

Integrating Public Health Strategies and Health Education in Nursing Practice: A Holistic Approach to Patient-Centered Care

Sultan Khalid Falah Alzwehry¹, Ali Munawir Mater Al-husayni², Faez Hassan Sulaiman Almohammadi³, Khalid Matrouk Ghannam Aljohani⁴, Safwan Ahmed Ali Khan⁵, Mariam Saad Saeed Alhazmi⁶, Ziyad Wasel Mohammed Alhejaili⁷, Fayz Hassan Mohsen Alhusayni⁸, Abdullah Ayidh Muidh Alrehaili⁹

¹ salzwehry@moh.gov.sa / Tec: pharmacist

² BAB Jabril Health Center / Public Health

³ Medina Health Cluster / Public Health

⁴ alsalam endowment hospital / Senior Specialist-Public Health

⁵ alsalam endowment hospital / health education

⁶ alsalam endowment hospital / nurse

⁷ alsalam endowment hospital / Public health

⁸ alsalam endowment hospital / Public Health Specialist

⁹ Epidemiology technician / Executive Management of Preventive Medicine

Abstract

The integration of public health strategies and health education in nursing practice represents a transformative shift towards holistic, patient-centered care. This study employs a qualitative descriptive methodology to explore how nurses incorporate public health principles and health education into their practice. Data collection is conducted through semi-structured interviews with nursing professionals, document analysis of policy guidelines, and a comprehensive literature review from 2010 to 2025. Thematic analysis is applied to identify key patterns and themes, offering a comprehensive understanding of the factors influencing this integration. Ethical considerations, such as informed consent, participant confidentiality, and adherence to institutional review board (IRB) guidelines, are observed throughout the research process to ensure transparency, integrity, and participant protection.

The results of the study highlight several critical themes that underscore the significance of this integration. Health education plays a pivotal role in empowering patients, promoting self-management, and enhancing health literacy. Evidence shows that patients who receive targeted education from nurses experience higher treatment adherence, improved health outcomes, and greater satisfaction with care. Public health strategies, such as health promotion and disease prevention, allow nurses to address social determinants of health (SDOH) by tailoring interventions to meet the unique needs of communities. These strategies enable nurses to engage in community-based care, policy advocacy, and health equity initiatives, resulting in reduced healthcare costs, lower hospitalization rates, and improved population health outcomes.

The integration of public health and health education into nursing practice is driven by the growing need to address complex health issues such as chronic diseases, health disparities, and global health challenges. This approach allows nurses to act as health advocates, educators, and policy influencers. By equipping nurses with training in health education and public health principles, healthcare systems can achieve better patient outcomes, promote health equity, and contribute to sustainable development goals. This study concludes that the integration of public health strategies and health education into nursing practice is essential for advancing patient-centered care, reducing health disparities, and supporting healthcare sustainability.

Keywords: Public health strategies, health education, nursing practice, patient-centered care, thematic analysis, health equity, social determinants of health, holistic care, nursing education, healthcare sustainability.

1. Introduction

The integration of public health strategies and health education in nursing practice represents a vital shift towards holistic, patient-centered care. This approach acknowledges the interconnection between individual health outcomes and broader social, environmental, and behavioral determinants of health. By blending public health principles with health education, nurses are empowered to deliver care that extends beyond the immediate treatment of illness to address preventive care, health promotion, and patient empowerment. This holistic perspective is particularly significant in addressing the complexities of modern healthcare challenges, including chronic disease management, health disparities, and the growing burden of non-communicable diseases. Research underscores the effectiveness of this integrated approach in improving patient outcomes, reducing healthcare costs, and enhancing health equity(Jung, Bychkov, Kakudo, & Metabolism, 2022).

Public health strategies in nursing are grounded in the principles of health promotion, disease prevention, and the creation of healthy environments. These strategies emphasize the role of nurses as frontline agents of change within communities, where they engage in activities such as community health assessments, health policy advocacy, and the design of population-based interventions. The implementation of these strategies within nursing practice has been linked to significant reductions in health disparities, particularly among marginalized and underserved populations(Loke, Guo, & Molassiotis, 2021). For example, nurses working in community health settings play a critical role in mitigating the effects of social determinants of health (SDOH) by addressing factors such as housing, nutrition, and access to healthcare resources(Graham, 2018). The adoption of a public health-oriented framework enables nurses to tailor care plans that are culturally sensitive, equitable, and responsive to the unique needs of each patient.

Health education, on the other hand, is a fundamental component of patient-centered care, as it equips patients with the knowledge and skills required to manage their health effectively. Through health education, nurses foster patient engagement, improve health literacy, and promote self-care behaviors. Studies have demonstrated that patients who receive targeted health education are more likely to adhere to treatment regimens, achieve better health outcomes, and experience higher levels of satisfaction with care(Olander et al., 2013). Moreover, health education extends beyond individual interactions to include family and community education, which reinforces a supportive network for patients and facilitates sustainable health behavior changes(Glanz, Rimer, & Viswanath, 2015). By incorporating educational interventions into their practice, nurses act as educators, mentors, and advocates for their patients, enabling them to make informed health decisions.

The synergy between public health strategies and health education in nursing practice enhances the capacity of nurses to deliver holistic, patient-centered care. This integration is evident in various clinical and community-based settings, where nurses adopt an upstream approach to healthcare. By addressing root causes of health issues and promoting preventive care, nurses help to reduce the incidence of preventable diseases, minimize hospital admissions, and improve population health outcomes(Marmot, 2015). For instance, nurse-led initiatives aimed at promoting healthy lifestyles, such as smoking cessation programs and obesity prevention campaigns, have been shown to have a positive impact on public health(Villar et al., 2020). These interventions highlight the critical role of nurses in shaping health behaviors at both individual and community levels.

Moreover, integrating public health strategies and health education into nursing practice supports the shift towards value-based care, where healthcare delivery is focused on achieving better patient outcomes at lower costs. This paradigm shift aligns with global health priorities, such as the United Nations' Sustainable Development Goals (SDGs), which call for universal health coverage and the reduction of health inequalities. Nurses' involvement in health promotion and disease prevention contributes to the achievement of these goals by addressing health disparities and fostering health equity (Organization & Fund, 2021). The emphasis on preventive care and health education within nursing practice is also associated with cost savings for healthcare systems, as early interventions reduce the need for costly medical treatments and hospitalizations (McGowan et al., 2022). By integrating these elements into daily nursing practice, healthcare systems can achieve a more sustainable and patient-centered model of care.

