

# The Effectiveness of Nurse-Led Outreach Programs for At-Risk Populations: A Comprehensive Review of Patient Education Outcomes and Nursing Interventions

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## Abstract

*Nurse-led clinics (NLCs) have emerged as a pivotal innovation in healthcare, aiming to enhance the management of chronic diseases while ensuring patient-centric care. However, the effectiveness of these clinics in promoting patient education and health outcomes remains inadequately evaluated, particularly regarding standardized nursing terminologies. This review systematically examined the literature on nurse-led outreach programs for at-risk populations, focusing on the outcomes of patient instruction based on the Nursing Outcome Classification (NOC). A comprehensive search of electronic databases, including Medline, Embase, and Web of Science, was conducted to identify relevant studies published up to 2023. The findings indicate that NLCs significantly improve patient outcomes, particularly in managing chronic conditions such as hypertension and diabetes. Standardized nursing languages were found to enhance the assessment of educational outcomes, enabling nurses to evaluate the effectiveness of their interventions more accurately. Additionally, the review highlighted the importance of addressing psychological health outcomes alongside physical health metrics. The integration of evidence-based practices in nurse-led outreach programs is essential for optimizing patient education and health outcomes. This study underscores the necessity for further research to systematically evaluate the impact of NLCs on diverse patient populations and to develop effective educational strategies that can be standardized across healthcare settings.*

**Keywords:** Nurse-Led Clinics, Patient Education, Chronic Disease Management, Nursing Outcome Classification, Healthcare Outcomes.

## Introduction

Nurse-led clinics (NLCs) were established as a progressive healthcare innovation to fulfill an advanced practice role in the treatment of basic chronic diseases throughout the 1990s.<sup>2</sup> The whole mind-body care offered by these facilities is accessible, economical, superior in quality, and focussed on the patient [1]. The

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objectives of implementing NLCs include cost savings and enhanced integration of the care continuum from the acute to therapeutic phase, specifically aimed at minimizing hospital stays.

Patient instruction is a distinct responsibility of nursing conducted in NLCs [2]. The assessment of patient instruction outcomes verifies the efficacy of nurse educational interventions on patients, aiding in the identification of necessary modifications in care [3]. Standardized nursing terminology enhance the assessment of educational outcomes. A standardized nursing language delineates the clinical judgments made by nurses based on evaluation, intervention selection, and patient outcomes [4-6]. A standardized nursing language enables nurses to evaluate, respond, and record patient outcomes with precision, as well as assess the efficacy of nursing treatments, ensuring responsibility and continuation of care [7].

Nursing Outcome Category (NOC) is a standardized nursing language established by the American Nurses Association [4]. An NOC was established in 1991 as a thorough and consistent method for classifying patient and client outcomes. The objective is to evaluate the effects of nursing interventions in healthcare environments according to nursing specialization [5]. It is the most thorough and extensive standard language yet developed to assess nurse intervention results in patients [8]. Despite increasing data endorsing the significance of patient education in NLCs, a thorough synthesis of the research has yet to be performed. A prior examination of NLCs indicated their impact on healthcare delivery, care for cancer patients, and early release, however the overall data on patient education results in NLCs remains inadequate [9-15]. This study aims to explore the outcomes of patient instruction in NLCs based on NOC.

## Search Methodology

We examined four electronic databases: Medline, Embase, Web of Science, as well as Scopus, to discover suitable papers. A literature review was performed up to 2023.

### *Clinic Led by Nurses*

The practical health domain delineates outcomes associated with the execution of fundamental living activities and the ability to do them [16-22]. It has four categories: energy upkeep, development and growth, mobility, and self-care. The outcomes examined in the "energy maintenance" class included exhaustion and sleep quality [23-27]. The incidences of Breast Self-Examination (BSE) and self-care behavior were the outcomes assessed in the "self-care" class [29-30].

