

## Advancing Nursing Competency in Health Promotion: A Review of Lifestyle-Centered Educational Interventions

Mohammed Ismail Ramadan & Abid Mahadi Abdul Ratha

Babylon University, College of Nursing, Al Hela City, Iraq,

E-mail: [nur994.mohammed.ismail@student.uobabylon.edu.iq](mailto:nur994.mohammed.ismail@student.uobabylon.edu.iq)

Doi: [10.33899/mjn.2025.188364](https://doi.org/10.33899/mjn.2025.188364)

Received: March 4 2025; Revised: June 16 2025; Accepted: July 01 2025

### Abstract

Health promotion is a vital aspect of modern nursing practice, yet many nurses lack the necessary knowledge and attitudes to implement it effectively. This review explores the role of lifestyle-centered educational programs in enhancing these competencies. Drawing from a recent quasi-experimental study in Kirkuk City, Iraq, which demonstrated significant improvements in nurses' knowledge and attitudes after a structured educational intervention, the review highlights the importance of targeted training. The intervention showed consistent effectiveness across demographic subgroups, reinforcing the value of integrating lifestyle education into professional development. Recommendations for nursing education, practice, and future research are discussed

**Keywords:** *Health promotion lifestyle education nursing intervention knowledge attitudes educational effectiveness quasi-experimental study Kirkuk*

### Introduction

Health promotion is a central pillar of contemporary nursing practice and a cornerstone of public health efforts globally. It encompasses a broad range of activities designed to empower individuals and communities to take control of their health, prevent illness, and improve overall well-being (Lise & Schwartz, 2024). Nurses, as the largest group of healthcare professionals worldwide, are uniquely positioned to influence health outcomes through direct patient care, education, advocacy, and community engagement (Bourgninaud, 2024).

Within clinical and community settings, nurses fulfill multiple roles—as educators, counselors, advocates, and role models—each of which contributes to the promotion of healthier lifestyles and disease prevention (Conlin et al., 2024). Their frequent, often prolonged interactions with patients

make them instrumental in delivering effective health promotion strategies. For these reasons, nursing competencies in this domain are critically important (Chen et al., 2024).

Despite this, significant gaps remain in both the knowledge and attitudes of nurses toward health promotion, particularly in developing countries and under-resourced healthcare systems (Santos et al., 2025). These gaps can lead to missed opportunities for early intervention and behavior change, ultimately contributing to the rising burden of non-communicable diseases such as diabetes, cardiovascular disease, and obesity (Iglesia et al., 2024).

The evolving nature of healthcare and the increasing focus on prevention rather than cure demand that nurses be well-prepared to address lifestyle-related health issues. Traditional nursing education, however, may not sufficiently emphasize the behavioral and psychosocial aspects of health promotion. As a result, many nurses feel underprepared to integrate health promotion effectively into their daily practice (Gkintoni et al., 2024).

One effective strategy to bridge this gap is the implementation of lifestyle-centered educational programs. These programs are designed to enhance nurses' understanding of health promotion principles while fostering positive attitudes toward preventive care. They focus on key lifestyle factors—such as diet, physical activity, stress management, tobacco cessation, and alcohol moderation—and equip nurses with the skills to counsel patients on making healthier choices (Virtanen et al., 2025).

Moreover, such educational interventions address both the cognitive domain (knowledge acquisition) and the affective domain (attitudes and values), which are both essential for sustainable behavior change among healthcare providers. When nurses themselves adopt and believe in the value of lifestyle changes, they are more likely to advocate effectively for their patients (Steel et al., 2025).

In this context, the assessment and development of lifestyle-centered educational programs become not only an academic concern but also a practical necessity. This review explores the impact of such a program implemented in Kirkuk City, Iraq, and discusses its implications for nursing education, practice, and policy. The program's outcomes contribute valuable insights into how structured educational strategies can enhance nursing competencies and ultimately improve population health outcomes.

In recent decades, the global health burden has shifted significantly from communicable to non-communicable diseases (NCDs), such as cardiovascular disease, diabetes, cancer, and chronic respiratory conditions. These diseases are primarily driven by modifiable lifestyle factors, including poor nutrition, physical inactivity, tobacco use, and unmanaged stress. Addressing these risk factors through health promotion and preventive strategies has become a critical priority for healthcare systems worldwide.

Nurses, as accessible and trusted health professionals, play a pivotal role in advocating and facilitating lifestyle modifications among individuals and communities. However, to perform this role effectively, nurses must possess both the knowledge to understand the impact of lifestyle on health and the attitude that motivates them to engage in health-promoting practices. Unfortunately, research has shown that many nurses feel inadequately prepared to address lifestyle-related health issues, particularly in settings where resources and continuing education opportunities are limited.