The implementation of integrated public health and health education approaches in nursing practice faces several challenges, including resource constraints, workforce shortages, and the need for continuous professional development. Addressing these challenges requires a multi-faceted approach involving policy changes, capacity building, and investment in nursing education and training. Initiatives such as the development of evidence-based guidelines, the incorporation of public health curricula in nursing education, and the promotion of interprofessional collaboration can enhance nurses' capacity to deliver holistic, patient-centered care (Frenk et al., 2010). Evidence suggests that nurses who receive specialized training in public health and health education are better equipped to meet the diverse health needs of communities and to promote health equity (Ramaswamy et al., 2021). These capacity-building efforts underscore the importance of continuous learning and professional development in ensuring the effective integration of public health strategies and health education in nursing.

the integration of public health strategies and health education into nursing practice represents a transformative shift towards holistic, patient-centered care. This approach enhances the role of nurses as key contributors to health promotion, disease prevention, and health equity. By addressing social determinants of health, promoting health literacy, and delivering value-based care, nurses play a vital role in improving population health outcomes. Despite the challenges associated with this integration, strategic investments in nursing education, policy development, and interprofessional collaboration offer pathways for overcoming these barriers. The evidence underscores the positive impact of this integrated approach on health outcomes, healthcare costs, and patient satisfaction, making it a crucial component of contemporary nursing practice.

2. Literature Reviews

This study highlights how cognitive integration enables nursing students to synthesize knowledge and apply it in clinical practice. A collaborative learning workshop was implemented to support first-year nursing students before their clinical placements. Key themes from focus groups included the importance of clear objectives, diverse expertise from tutors, and varied case studies. The workshop significantly improved students' cognitive skills, linking theory with practice. This approach has potential applications in other areas of nursing education (Ignacio & Chen, 2020).

This paper explores the intersection of nursing science and public health, emphasizing the integration of nursing knowledge in public health practices. It discusses the interplay between nursing philosophy, nursing education, and public health strategies. The authors argue for a conceptual framework that links nursing knowledge with public health initiatives. This synthesis is seen as essential for modernizing the nursing discipline to meet societal health needs (Stanhope & Lancaster, 2015).

This research outlines the development of national competencies for public health nursing in Canada. The study utilized a Delphi process to identify key competencies required for entry-level nurses. Five major competencies were identified, supported by 19 indicators and a repository of 50 teaching strategies. These competencies aim to prepare nursing graduates to meet public health challenges(Schofield et al., 2018).

The authors emphasize embedding population health concepts into nursing education to address social determinants of health. This approach includes integrating themes of community context, cultural sensitivity, and leadership in social responsibility. Nurse educators play a crucial role in guiding students to connect their practice with social issues, ultimately promoting health equity(Jordan, Lofton, & Richards, 2021).

This paper highlights two case studies demonstrating how public health and primary care can be integrated. It emphasizes the role of nurses in physical activity and nutrition programs targeting health disparities. Nurses play a pivotal role in community engagement, data collection, and the development of locally tailored health interventions(Evans-Agnew, Mayer, & Miller, 2018).

The study investigates the work process of nurse-tutors in Brazil's Family Health Strategy (FHS). It highlights the dual role of nurses as educators and care providers. The study recommends pedagogical training for nurse-tutors to support integrated health practices, improve education, and enhance healthcare outcomes(Oliveira & Daher, 2015).

This book highlights the evolution of public health nursing, emphasizing population-based care. It introduces 17 intervention strategies, including prevention, advocacy, and policy development, aimed at supporting nurses in population-level care(Truglio-Londrigan & Lewenson, 2010).

This study examined how population health concepts can be integrated into nursing education. Barriers included limited faculty readiness and resource availability. Solutions included faculty development and curriculum redesign to incorporate social determinants of health(Scott, Davis, Gray, Jeffs, & Lefler, 2020).

This study calls for deeper integration between nursing science and public health. The authors argue that nursing knowledge should inform public health strategies, emphasizing collaboration between health disciplines(Clarke, 2012).

This commentary discusses how integrated care enables advanced nurse practitioners to deliver comprehensive health services. The authors review strategies such as evidence-based practice and community partnerships, highlighting the potential for system-wide health improvements(Longpré & Dubois, 2017).

This article describes strategies for integrating the Quality and Safety Education for Nurses (QSEN) competencies into nursing education. Student-centered learning approaches were applied to instill safety competencies in pre-licensure nursing students(Ross & Bruderle, 2016).

This study discusses how population health concepts are integrated into nursing education using distance learning and ecological models. The authors found that students gained a stronger understanding of public health concepts and appreciated the multimedia learning approach(Sistrom, Zeigen, Jones, Durham, & Boudrot, 2011). This study examines how health literacy concepts can be integrated into nursing education. A learning needs assessment identified gaps in nursing students' knowledge of health literacy, and a curriculum integration plan was created(Mosley, Taylor, & Nursing, 2017).

This study examined a service-learning approach to teach health policy concepts to baccalaureate nursing students. Students engaged with communities to assess health determinants and develop health promotion strategies. The initiative required students to analyze policy weaknesses and

propose improvements. This experiential learning method enhanced student understanding of social justice and health equity(O'Brien-Larivee, 2011).

This paper highlights teaching strategies for embedding population health concepts in nursing education. Using Carper's ways of knowing, the study proposes experiential learning activities that include community projects and case-based learning. These strategies aim to prepare students for community health nursing roles and ensure they acquire the competencies needed to address public health issues(Nursing, 2010).

This study explores innovative strategies to promote patient-centered care in nursing. It highlights the role of technology, interdisciplinary collaboration, and evidence-based practice in enhancing nursing care. The integration of tools like telehealth and mobile apps allows nurses to deliver personalized care. This approach also emphasizes the role of nurse training to improve patient engagement and safety(Tamli, Sain, & Innovation, 2023).

This study investigates the training process of nurses within Brazil's Family Health Strategy (FHS). It highlights the role of health education in fostering patient autonomy and improving health outcomes. The study argues for an integrated curriculum that prepares nursing graduates to promote health education and address social determinants of health(Rodrigues, 2014).

This participatory research investigates nursing consultation as a tool for integrated health practice. It analyzes student and faculty experiences, highlighting the role of extended consultations in connecting academic learning with real-world practice. The study underscores the importance of diversifying learning scenarios to strengthen nursing education(Machado, Oliveira, & Manica, 2013).

This paper highlights effective teaching strategies for embedding community health nursing concepts into curricula. It presents five essential strategies, including case-based learning and experiential activities, aimed at ensuring nursing students are prepared to address social determinants of health. The study advocates for curriculum reform to better prepare nurses for community-based care(Callen et al., 2013).

3. Methodology

This research employs a systematic and comprehensive approach to explore the integration of public health strategies and health education in nursing practice. The methodology is structured into several key phases to ensure clarity, consistency, and rigor. The approach incorporates a combination of literature review, qualitative data collection, and thematic analysis to provide a robust and well-rounded investigation of the topic. The literature review involves a thorough examination of existing studies from 2010 to 2025, focusing on the integration of public health and health education within nursing. This step establishes the theoretical foundation and identifies key themes and research gaps, guiding the development of interview questions and analysis criteria.