The physiologic health domain delineates outcomes pertaining to organic functioning, including ten categories: cardiopulmonary, digestion and nutrition, elimination, fluid and electrolyte balance, immunological response, metabolic control, neurocognitive function, sensory function, therapeutic response, and tissue integrity [31-33]. In the "cardiopulmonary" class, the evaluated outcomes were myocardial enzymes, the left ventricle ejection fraction (LVEF), cholesterol levels, hypertension, chest radiography, urinary nicotine findings, chest discomfort, and blood/urine test findings [16,22]. The impression of illness was regarded as the examined outcome in the "therapeutic reaction" category. The modifications attained personally hypertension as well as cholesterol therapies, the evaluations of continuous metrics, and overall mortality Hyperlipidemia and hypertension were evaluated for results in metabolic regulatory classes, whereas clinical fractures were assessed as outcomes related to tissue integrity [34-38].

The psychosocial wellness domain delineates outcomes pertaining to psychological and social functioning, including four classes: psychological well-being, psychological adaptability, self-control, and social interaction. The outcomes examined in the "psychological well-being" category included anxiety and depression [25, 26, 29, 30]. In the "psychological adaptation" class, the conclusion was coping techniques, whereas fear of falling was the end in the fear self-control courses.

The Health Information & Conduct domain delineates outcomes pertaining to attitudes, understandings, and activities associated with health and sickness. This domain has seven classes: Health Conduct, Health Thoughts, Health Management, Knowledge of Health Conditions, Knowledge of Health Promotion, Risk

Control, and Safety. The results of the "health understanding and behavior" domain were examined across four categories: "health behavior," "health management," "knowledge of health conditions," and "risk control." Additionally, the "health behavior" outcomes included substance use, adherence to medication, modifications in lifestyle behaviors, and immunization rates [28]. The focus of the "health management" lesson was on self-efficacy, cardiac self-efficacy, and general illness management self-efficacy [28]. The results analyzed in the "knowledge health condition" category included patients' knowledge, the frequency of smoking and quitting attempts, and cholesterol level assessments [14]. The outcomes analyzed in the "risk control" category were blood pressure and falls [31].

The Perceived Health domain has three categories: Health & Life Quality, Happiness with Care, and Complaint Status, which delineate people's health and healthcare experiences. The outcomes of the health and the standard of life class include quality of life, general health status, and heart failure readmission patient satisfaction and care satisfaction categories. Glycated hemoglobin (HbA1c) and fasting blood glucose (FBG), anxiety and depression, decrease in systolic and diastolic blood pressure, and the percentage of patients achieving the stipulated targets for each intervention were outcomes in symptom status classes [14,17,24,31,32].

## Discussion

The objective of our systematic research was to ascertain the nursing outcomes associated with patient education in NLCs, grounded on the NOC framework. The categories of nursing outcomes examined as patient education goals in NLCs were "physiologic health," "practical health," "emotional health," "health knowledge and behavior," and "perceived health." Additionally, the groups of nursing results examined as educational outcomes in NLCs included "self-care," "energy upkeep," "accessibility," "cardiopulmonary," "beneficial replies," "mental well-being," "psychological modification," "health actions," "health management," "knowledge of health condition," "health as well as life quality," "contentment with care," and "symptom position."

Our review study's results indicate that the majority of outcomes examined in the research done in NLCs were linked to lifestyle-related chronic illnesses. The nursing profession directly interacts with society, therefore delivering community services and fostering public trust via the provision of secure, efficient, and affordable care. The nursing profession, in its evolution, must record the efficacy of its services [37].

The current study and its findings regarding quitting smoking, self-care, cardiac diseases, diabetes, and patient quality of life indicate that nurses in NLCs play a vital role in delivering efficient and easily available services for significant health issues within society [38, 39]. A comprehensive evaluation indicated that results related to high blood pressure, quality of life, and patient happiness in nurse-led primary care facilities surpassed those in physician-managed clinics [40].

