of cardiometabolic conditions, and inconsistent screening leads to delayed detection, avoidable illness, and ongoing health disparities, underscoring the importance of this practice gap within nursing practice due to nurses' central role in medication oversight and preventive care. A key limitation of the project was the small sample size and short-term evaluation period, which limited generalizability and did not allow assessment of sustained practice change.

The teaching plan included an educational presentation, interactive case-based discussion, workflow review, and printed screening reference materials, with outcomes evaluated using a pre- and post-test design and a 10-item knowledge assessment. Results showed meaningful knowledge improvement among five outpatient psychiatric clinical staff members, with mean scores increasing from 4.0/10 pre-test to 7.6/10 post-test and a normalized learning gain of 60%, supporting intervention effectiveness.

Major project products included the staff education curriculum and screening reference tools. Conclusions support staff education as a feasible quality improvement strategy to promote guideline-concordant metabolic screening, with recommendations to integrate training into routine staff education and standardize screening workflows. The project reinforces nurses' leadership in evidence-based practice and supports positive social change by promoting equitable preventive screening for individuals with serious mental illness.

Background

Metabolic syndrome refers to the presence of multiple related cardiometabolic abnormalities such as excess abdominal weight, abnormal lipid levels, elevated blood pressure, and impaired glucose control that together increase the likelihood of developing cardiovascular disease and type 2 diabetes. Individuals with serious mental illness are disproportionately affected by metabolic syndrome due to a complex interaction of psychotropic medication effects, sedentary lifestyle patterns, socioeconomic barriers, and limited access to preventive healthcare services (Auxilia et al., 2023). These factors contribute directly to increased cardiovascular morbidity and a markedly reduced life expectancy among psychiatric populations when compared with the general population. This disproportionate disease burden establishes the clinical importance of improving preventive screening practices in outpatient psychiatric care and directly connects to the identified practice gap.

Long-acting injectable antipsychotic medications are commonly used in outpatient psychiatric treatment to support adherence, decrease relapse risk, and maintain symptom stability, but their clinical benefits are accompanied by potential metabolic complications such as weight gain, altered glucose regulation, and lipid abnormalities. Clinical guidelines have emphasized the importance of baseline and ongoing monitoring of weight, body mass index, blood pressure, fasting glucose, and lipid profiles for individuals receiving antipsychotic medications. Despite these clear recommendations, evidence has demonstrated that routine metabolic screening remains inconsistent and frequently suboptimal in outpatient psychiatric settings, resulting in delayed identification and management of emerging cardiometabolic risk (Zelege et al., 2024). This gap

between guideline recommendations and actual practice represents the primary reason for the practice change of focus in this project.

Barriers to consistent metabolic monitoring in psychiatric care are multifactorial and occur at both individual and organizational levels. At the individual level, staff may be unfamiliar with screening recommendations, uncertain about initiating monitoring, or unclear about their responsibilities for screening and follow-up activities. At the organizational level, time constraints during clinical encounters, limited access to laboratory services, and unclear accountability for ordering and tracking screening results further hinder implementation (Hurley et al., 2023). Additionally, fragmented coordination between psychiatric and primary care providers may result in missed opportunities for early detection, referral, and intervention, further exacerbating cardiometabolic risk (Murphy et al., 2023). This body of evidence supports the presence of a modifiable systems- and knowledge-based practice gap rather than a lack of available guidelines.

Educational interventions targeting healthcare providers have demonstrated effectiveness in improving clinician knowledge, confidence, and adherence to evidence-based practices across healthcare settings. Within psychiatric settings, educating staff serves as a key approach to enhancing preventive care, especially when supported by teamwork across disciplines and organizational leadership. Interactive and case-based educational approaches have been shown to enhance clinician readiness to apply guideline recommendations in practice, especially in complex outpatient environments (Finnegan et al., 2021). This evidence supports staff education as an appropriate and evidence-based intervention to address the identified practice gap. The strength of this

evidence is moderate to strong because it is derived from peer-reviewed studies demonstrating consistent improvements in clinician knowledge and practice readiness following targeted education.

Within the outpatient psychiatric clinic project site, informal assessment of workflows and staff feedback revealed variability in metabolic screening practices and inconsistent awareness of current screening recommendations. These findings confirmed that the national and international evidence described in the literature was reflected locally, underscoring a clear practice gap related to staff knowledge and role clarity in metabolic monitoring. To systematically address this gap, I created the staff education program using the analysis, design, development, implementation, and evaluation (ADDIE) instructional design framework. In the analysis phase, I identified knowledge deficits and workflow barriers; the design and development phases guided the creation of targeted, evidence-informed educational materials; in the implementation phase, I emphasized interactive, learner-centered delivery; and evaluation involved pre- and posttest assessments to measure participants' knowledge improvement. Use of the ADDIE framework strengthened the methodological rigor of the intervention and ensured alignment with quality improvement priorities aimed at enhancing preventive care delivery and advancing health equity for individuals with serious mental illness.