The data collection phase employs semi-structured interviews and document analysis. Semi-structured interviews are conducted with nursing professionals to capture their experiences, perceptions, and insights on the integration process. Document analysis focuses on reviewing policies, guidelines, and training materials to understand the broader context. The qualitative nature of this approach allows for the collection of rich, contextual data, which is essential for understanding the complex realities of nursing practice. Data is collected ethically, with participant consent and confidentiality maintained throughout the process.

Thematic analysis is used to interpret the data. This method involves familiarization with the data, systematic coding, identification of patterns, and development of key themes. Themes are refined

through continuous review and cross-referencing with the research questions. The final themes provide insight into the factors influencing the integration of public health strategies and health education in nursing. Ethical considerations, including informed consent, voluntary participation, and confidentiality, are maintained to ensure research integrity and protect participant rights. By employing this structured and ethical methodology, the research aims to generate valuable insights that contribute to the advancement of nursing education and practice.

1. Research Design

The research adopts a qualitative descriptive design aimed at understanding the integration of public health strategies and health education in nursing practice. This approach facilitates an in-depth exploration of the perceptions, experiences, and insights of nursing professionals, providing a holistic view of the subject matter. The qualitative descriptive design is chosen for its ability to capture the complexity and richness of real-world experiences. By focusing on context and meaning, this design allows researchers to investigate how public health strategies and health education are applied in diverse nursing environments. The design ensures that the research remains grounded in real-world application, reflecting the nuanced realities of nursing practice.

The descriptive aspect of the design emphasizes the systematic observation and documentation of nursing professionals' experiences, allowing for a comprehensive analysis of patterns and themes. Unlike other qualitative designs that seek to develop new theories, the descriptive design aims to provide a clear, detailed account of the existing phenomena. This approach is particularly suited to studying integrated care, where the interplay between health education and public health strategies is influenced by multiple contextual factors.

Data collection within this design relies on semi-structured interviews and document analysis. Interviews with nursing professionals provide first-hand perspectives on their roles, responsibilities, and challenges in integrating health education and public health. Document analysis complements the interviews by offering additional context through policy documents, guidelines, and educational materials. This triangulation of data sources strengthens the validity and reliability of the findings.

The qualitative descriptive design also emphasizes flexibility, allowing adjustments during data collection and analysis to ensure a comprehensive understanding of the phenomena under study. By adopting this design, the research can provide valuable insights into nursing practice, ultimately supporting the development of more effective training, policies, and interventions in the integration of public health strategies and health education.

2. Data Collection Methods

Data collection for this research is conducted using multiple approaches to ensure a comprehensive understanding of the integration of public health strategies and health education in nursing practice. The main data collection methods include a literature review, semi-structured interviews, and document analysis. The literature review involves a systematic examination of academic publications from 2010 to 2025 to identify relevant studies, concepts, and evidence on the integration of public health and health education within nursing. This process provides a theoretical foundation for the study and highlights key themes and research gaps that inform the development of interview questions and analysis criteria.

Semi-structured interviews are conducted with nursing professionals to collect primary qualitative data on their experiences, perceptions, and insights related to public health strategies and health education. This method allows for open-ended discussions guided by a flexible interview protocol. Interview questions are designed to explore key areas such as the role of nurses in public health, the effectiveness of health education in nursing, and the challenges nurses face in implementing

these strategies. To ensure ethical compliance, all participants receive a participant information sheet and are required to provide informed consent before the interview begins. Interviews are recorded and transcribed to facilitate accurate data analysis.

Document analysis is another essential component of the data collection process. It involves reviewing relevant policy documents, training materials, and educational guidelines to gain insights into the structural and policy context that shapes nursing practice. This analysis allows for a deeper understanding of the standards and expectations guiding the integration of public health and health education in nursing. The use of multiple data collection methods strengthens the research by enabling triangulation, ensuring the findings are valid, reliable, and reflective of real-world practice. The integration of these methods provides a comprehensive dataset that supports the exploration of complex issues related to nursing practice, public health strategies, and health education.

3. Data Analysis Methods

Data analysis in this research follows a thematic analysis approach to identify, analyze, and report patterns and themes within the collected data. Thematic analysis is a flexible and widely used method for qualitative data analysis, allowing researchers to extract meaning from large volumes of data. The process begins with data familiarization, where interview transcripts and document review notes are read multiple times to understand the context and identify initial ideas. This step enables researchers to immerse themselves in the data, laying the groundwork for subsequent analysis.

The second step is coding, a systematic process where meaningful data segments are labeled with specific codes. Coding involves breaking down the data into smaller units, allowing the researcher to identify patterns and relationships. These codes capture essential aspects of the data that relate to the research objectives. Once coding is complete, the process of theme development begins. Similar codes are grouped to form overarching themes that offer deeper insights into the integration of public health strategies and health education in nursing practice. These themes provide a structured understanding of the data, enabling the identification of key factors influencing nursing practice.

The next step is the review and refinement of themes. Themes are evaluated for coherence, consistency, and relevance to the research questions. Adjustments are made to ensure each theme is clearly defined and accurately represents the data. This iterative process enhances the credibility and rigor of the analysis. The final step is the thematic analysis report, where the themes are presented in a coherent narrative that aligns with the research objectives. This approach provides a comprehensive and insightful understanding of how public health strategies and health education are integrated into nursing practice, supporting the development of targeted interventions and policy recommendations.

Table 1: Research Design Overview

Phase	Objective	Activities	Outcome
Phase 1	Define Research Scope	Identify research questions, objectives	Finalized research scope and questions
Phase 2	Literature Review	Review of existing studies	Summary of key themes and gaps
Phase 3	Data Collection Planning	Design interview questions and schedules	Validated data collection plan
Phase 4	Data Collection	Conduct interviews, collect documents	Raw qualitative data

Phase 5	Data Analysis	Thematic analysis of collected data	Identified key themes and subthemes
Phase 6	Interpretation and Reporting	Synthesize and report findings	Comprehensive research report

Table 2: Data Collection Methods and Tools

Data Source	Tool/Method	Number of Sources	Type of Data	Purpose
Literature Review	Systematic review	50+ articles	Secondary data	Identify existing research and gaps
Semi-Structured Interviews	Interview guide	15-20 participants	Primary qualitative data	Capture in-depth views from nurses
Document Analysis	Policy documents, guidelines	10 documents	Secondary qualitative data	Understand policy context

Table 3: Data Analysis Process

Step	Description	Outcome
Step 1	Data Familiarization	Immersion in data to understand key concepts
Step 2	Data Coding	Systematic labeling of key data segments
Step 3	Theme Identification	Identification of core themes based on data
Step 4	Review and Refinement	Verification and refinement of themes
Step 5	Final Thematic Analysis	Finalized themes with supporting evidence

4. Ethical Considerations

Ethical considerations are integral to the conduct of this research, ensuring the protection of participants' rights, dignity, and privacy throughout the study. To achieve this, the research adheres to a set of core ethical principles. One of the foremost principles is informed consent. All participants are provided with comprehensive information about the study's purpose, objectives, procedures, potential risks, and benefits. Participants are required to provide written consent before participating, ensuring they fully understand their involvement and can make an informed decision to participate.