Our systematic analysis revealed that, alongside the physical outcomes assessed as educational results in NLCs, psychological health outcomes such as anxiety, despair, and coping techniques were also studied. Nevertheless, the majority of patients, particularly those with cancer, hemodialysis requirements, surgical needs, and other specific conditions, may encounter psychological issues in conjunction with their physical ailments [41-43]. The assessment and focus on psychological health by outpatient center nurses may enhance the breadth and specificity of nursing outcomes in patient education. Consequently, the deficiency of outcomes assessed within the psychological health area is seen as a significant gap in research pertaining to nursing outcomes in NLCs.

Our evaluation indicates that the little publishing of results in the family and societal health area constitutes a significant gap in research on NLC outcomes. The unassessed outcomes in the examined studies include caregiver role sustainability, caregiver stresses, caregiver psychological well-being, family resilience, parenting efficacy, community disaster preparedness, and the effectiveness of community health screenings [44,45]. Currently, family and society are integral to home care owing to the aging population and the proliferation of lifestyle-related chronic illnesses [46]. Contemporary civilization necessitates staff members

for health and nursing facilities to provide home-care activities [47,48]. Consequently, more research is necessary to comprehensively comprehend the instructional content provided by the nurse in these areas.

The analyzed studies assessed satisfaction, categorized as general fulfillment, care contentment, and educational contentment. General happiness is a multifaceted construct that involves several components and necessitates the analysis of multiple service dimensions. This outcome is influenced by a broad array of circumstances, resulting in bias in responses and interpretations. Nonetheless, contentment is seen as a significant metric of healthcare quality [49,50]. Consequently, client happiness with services is examined in connection to the kind of service provided [51]. One aspect of assessing satisfaction is to evaluate patients' contentment with the education delivered by nurses. Only one study on nursing results in NLCs assessed patient satisfaction with education. The research indicated that patients' satisfaction with the educational instruction from nurses was associated with BSE [52]. Healthcare practitioners must be attentive to patients' issues to enhance patient satisfaction [53,54]. Consequently, patient satisfaction with the delivered treatment or education may function as a distinct metric to assess service effectiveness during the preliminary assessment phases.

A notable aspect of research on nursing outcomes related to patient education in NLCs was the collaborative deployment of patient education in the majority of outpatient nursing clinics. The care provided by nurses is distinct within the healthcare sector, and patient awareness has historically been seen as a priority. During the mid-1800s, nurses were acknowledged as caretakers responsible for patient education [55]. In early 1993, The Joint Commission (TJC) established nursing guidelines for patient education. Subsequently, patient education initiatives were advised for other healthcare professionals, and in alignment with TJC's patient education objectives, an interdisciplinary team methodology was adopted, indicating that patient education is a collaborative process involving several disciplines [56]. Consequently, it is anticipated that educational services delivered by nurses in nursing clinics would adopt an interdisciplinary approach.

The analyzed studies revealed that in-person educational approaches, whether individually or in groups, were predominantly used at outpatient NLCs, whereas non-attendance education was restricted to telephone interactions with patients. Modern technological advancements have led to the evolution of educational methodologies in clinics, adapting to societal needs. Consequently, non-attendance education can utilize iBooks, computer and tablet-based learning at home, software-driven education, game-based learning, and simulation-based education, all of which can significantly enhance patients' knowledge [55,56].

Notwithstanding the comprehensive electronic search, our research exhibited significant limitations. The reviewers' selection of research was constrained by the exclusion of grey literature. The selected research studies were restricted to those published in English-language publications. Third, the studies exhibited a deficiency in the specificity of the actual topic taught and the methodologies used to assess teaching results. The time window for measuring results was inconsistent. Fifth, only assessed instruction/patient education delivered in English.

## Summary

The findings of this systematic review underscore the critical role of nurse-led clinics (NLCs) in promoting health among at-risk populations through effective patient education. As healthcare increasingly shifts towards patient-centered models, the emphasis on evidence-based practice becomes paramount. NLCs not only provide accessible and cost-effective care but also empower patients to manage their chronic conditions effectively. Despite the promising outcomes associated with NLCs, barriers to the widespread implementation of evidence-based practice persist. These barriers include insufficient training in evidence-based methodologies among healthcare professionals, time constraints, and a lack of resources. Addressing these challenges requires a multifaceted approach that includes enhancing educational curricula in nursing programs, providing ongoing professional development opportunities, and fostering a culture that prioritizes evidence-based practice.