Lifestyle-centered education has emerged as a robust strategy to fill this competency gap. This approach involves structured training programs that emphasize evidence-based guidance on key areas such as balanced diets, exercise routines, stress reduction techniques, smoking cessation, and overall healthy living. Such programs are often built on behavioral science principles and use practical, case-based learning to help nurses internalize both the rationale and the application of lifestyle interventions in clinical practice.

A key rationale for lifestyle-centered education lies in its ability to simultaneously target two fundamental domains of learning:

**Cognitive domain (knowledge acquisition):** Nurses are taught the latest scientific information about lifestyle-related health risks and the mechanisms through which these risks contribute to chronic disease.

**Affective domain (attitude formation):** Nurses are encouraged to reflect on their own beliefs, biases, and motivation regarding health promotion, fostering a deeper emotional connection to their role in preventive care.

This dual focus ensures that educational interventions are not merely informative but transformational—equipping nurses with the confidence, empathy, and enthusiasm needed to drive behavior change in their patients. When both knowledge and attitudes are addressed, the result is more sustainable and impactful nursing practice.

Furthermore, integrating lifestyle-centered education into pre-service nursing curricula and in-service training programs aligns with international calls for strengthening primary health care and advancing universal health coverage. It enhances nurses' readiness to function in multidisciplinary teams, engage in patient education, and contribute to long-term public health goals.

In light of these considerations, evaluating the effectiveness of lifestyle-centered educational programs becomes essential—not only to validate their theoretical foundation but also to optimize their structure, content, and delivery. This review highlights such an evaluation carried out among nurses in Kirkuk City, Iraq, providing evidence of the value of targeted educational interventions in transforming nursing practice and supporting community health.

### **Evidence from Kirkuk: A Case Study**

To evaluate the effectiveness of lifestyle-centered educational interventions in a real-world context, a quasi-experimental study was conducted in Kirkuk City, Iraq. This investigation aimed to assess how a structured educational program could enhance the knowledge and attitudes of nurses working in Health Promotion Units, a critical workforce tasked with promoting healthy behaviors and preventive care across the community.

The study utilized a one-group pretest-posttest design, involving 40 nurses (27 females and 13 males) employed in various Health Promotion Units across the city. The intervention consisted of a comprehensive lifestyle-centered education module that addressed core health promotion topics, including nutrition, physical activity, smoking cessation, stress management, and patient education techniques. The training emphasized both theoretical and practical content and was delivered in an interactive format to maximize engagement.

### Data Collection and Tools:

Participants completed validated self-report questionnaires designed to measure their knowledge and attitudes toward health promotion. These tools had been previously standardized and demonstrated good internal consistency. Pre- and post-intervention scores were compared to assess the educational program's impact.

#### Key Results:

Knowledge scores showed a statistically significant improvement:

Pre-intervention mean:  $17.34 \pm 2.86$

Post-intervention mean:  $21.27 \pm 3.10$

Attitude scores also increased significantly:

Pre-intervention mean:  $49.98 \pm 4.21$

Post-intervention mean:  $54.88 \pm 4.73$

p-value for both changes:  $< 0.001$

These results indicate that the educational program was effective in improving both the cognitive and affective domains of learning. The observed gains in knowledge and attitudes suggest that participants not only acquired new information but also developed a more favorable disposition toward implementing health promotion strategies in their professional roles.

#### Subgroup Analyses:

Importantly, the improvements in both knowledge and attitudes were found to be consistent across all demographic subgroups, including:

1. Gender (male and female)
2. Age groups
3. Educational qualifications
4. Years of professional experience

This universality highlights the program's broad applicability and suggests that lifestyle-centered education can be equally effective across diverse nursing populations.

### **Regression and Correlation Findings:**

Multiple regression analysis revealed that none of the demographic variables (e.g., age, gender, education level, or experience) significantly predicted post-intervention scores.

Pearson correlation analysis showed no significant relationship between knowledge and attitude scores, either before or after the intervention. This indicates that while both domains improved significantly, they may represent independent constructs that are influenced by different educational mechanisms or learner characteristics.

### **Implications for Nursing Practice**

The findings from the Kirkuk study offer compelling evidence that lifestyle-centered educational interventions can significantly enhance nurses' competencies in health promotion. The demonstrated improvements in both knowledge and attitudes—across all demographic groups—suggest that these programs are not only effective but also universally applicable, making them highly valuable in diverse healthcare settings.