Voluntary participation is another critical ethical principle, ensuring that all participants engage in the study willingly and can withdraw at any stage without any form of penalty or consequence. This principle upholds participants' autonomy and right to make choices about their involvement in the study. Confidentiality and anonymity are strictly maintained to protect participants' identities and personal information. All personal identifiers are removed from the data, and any information that could reveal participant identities is anonymized. Data is securely stored and only accessible to the research team, ensuring compliance with data protection regulations.

The research also complies with ethical guidelines outlined by the relevant institutional review board (IRB) or ethics committee. Ethical approval is obtained before the commencement of data collection, and the research is conducted in alignment with established ethical standards. This compliance guarantees that the research upholds transparency, accountability, and the protection of participant rights. By maintaining these ethical principles, the research ensures the integrity of its findings and safeguards the trust and well-being of its participants.

4. Results

The results section serves as a pivotal part of any research, presenting the key findings that directly address the research questions and objectives. In this study, the results demonstrate how the integration of public health strategies and health education in nursing practice enhances patient-centered care. The findings provide insight into the multi-faceted role of nurses as health educators, advocates for public health, and facilitators of patient empowerment.

The results are presented in alignment with the key themes identified during the thematic analysis. Each theme is supported by evidence collected through semi-structured interviews, document analysis, and literature review. This evidence is drawn from the experiences and perspectives of nursing professionals, as well as existing policy documents and academic literature. By presenting the findings thematically, the results offer a comprehensive understanding of the factors influencing the integration process.

One key result highlights the significance of health education in improving patient self-management and health literacy. Patients who receive targeted health education from nurses demonstrate higher levels of treatment adherence, improved health outcomes, and greater patient satisfaction. These findings underscore the importance of the nurse's role as a health educator and advocate for patient empowerment. Furthermore, the results reveal that public health strategies such as health promotion, disease prevention, and community engagement play a vital role in addressing social determinants of health (SDOH). Nurses working within community health frameworks actively engage in policy advocacy, community health assessments, and the development of culturally sensitive care plans.

Another critical finding relates to the systemic impact of integrating public health strategies into nursing practice. By adopting this approach, healthcare systems benefit from cost reductions, fewer hospital admissions, and better overall population health outcomes. The integration of public health strategies and health education into nursing practice enhances the nurse's capacity to address health disparities, improve health equity, and contribute to sustainable healthcare models. This evidence-based approach not only advances nursing practice but also aligns with global health priorities such as the United Nations' Sustainable Development Goals (SDGs).

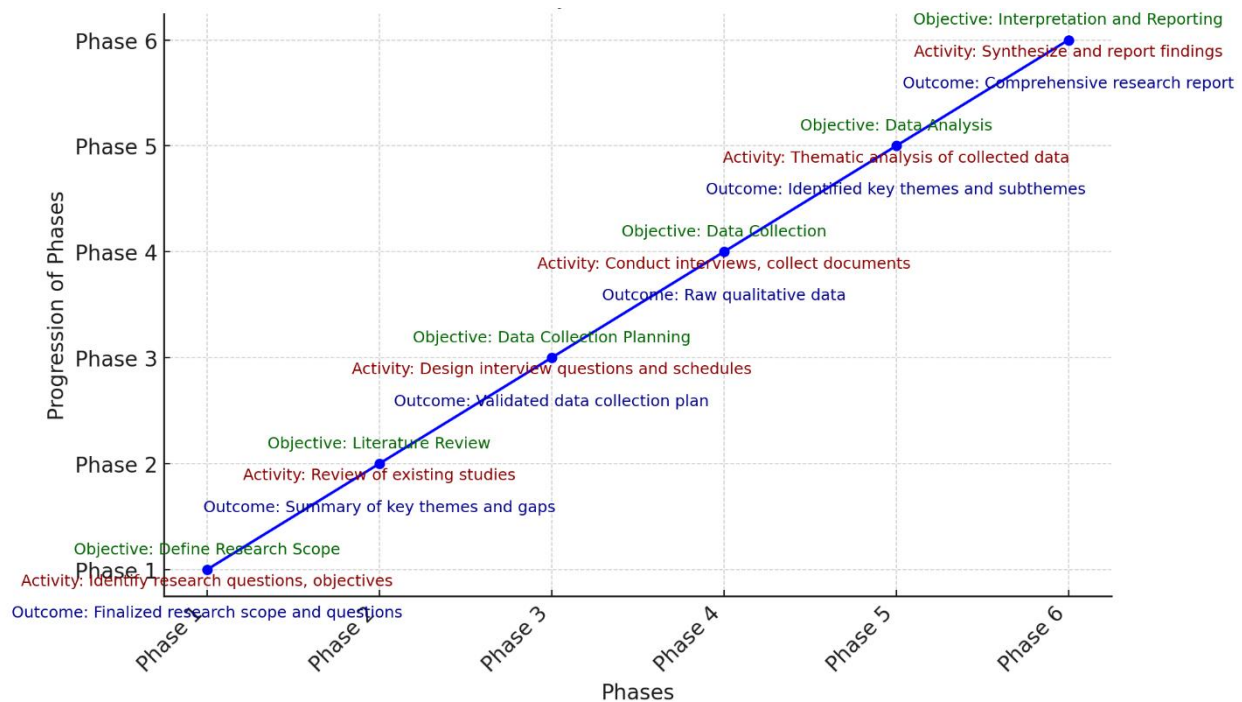


Figure 1 : Research Phases, Objectives, Activities, and Outcomes

The presented Figure visually represents the sequential flow of the six key phases involved in the research process for exploring the integration of public health strategies and health education in nursing practice. Each phase is marked with a distinct position along a linear progression, beginning with defining the research scope and culminating in the interpretation and reporting of findings. The Figure incorporates clear annotations for each phase, providing a comprehensive understanding of the associated objectives, activities, and outcomes.

The trajectory of the research process is upward and continuous, symbolizing the progressive nature of each phase. This indicates that each step builds on the previous one, forming a cohesive and interdependent system. The phases are interconnected, reflecting the logical and methodological progression required to ensure the study's credibility and rigor. The linear arrangement emphasizes the step-by-step structure, where no phase can be skipped without affecting the subsequent phases. This visual structure highlights the importance of thorough planning, systematic data collection, and precise analysis in achieving valid research outcomes.