Staff Education Project Development

Five outpatient psychiatric clinic staff members participated in the staff education intervention. Participants included nurse practitioners directly involved in the administration of long-acting injectable psychotropic medications, patient monitoring, and care coordination. I intentionally selected this group due to their frontline

responsibilities in managing patients at elevated cardiometabolic risk. Staff knowledge and clarity of role responsibilities are key determinants of consistent metabolic screening practices in psychiatric settings (Hurley et al., 2023; Zeleke et al., 2024).

I developed the staff education program using a structured, evidence-informed approach aligned with the ADDIE instructional design framework. Educational materials were selected to accommodate diverse learning styles and included a projector-assisted PowerPoint presentation, printed handouts summarizing metabolic syndrome criteria and evidence-based screening recommendations, pre- and posttest questionnaires, and evaluation surveys. Use of multimodal educational strategies is supported by evidence demonstrating improved clinician engagement and learning outcomes (Finnegan et al., 2021).

To implement the project, I employed an interactive, learner-centered format designed to promote engagement and practical application. The educational session took place onsite at the outpatient psychiatric clinic in a designated staff meeting room. The session began with a PowerPoint overview of metabolic syndrome, associated risk factors, and the importance of metabolic monitoring in psychiatric populations, with emphasis on risks associated with long-term injectable psychotropic medications. I used an interactive case study to apply screening recommendations to realistic outpatient scenarios, requiring participants to identify appropriate screening measures, interpret results, and determine follow-up actions. Case-based learning has been shown to enhance clinician readiness to implement evidence-based practices in complex care environments (Finnegan et al., 2021).

A facilitated group discussion followed, focusing on perceived barriers and facilitators to routine metabolic screening. Identified barriers included time constraints, limited laboratory access, and unclear role responsibility, consistent with findings in the literature (see Hurley et al., 2023; Murphy et al., 2023). Facilitators included improved staff collaboration, standardized screening tools, and leadership support.

Evaluation focused on changes in staff knowledge. I administered a 10-item pretest immediately before the session and an identical posttest upon session completion. The session concluded with a quiz review and facilitated feedback to clarify areas of uncertainty. Descriptive statistics were used to analyze pre- and posttest scores, aligning with evidence supporting pre/post assessment as an effective method for evaluating educational interventions (see Finnegan et al., 2021).