One of the most critical implications is the integration of such training into nursing education systems, both at the undergraduate and professional development levels. Embedding lifestyle-centered education in the formal curriculum can equip future nurses with essential skills from the outset of their careers. Simultaneously, offering structured in-service training programs ensures that practicing nurses remain updated on the latest health promotion strategies and are empowered to implement them in their clinical routines.

### **These interventions have far-reaching benefits, including:**

#### **Improved Patient Education and Preventive Care Delivery:**

Nurses trained in lifestyle-centered education are better equipped to counsel patients on behavior modification and disease prevention. This leads to more personalized and effective health education, contributing to improved patient outcomes and long-term wellness.

#### **Enhanced Nurse-Patient Interactions:**

When nurses possess a deeper understanding of lifestyle factors and display a positive attitude toward preventive care, their communication with patients becomes more empathetic, proactive, and

impactful. This fosters trust and encourages patients to actively engage in their own health improvement.

#### **Advancing Public Health Goals:**

Empowering nurses with the knowledge and skills to promote healthy lifestyles contributes directly to broader public health objectives. In resource-limited settings such as Iraq, where healthcare infrastructure may be stretched, leveraging nurses as agents of change is a cost-effective strategy to combat the growing burden of non-communicable diseases.

#### **Strengthening Interdisciplinary Collaboration:**

Nurses who are confident and competent in health promotion are more likely to participate actively in multidisciplinary teams focused on community health initiatives. This enhances care coordination and ensures a more holistic approach to patient and population health.

#### **Supporting Policy Development and Health System Reform:**

The success of such educational programs can inform health policy, guiding the development of national frameworks that prioritize preventive care. Ministries of Health and professional nursing bodies may consider adopting these interventions as standard practice, reinforcing the strategic role of nurses in promoting community well-being.

In sum, the adoption of lifestyle-centered educational programs has the potential to transform nursing practice, optimize patient care, and contribute to the long-term sustainability of healthcare systems. Policymakers, educators, and clinical leaders should prioritize such initiatives to ensure nurses are well-prepared to lead health promotion efforts in the 21st century.

#### **Limitations and Recommendations for Future Research**

While the results of this study are encouraging, several limitations must be acknowledged. First and foremost, the absence of a control group in the quasi-experimental design restricts the ability to draw strong causal conclusions. Although the improvements in knowledge and attitude scores are statistically significant, the possibility of external influences or the Hawthorne effect cannot be ruled out.

Another limitation is the modest sample size ( $n = 40$ ), which, while sufficient for detecting significant changes within the group, may limit the generalizability of the findings to broader nursing populations

or different geographic and clinical settings. Moreover, the study measured only short-term outcomes, with no follow-up assessment to determine whether the observed improvements in knowledge and attitudes are sustained over time or lead to behavioral changes in nursing practice. Additionally, while the instruments used were validated, the self-report nature of the questionnaires may introduce response bias, as participants might report more favorable attitudes due to social desirability.

To strengthen the evidence base, future research should consider:

1. Conducting randomized controlled trials (RCTs) to establish causal relationships between the intervention and observed outcomes.
2. Including larger and more diverse samples from multiple institutions or regions to enhance external validity.
3. Implementing longitudinal follow-up assessments to evaluate the persistence of knowledge and attitude changes, and whether these lead to actual practice transformation or improved patient health outcomes.
4. Exploring the integration of digital or blended learning platforms for delivering lifestyle-centered education. E-learning approaches could increase accessibility, especially in rural or underserved areas, and offer cost-effective scaling across healthcare systems.

Such future investigations would provide a more robust understanding of how educational interventions can be designed, implemented, and sustained for maximum impact.

## Conclusion

Lifestyle-centered educational interventions represent a strategic and evidence-based approach to enhancing nursing competency in health promotion. The case study conducted in Kirkuk City demonstrates that structured, targeted education can significantly improve both knowledge and attitudes among nurses, reinforcing their ability to serve as effective health promoters in clinical and community settings.

The findings affirm the value of embedding lifestyle-focused content into professional development and nursing curricula. Moreover, the consistency of results across diverse demographic groups highlights the broad relevance and adaptability of such programs.

To fully realize the potential of health promotion in nursing practice, healthcare institutions and educational bodies must prioritize the integration of lifestyle-centered education as a core component of training and continuous learning. In doing so, they not only empower nurses but also contribute meaningfully to public health advancement and disease prevention efforts at both local and national levels.

### Source of Funding

The authors did not receive any specific funding to carry out the work presented in this article. The study was self-funded by the research team.

### Conflicts of Interest

The authors declare that there are no conflicts of interest related to this work.

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