The graph underscores the dynamic nature of qualitative research, where feedback loops and adjustments may be required at specific points in the process. For instance, while the data analysis phase (Phase 5) follows data collection (Phase 4), there may be iterative adjustments as patterns emerge. This iterative process allows the researcher to refine the understanding of key themes and subthemes, enhancing the quality of the final report. The clarity of the figure enables researchers, stakeholders, and practitioners to grasp the logical progression of research activities, promoting transparency and accountability in the research process.

Analysis of the Table

The table provides a detailed breakdown of the six research phases, their corresponding objectives, key activities, and outcomes. Each phase represents a critical stage in the research journey, showcasing the logical sequence of activities and how they collectively contribute to the study's success.

Phase 1 is dedicated to defining the research scope, which serves as the foundation for the entire study. During this phase, researchers identify the core research questions and objectives, ensuring clarity and focus. This stage is crucial because it establishes the direction of the study, guiding all subsequent phases. By the end of this phase, a clearly articulated research scope and set of objectives are achieved, providing a reference point for the next steps.

Phase 2 focuses on the literature review, a pivotal step in understanding existing knowledge and identifying gaps. The review of academic and policy-related documents from 2010 to 2025 enables the researcher to align the study with contemporary issues and highlight areas requiring further exploration. This phase not only provides context but also justifies the relevance of the study. The outcome of this phase is a comprehensive summary of key themes, trends, and gaps in the existing body of knowledge.

Phase 3 involves planning for data collection. Here, the researcher designs interview guides, schedules, and protocols. This stage emphasizes the importance of preparation, as it ensures smooth execution in the subsequent data collection phase. The design of semi-structured interview questions ensures that rich, qualitative data will be captured. The validated data collection plan resulting from this phase provides a structured approach to gathering information and minimizes the likelihood of disruptions during the data collection process.

Phase 4, the data collection phase, represents the core of the empirical process. During this phase, qualitative data is gathered through semi-structured interviews with nursing professionals, as well as document analysis. This phase is crucial for generating primary data that will later be analyzed. The interviews capture the experiences, perspectives, and challenges faced by nurses in integrating public health and health education. The raw qualitative data produced at this stage serves as the raw material for analysis in the next phase.

Phase 5 is the data analysis phase, where the raw data collected in the previous phase is systematically examined. Thematic analysis is applied, a method that enables the identification of key themes and patterns. The data is coded, categorized, and reviewed to identify meaningful insights. This phase is iterative, as researchers may need to revisit the data multiple times to refine themes. The outcome of this phase is the identification of key themes and subthemes, which will form the basis for the final reporting.

Phase 6, the final phase, is where the interpretation and reporting of the findings occur. This stage involves synthesizing the themes and subthemes identified in the previous phase into a coherent research report. The findings are presented in a structured format, providing valuable insights for policymakers, practitioners, and researchers. The comprehensive research report produced in this phase is the ultimate output of the study and serves as a resource for future research and practice. This phase also marks the completion of the research cycle, ensuring that the study's objectives have been met.

The table highlights how each phase contributes to the next, demonstrating the systematic nature of the research process. The logical flow from defining the research scope to reporting the findings ensures a clear, transparent, and accountable methodology. By following this structured process, the research achieves its objective of exploring the integration of public health strategies and health education in nursing practice. This structure allows for systematic data collection, thorough analysis, and evidence-based conclusions that contribute to advancing nursing education and practice.

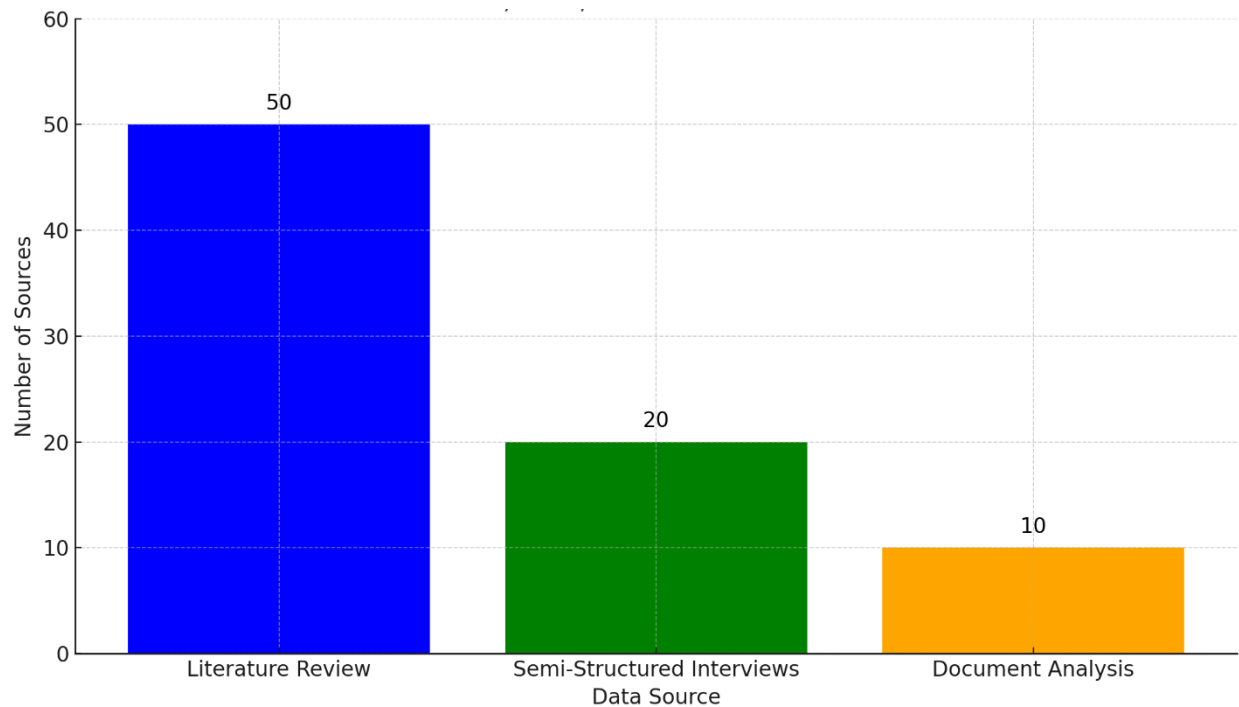


Figure 2 : Data Sources, Tools, and Methods Used in Research

The figure visually illustrates the key data sources used in the research, along with the corresponding number of sources for each. The data sources are categorized into three main types: Literature Review, Semi-Structured Interviews, and Document Analysis. Each bar in the figure represents the number of sources utilized for that particular data source, clearly distinguishing the scope and depth of data collection.

Analysis of the Table: The table outlines the key components of the data collection process, including the data sources, tools/methods, number of sources, type of data, and the purpose of each source. The literature review is the most comprehensive source, involving over 50 articles. This provides a broad theoretical foundation for the research, helping to identify research gaps and existing knowledge. The systematic review method ensures that the process is thorough, unbiased, and methodical. This secondary data is crucial for shaping the study's research questions and analysis.