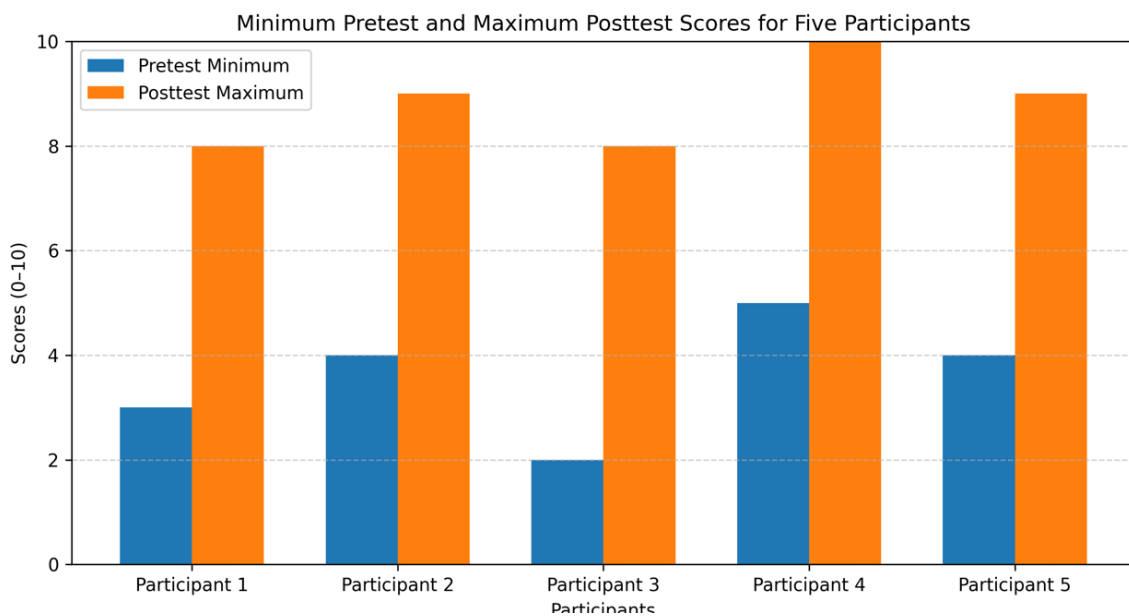
Results

Postimplementation analysis demonstrated a substantial improvement in staff knowledge following the educational intervention. Baseline assessment revealed notable knowledge gaps related to metabolic syndrome criteria, recommended screening intervals, and monitoring parameters, as reflected by a mean pretest score of 4.0 out of 10 ($SD = 0.71$). These findings confirmed the presence of inconsistent understanding of evidence-based metabolic screening practices among outpatient psychiatric staff and supported the need for targeted education. Following completion of the staff education intervention, the participants' mean posttest score increased to 7.6 out of 10 ($SD = 0.55$). All five participants demonstrated higher posttest scores compared with baseline (see Figure 1), reflecting consistent knowledge gains across varying levels of prior experience. Participant privacy was protected through the use of anonymous pre- and

posttest assessments, with no personal identifiers collected or linked to individual responses. I only reported data in aggregate form, ensuring confidentiality and preventing identification of individual participants. The reduction in standard deviation on the posttest suggests increased consistency in staff knowledge following the intervention.

Figure 1

Mean Pre- and Posttest Knowledge Scores



To further evaluate the effectiveness of the intervention, I calculated learning gain using the recommended formula and participants' mean scores (see Figure 2).

Figure 2

Normalized Learning Gain Calculation

$$\text{Learning Gain} = \frac{(\text{Post-test score} - \text{Pre-test score})}{(\text{Maximum score} - \text{Pre-test score})} \times 100$$

$$\frac{(7.6 - 4.0)}{(10 - 4.0)} \times 100 = \frac{3.6}{6.0} \times 100 = 60\%$$

This calculation demonstrates a 60% learning gain, indicating that participants achieved more than half of the possible improvement between their baseline knowledge and the maximum achievable score. This level of learning gain reflects a meaningful educational impact and supports the effectiveness of the structured, interactive staff education intervention. These findings are consistent with prior research demonstrating that targeted educational strategies improve clinician knowledge and readiness for practice change (see Finnegan et al., 2021).

The current project positively impacted the outpatient psychiatric clinic by increasing staff knowledge related to metabolic syndrome screening and clarifying staff roles in preventive monitoring. Improved knowledge supports more consistent application of guideline-concordant screening practices, earlier identification of cardiometabolic risk, and improved coordination with primary care providers. By strengthening staff competence in metabolic monitoring, the intervention supports organizational quality and safety goals and contributes to improved preventive care delivery for a high-risk patient population (see Hurley et al., 2023; Zeleke et al., 2024).

Several limitations should be considered when interpreting the results. The small sample size ($N = 5$) limits generalizability and precludes inferential statistical analysis. Additionally, I measured knowledge improvement immediately following the intervention, and long-term knowledge retention and changes in actual screening behavior were not assessed. The project relied on self-reported knowledge assessments rather than direct observation of clinical practice, which may overestimate translation into practice. Despite these limitations, the consistent improvement across all participants and

the calculated learning gain suggest that the intervention had a meaningful educational impact.

Although conducted in a single outpatient psychiatric clinic, this project addresses a widely documented gap in metabolic screening practices among patients receiving antipsychotic medications. The intervention design, grounded in evidence-based guidelines and delivered using a structured instructional framework, is replicable across outpatient psychiatric settings. Improving staff knowledge through targeted education represents a scalable quality improvement strategy that may contribute to reduced cardiometabolic risk, improved health outcomes, and advancement of health equity for individuals with serious mental illness beyond the local site (see Auxilia et al., 2023; Murphy et al., 2023).

Conclusions

This Doctor of Nursing Practice staff education project demonstrated that a structured, interactive educational intervention can significantly improve staff knowledge related to metabolic syndrome screening in an outpatient psychiatric setting. Improved staff knowledge is a critical first step toward consistent implementation of screening protocols, early identification of cardiometabolic risk, and timely referral for medical evaluation and management.

The findings support staff education as a feasible and sustainable quality improvement strategy that can be implemented within existing clinic resources. My recommendations include incorporating metabolic syndrome education into staff onboarding and annual competency training, embedding standardized screening prompts

into clinical workflows, and strengthening interprofessional collaboration to enhance monitoring and follow up (see Hurley et al., 2023; Murphy et al., 2023).

By improving screening practices for a high-risk psychiatric population, this project supports broader organizational goals related to quality, safety, and health equity. The project aligns with nursing's role in advancing population health and promoting positive social change through prevention-focused interventions that address modifiable cardiometabolic risk factors.

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