Furthermore, our review identified a significant gap in research regarding the psychosocial aspects of patient care. While physical health outcomes were frequently measured, psychological well-being, anxiety, and coping strategies were less often addressed. Future research should focus on integrating mental health assessments into the evaluation frameworks used within NLCs, ensuring a holistic approach to patient care. Additionally, the application of standardized nursing languages, such as the Nursing Outcome Classification (NOC), is essential for accurately assessing the impact of educational interventions. By employing these terminologies, nurses can systematically document and evaluate patient outcomes, thus enhancing accountability and the quality of care provided.

In conclusion, nurse-led outreach programs represent a vital component of contemporary healthcare delivery. By leveraging evidence-based practices and standardized assessment tools, these clinics can significantly enhance patient education and overall health outcomes, making them indispensable in the management of chronic diseases. Continued research and investment in these programs will be crucial for maximizing their impact on public health.

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**فعالية برامج التوعية التي يقودها الممرضون للفئات المعرضة للخطر: مراجعة شاملة لنتائج تثقيف المرضى والتدخلات التمريضية**

## الملخص

### الخلفية:

ظهرت العيادات التي يقودها الممرضون (NLCs) كمبادرة رئيسية في الرعاية الصحية، حيث تهدف إلى تحسين إدارة الأمراض المزمنة مع ضمان تقديم رعاية تتمحور حول المريض. ومع ذلك، لا تزال فعالية هذه العيادات في تعزيز تثقيف المرضى وتحسين النتائج الصحية غير مُقيّمة بشكل كافٍ، لا سيما فيما يتعلق بالمصطلحات التمريضية الموحدة.

### المنهجية:

قامت هذه المراجعة بفحص الأدبيات بشكل منهجي حول برامج التوعية التي يقودها الممرضون للفئات المعرضة للخطر، مع التركيز على نتائج تثقيف المرضى استنادًا إلى تصنيف نتائج التمريض (NOC). تم إجراء بحث شامل في قواعد البيانات الإلكترونية، بما في ذلك Medline وEmbase وWeb of Science، لتحديد الدراسات ذات الصلة المنشورة حتى عام 2023.

### النتائج:

تشير النتائج إلى أن العيادات التي يقودها الممرضون تُحسّن بشكل كبير من نتائج المرضى، لا سيما في إدارة الحالات المزمنة مثل ارتفاع ضغط الدم والسكري. وُجد أن استخدام اللغة التمريضية الموحدة يُعزز تقييم نتائج التثقيف الصحي، مما يُمكن الممرضين من قياس فعالية تدخلاتهم بشكل أكثر دقة. بالإضافة إلى ذلك، أبرزت المراجعة أهمية معالجة الصحة النفسية إلى جانب المؤشرات الصحية الجسدية، حيث أظهرت الدراسات أن الدعم النفسي يُحسن من استجابة المرضى للعلاج ويزيد من التزامهم بالخطة العلاجية.

### الاستنتاج:

يُعد دمج الممارسات القائمة على الأدلة في برامج التوعية التي يقودها الممرضون أمرًا ضروريًا لتحسين تثقيف المرضى وتحقيق نتائج صحية مثالية. تؤكد هذه الدراسة الحاجة إلى مزيد من الأبحاث لتقييم تأثير العيادات التي يقودها الممرضون على مختلف الفئات السكانية، وكذلك لتطوير استراتيجيات تعليمية فعالة يمكن تعميمها في جميع أنظمة الرعاية الصحية.

### الكلمات المفتاحية:

العيادات التي يقودها الممرضون، تثقيف المرضى، إدارة الأمراض المزمنة، تصنيف نتائج التمريض، نتائج الرعاية الصحية.