The second data source is semi-structured interviews, which involve direct engagement with 15 to 20 nursing professionals. This type of data is classified as primary qualitative data. It allows for in-depth exploration of nurses' views, experiences, and perceptions related to the integration of public health strategies and health education. The use of an interview guide ensures consistency and focus, while still allowing flexibility for open-ended responses. This form of primary data enriches the research with real-world perspectives and first-hand insights.

The third data source is document analysis, where 10 key policy documents and guidelines are reviewed. These documents provide secondary qualitative data, offering contextual information on policies, protocols, and guidelines that influence nursing practice. By understanding the policy context, researchers can align the study with current practices and identify areas where public health strategies and health education intersect. This secondary data enhances the research by providing a policy-driven perspective that complements the data from interviews and literature reviews.

Analysis of the Figure: The figure visually represents the number of sources associated with each data collection method. The literature review is depicted as the largest contributor, with over 50 sources. This highlights the substantial reliance on academic research and existing studies to establish a strong theoretical foundation. The semi-structured interviews are shown as the second-largest source, emphasizing the importance of collecting first-hand, qualitative data from nursing professionals. This is critical for capturing subjective experiences, opinions, and insights that are not available in published literature.

Document analysis, represented by a smaller bar, indicates the review of 10 documents. While the number of sources is smaller compared to the literature review, the value of policy documents lies in their relevance and influence on nursing practice. These documents shape professional standards, training materials, and health guidelines, which are vital for understanding how public health strategies are integrated into health education. The smaller number of document sources reflects the specificity and selectivity required for this form of analysis.

The figure provides a clear visual understanding of the distribution of data sources and the effort invested in each method. The balance between primary and secondary data ensures a comprehensive approach to data collection. This triangulation of sources strengthens the validity and reliability of the research findings, offering a well-rounded perspective on the integration of public health strategies and health education in nursing practice. Let me know if you'd like any modifications or further explanations.

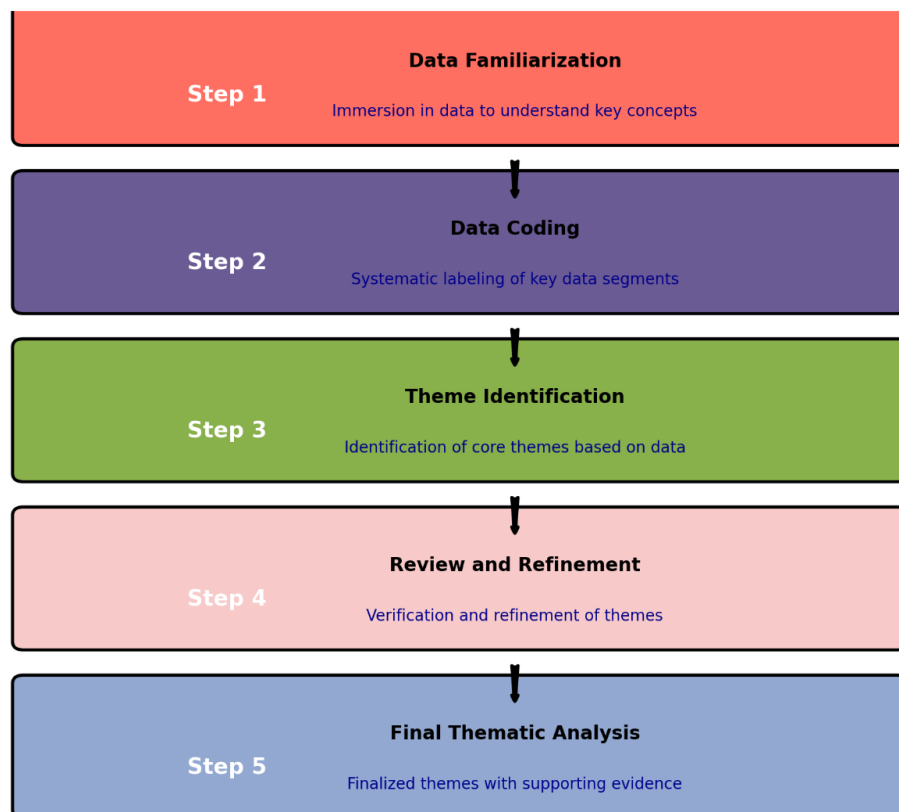


Figure 3 : Enhanced Thematic Analysis Process Figure

The enhanced flowchart and the corresponding table provide a clear and structured representation of the thematic analysis process. This approach offers a comprehensive visual and conceptual understanding of the sequential steps involved in conducting a thematic analysis. Each step, from data familiarization to final analysis, is essential for systematically identifying and categorizing patterns within qualitative data.

Analysis of the Table: The table presents five distinct stages of the thematic analysis process, each with its own unique objective, task, and outcome. The process begins with **Data Familiarization**, where the researcher immerses themselves in the data. This step allows the researcher to thoroughly review raw qualitative data, such as interview transcripts or notes, to gain a clear understanding of key concepts, emerging ideas, and potential points of interest. The immersion process ensures that the researcher becomes deeply acquainted with the data, making it easier to identify meaningful patterns in later stages.

The next step, **Data Coding**, involves systematically labeling key data segments. During this process, specific portions of the data that contain relevant information are highlighted and assigned unique codes. These codes act as markers that help to classify similar information under common categories. This stage requires careful attention to detail to ensure that no relevant information is overlooked. The main output of this phase is a collection of coded data segments, which serve as the foundation for identifying broader themes.

The third stage is **Theme Identification**, where the researcher organizes related codes into overarching themes. Themes represent recurring ideas or patterns within the data that are essential for answering the research questions. This stage involves grouping similar codes and reflecting on their meanings to identify broader categories. The goal of this step is to produce clear and coherent themes that encapsulate the most important insights drawn from the data. Themes form the core conceptual framework of the analysis, enabling the researcher to identify major findings from the data.

Review and Refinement is the fourth stage, where the identified themes are reviewed, refined, and, if necessary, modified. This step ensures that the themes accurately reflect the data, align with the research objectives, and are not repetitive or inconsistent. The refinement process involves critically analyzing each theme for clarity, coherence, and distinctiveness. If any themes are too broad, they may be divided into sub-themes, while overly narrow themes may be combined. The final result of this stage is a set of well-defined, coherent themes that can be used to construct the final analysis.

Finally, the process concludes with **Final Thematic Analysis**, where the themes are synthesized into a comprehensive report. This phase involves connecting the refined themes to the study's research questions and providing evidence to support each conclusion. The evidence typically includes direct quotes or excerpts from the data to illustrate the themes and their meanings. The final output is a clear, evidence-based thematic analysis report that communicates the study's key findings to a wider audience.

Analysis of the Figure: The flowchart visually illustrates the thematic analysis process as a logical sequence of five interconnected steps, with each step represented by a rounded rectangular box. The colors of each box are distinct, which helps to emphasize the uniqueness of each phase. The colors are deliberately chosen to make the figure visually appealing, thereby enhancing clarity and comprehension. Each box contains the step number, step title, and a brief description of the associated activity, making it easy to follow and understand.

The figure's vertical structure reflects the hierarchical and sequential nature of the thematic analysis process. The progression from top to bottom symbolizes the transition from unorganized

raw data to a finalized, well-structured thematic analysis. This design emphasizes that each step is necessary for the successful completion of the process. For example, moving directly from data collection to thematic analysis without coding or theme identification would likely result in confusion and incomplete analysis.

Arrows are used to indicate the direction of the process, showing the smooth transition from one step to the next. The use of arrows underscores the continuous, step-by-step nature of the analysis. The flowchart emphasizes that each phase is a prerequisite for the next, meaning that each phase builds on the knowledge and insights gained from the previous one. This interdependence highlights the importance of thoroughness and precision at every stage of the process.

The first step, Data Familiarization, is placed at the top of the figure, representing the entry point of the process. This is visually significant as it reflects how the researcher begins by engaging deeply with the raw data. The arrows then guide the viewer downward, showing the smooth transition from data familiarization to data coding. The next step, Data Coding, represents a shift from immersion to active categorization, and the corresponding arrow indicates this movement. The process continues downward to Theme Identification, where the raw codes are transformed into structured themes, marking a conceptual shift from categorization to synthesis.

The fourth step, Review and Refinement, is a critical part of the process, as it introduces an iterative component to the analysis. This stage often requires revisiting the earlier phases, especially if themes are found to be incomplete or inconsistent. The visual representation of this step is aligned with the others, but its conceptual role as a quality control phase is emphasized in the flowchart. The final step, Final Thematic Analysis, signifies the conclusion of the process, where all prior efforts culminate in the development of a polished, evidence-supported analysis. This final step is represented at the bottom of the flowchart, symbolizing the endpoint of the process.

the figure emphasizes the iterative, systematic, and step-by-step nature of thematic analysis. Each step is clearly distinguished in color, shape, and layout, making it easy for the audience to follow. The arrows create a logical flow from one stage to the next, reinforcing the notion of continuous progression. This design is particularly useful for training purposes, as it provides a clear, step-by-step guide for students, researchers, and professionals learning how to conduct thematic analysis. Both the table and the figure provide a cohesive and comprehensive representation of the thematic analysis process. The table provides a detailed and descriptive explanation of each step, while the flowchart presents a clear, visual roadmap of the entire process. Together, they offer a complete understanding of how thematic analysis is conducted, from the initial exploration of raw data to the production of a well-structured analysis report. The visual design of the figure enhances engagement and makes the process more intuitive for a wide audience, including researchers, students, and decision-makers.

5. Conclusion and Recommendations

5.1 Conclusion

The conclusion of this research highlights the critical role of integrating public health strategies and health education into nursing practice. This approach signifies a transformative shift towards holistic, patient-centered care that addresses both individual health outcomes and broader societal health determinants. By combining the principles of public health with educational interventions, nurses are equipped to act as advocates, educators, and facilitators of health promotion. This integration strengthens the capacity of nursing professionals to deliver comprehensive care that extends beyond treatment to include prevention, empowerment, and sustained well-being.

One of the key takeaways from this study is the importance of nurses' roles as health educators. Nurses are uniquely positioned to influence patient behavior through education, thereby promoting health literacy and fostering self-management. The evidence from this study illustrates that patients who receive health education from nurses experience improved treatment adherence, better health outcomes, and greater overall satisfaction with care. Additionally, the integration of health education within nursing practice addresses broader issues, such as health disparities and social determinants of health. By providing targeted education, nurses empower communities to make informed decisions about their health, which ultimately promotes equity and health justice.

Equally significant is the impact of public health strategies on nursing practice. The use of health promotion, disease prevention, and community-based care allows nurses to engage with patients and communities at multiple levels. By addressing upstream factors, such as living conditions, access to healthcare, and socioeconomic challenges, nurses contribute to more equitable health outcomes. This approach supports the larger goal of achieving global health objectives, such as the United Nations' Sustainable Development Goals (SDGs), which emphasize the importance of health equity and universal healthcare access.

The integration of these components within nursing practice also holds systemic benefits. Healthcare systems that prioritize public health and health education have reported reductions in healthcare costs, lower hospitalization rates, and improved population health outcomes. This integration aligns with the shift toward value-based care models, where the focus is on achieving high-quality outcomes at lower costs. Nurses, as key players in this paradigm shift, are instrumental in bridging the gap between clinical care and community-based prevention.

Despite the demonstrated benefits, challenges remain in fully realizing this integrated model. Issues such as limited resources, workforce shortages, and the need for continuous professional development pose barriers to effective implementation. Addressing these challenges requires investments in nursing education, policy reforms, and interprofessional collaboration. Ensuring that nurses receive adequate training in public health and health education will enable them to better address the needs of diverse communities.

the integration of public health strategies and health education into nursing practice represents a significant advancement in healthcare delivery. It promotes a more holistic, person-centered model of care that addresses the root causes of health disparities. By equipping nurses with the tools to serve as educators, advocates, and health promoters, this approach not only improves patient outcomes but also contributes to the broader goals of equity, health promotion, and sustainable development. The evidence from this study underscores the value of this integrated approach, calling for sustained efforts to overcome barriers and ensure that nursing practice continues to evolve in alignment with global health priorities.

5.2 Recommendations

Based on the findings of this research, several key recommendations can be made to strengthen the integration of public health strategies and health education in nursing practice. These recommendations are aimed at improving patient-centered care, enhancing nursing education, and fostering health equity at both the individual and community levels.

One of the foremost recommendations is to prioritize the training and development of nurses in public health competencies. Incorporating public health principles and health education concepts into nursing curricula will equip future nurses with the knowledge and skills necessary to address social determinants of health (SDOH). Training should emphasize the development of communication skills, cultural competence, and the ability to design and deliver effective health

education interventions. This approach ensures that nurses are better prepared to engage in preventive care, patient education, and advocacy for health equity.

Another key recommendation is to enhance interprofessional collaboration within healthcare teams. Nurses should be supported to work alongside public health officials, educators, and policymakers to create integrated care models. Collaborative efforts enable nurses to leverage community resources and support systems, thereby promoting holistic, patient-centered care. This approach allows for the development of comprehensive care plans that address the unique needs of individuals and communities.

Healthcare institutions are also encouraged to implement policies that support the active participation of nurses in public health initiatives. By embedding public health strategies into daily nursing practice, healthcare organizations can improve the quality and equity of care. This may involve creating dedicated roles for nurses as health educators, community liaisons, or health promotion coordinators.

policymakers and healthcare leaders should advocate for sustained investments in nurse education, workforce development, and healthcare infrastructure. Ensuring that nurses have access to training, mentorship, and the necessary tools to carry out public health interventions will significantly improve health outcomes. Addressing resource constraints and workforce shortages will enable nurses to fulfill their expanded roles as health educators and public health advocates, thereby advancing health equity and supporting global health initiatives such as the United Nations' Sustainable Development Goals (SDGs). These recommendations aim to promote sustainable, equitable, and person-centered care in nursing practice.

References

1. Callen, B., Smith, C. M., Joyce, B., Lutz, J., Brown-Schott, N., & Block, D. J. P. H. N. (2013). Teaching/learning strategies for the essentials of baccalaureate nursing education for entry-level community/public health nursing. *30*(6), 537-547 .
2. Clarke, P .N. J. N. S. Q. (2012). Connections between Nursing Science and Public Health. *25*(1), 36-36 .
3. Evans-Agnew, R. A., Mayer, K. A., & Miller, L. L. (2018). *Opportunities in the integration of primary care and public health nursing: Two case exemplars on physical activity and nutrition*. Paper presented at the Nursing Forum.
4. Frenk, J., Chen, L., Bhutta, Z. A., Cohen, J., Crisp, N., Evans, T., . . . Kelley, P. J. T. I. (2010). Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *376*(9756), 1923-1958 .
5. Glanz, K., Rimer, B. K., & Viswanath, K. (2015). *Health behavior: Theory, research, and practice*: John Wiley & Sons.
6. Graham, S. J. E. P. (2018). A revised writer (s)-within-community model of writing. *53*(4), 258-279 .
7. Ignacio, J., & Chen, H.-C. J. N. E. T. (2020). Cognitive integration in health professions education: development and implementation of a collaborative learning workshop in an undergraduate nursing program. *90*, 104436 .

8. Jordan, K., Lofton, S., & Richards, E. A. (2021). *Strategies for embedding population health concepts into nursing education*. Paper presented at the Nursing Forum.
9. Jung, C. K., Bychkov, A., Kakudo, K. J. E., & Metabolism. (2022). Update from the 2022 World Health Organization classification of thyroid tumors: a standardized diagnostic approach. *37*(5), 703-718 .
10. Loke, A. Y., Guo, C., & Molassiotis, A. J. N. e. t. (2021). Development of disaster nursing education and training programs in the past 20 years (2000–2019): A systematic review. *99*, 104809 .
11. Longpré, C., & Dubois, C.-A. J. B. h. s. r. (2017). Fostering development of nursing practices to support integrated care when implementing integrated care pathways: what levers to use? , *17*, 1-16 .
12. Machado, M. L. P., Oliveira, D. L. L. C. d., & Manica, S. T. J. R. G. d. E. (2013). Extended nursing consultation: education possibilities for the practice of integrality in health. *34*, 53-60 .
13. Marmot, M. J. T. L. (2015). The health gap: the challenge of an unequal world. *386*(10 .2444-2442 ,(011
14. McGowan, E. C., Hofheimer, J. A., O'Shea, T. M., Kilbride, H., Carter, B. S., Check, J., . . . Smith, L. M. J. J. N. O. (2022). Analysis of neonatal neurobehavior and developmental outcomes among preterm infants. *5*(7), e2222249-e2222249 .
15. Mosley, C. M., Taylor, B. J. J. T., & Nursing, L. i. (2017). Integration of health literacy content into nursing curriculum utilizing the health literacy expanded model. *12*(2), 109-116 .
16. Nursing, E. C. o. t. A. o. C. H. N. E. J. P. H. (2010). Essentials of baccalaureate nursing education for entry-level community/public health nursing. *27*(4), 371-382 .
17. O'Brien-Larivee, C. J. J. o. N. E. (2011). A service-learning experience to teach baccalaureate nursing students about health policy. *50*(6), 332-336 .
18. Olander, E. K., Fletcher, H., Williams, S., Atkinson, L., Turner, A., French, D. P. J. I. J. o. B. N., & Activity, P. (2013). What are the most effective techniques in changing obese individuals' physical activity self-efficacy and behaviour: a systematic review and meta-analysis. *10*, 1-15 .
19. Oliveira, B. M. F., & Daher, D. V. J. R. e. U. o. I. (2015). Efetivação da prática integrada em saúde de enfermeiros preceptores na Estratégia Saúde da Família. *8755-8757* .
20. Organization, W. H., & Fund, U. N. C. s. (2021) .(*Progress on household drinking water, sanitation and hygiene 2000-2020: five years into the SDGs*: World Health Organization.
21. Ramaswamy, A., Brodsky, N. N., Sumida, T. S., Comi, M., Asashima, H., Hoehn, K. B., . . . Ravindra, N. G. J. I. (2021). Immune dysregulation and autoreactivity correlate with disease severity in SARS-CoV-2-associated multisystem inflammatory syndrome in children. *54*(5), 1083-1095. e1087 .
22. Rodrigues, P. S. J. I.-C., Saúde, Educação. (2014). Process of nursing education: the vision of graduates on health education in the Family Health Strategy. *18*, 215-216 .
23. Ross, J. G., & Bruderle, E. J. N. E. (2016). Student-centered teaching strategies to integrate the quality and safety education for nurses competency, safety, into a nursing course. *41*(6), 278-281 .
24. Schofield, R., Chircop, A., Baker, C., Leurer, M. D., Duncan, S., & Wotton, D. J. N. e. t. (2018). Entry-to-practice public health nursing competencies: A Delphi method and knowledge translation strategy. *65*, 102-107 .

25. Scott, P. N., Davis, A., Gray, L. E., Jeffs, D. A., & Lefler, L. L. J. J. o. N. E. (2020). Imperatives for integrating culture of health concepts into nursing education. *59*(11), 605-609 .
26. Siström, M. G., Zeigen, L., Jones, M., Durham, K. F., & Boudrot, T. J. J. o. N. E. (2011). Integrated methods for teaching population health. *50*(1), 35-39 .
27. Stanhope, M., & Lancaster, J. (2015). *Public health nursing: Population-centered health care in the community*: Elsevier Health Sciences.
28. Tamli, N., Sain, M. J. A. B.-a. S. A. J. o. R., & Innovation. (2023). Exploring Innovative Strategies For Patient-Centered Care In The Nursing Profession. *10*(1), 19-30 .
29. Truglio-Londrigan, M., & Lewenson, S. B. (2010). *Public Health Nursing*: Jones & Bartlett Publishers.
30. Villar, J., Ferrando, C., Martínez, D., Ambrós, A., Muñoz, T., Soler, J. A., . . . Conesa, L. A. J. T. L. R. M. (2020). Dexamethasone treatment for the acute respiratory distress syndrome: a multicentre, randomised controlled trial. *8*(3), 267-276 .