Bibliometric Analysis of Community Nursing Trends on the Role of Nurses in Community Health Improvement

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ABSTRACT

This study employs bibliometric analysis using VOSviewer to map the landscape of health promotion research from 2004 to 2014. By analyzing research publications in this field, we identify thematic clusters, research trends, and emerging opportunities for future investigations. Our analysis reveals several thematic clusters central to health promotion, including health education, empowerment, community engagement, and the role of healthcare professionals. A temporal analysis of the research trends indicates a shift in focus from basic educational and community engagement strategies to more specialized areas, with a notable increase in research on mental health towards the end of the period studied. The examination of less illuminated areas within the network visualization highlights underexplored topics such as the roles of community pharmacists and integrative reviews, suggesting them as potential rich fields for future research. The study underscores the evolution of health promotion over the decade and points to new directions for comprehensive health strategies, aiming to bridge research gaps and foster interdisciplinary collaboration.

Keywords: *Health Promotion, Health Improvement, Community Nursing, VOSviewer*

1. INTRODUCTION

Community nursing has increasingly become a focal point in healthcare discussions, reflecting a shift towards preventive care and community-based strategies [1]. Nurses play a pivotal role in this transition, offering services that extend beyond traditional clinical settings to engage with community health needs directly [2]. As the global population ages and chronic diseases become more prevalent, the importance of community nurses in managing health outside hospitals has escalated [3]. This has prompted a reevaluation of their roles and responsibilities, with an emphasis on their contributions to health promotion and disease prevention [4], [5].

The evolution of community nursing roles is also influenced by socio-economic and demographic changes [6]. In many regions, healthcare systems are burdened by increased demand and finite resources, necessitating more efficient and widespread health interventions at the community level [1]. Nurses are uniquely positioned to meet these challenges due to their accessibility and trusted status within communities [7]. Their ability to adapt to diverse environments and client needs makes them indispensable in the implementation of tailored community health strategies [8]. This adaptability is crucial in addressing health disparities and ensuring equitable health outcomes across different populations [9].

Furthermore, the integration of technology in healthcare has opened new avenues for community nursing practices [10]. Telehealth and mobile health applications are reshaping how nurses interact with patients and manage care remotely [11]. This technological shift not only enhances the reach and effectiveness of community health initiatives but also demands new skills and competencies from nurses [12]. The dynamic nature of community nursing, fueled by technological advancements and shifting health priorities, underscores the need for continuous research to capture and analyze these trends comprehensively [13], [14].

Despite the critical role of community nurses in enhancing public health, there is a lack of comprehensive analysis that maps the evolving landscape of their contributions. Existing literature often focuses on isolated aspects of community nursing without a holistic view of the cumulative trends and shifts over time. This gap hinders the strategic development of training programs and policy frameworks that support nurses in fulfilling their expanding roles effectively. A bibliometric analysis of community nursing trends is essential to understand the breadth and depth of research in this field and to identify pivotal themes and gaps.

The objective of this research is to conduct a bibliometric analysis of the existing literature on community nursing, focusing on the role of nurses in community health improvement. This study aims to identify major trends, key themes, and emerging areas of research within the discipline. By mapping the academic landscape, the research will provide insights into how the field has evolved and where it is heading, supporting future studies and practical applications in community health strategies.

The significance of this research lies in its potential to inform and influence both academic and practical realms of community nursing. By providing a detailed overview of the trends and focal areas in community nursing research, this study will help educational institutions tailor their curricula to better prepare nurses for the challenges of modern community healthcare. Additionally, policymakers can use the insights from this study to develop targeted health initiatives and resource allocation strategies that bolster community health systems. Ultimately, this research will contribute to optimizing the role of community nurses, ensuring they are well-equipped to lead health improvement efforts at the community level.

2. LITERATURE REVIEW

2.1 Community Nursing Roles and Responsibilities

Community nursing encompasses a wide array of roles that extend from direct patient care to health advocacy and policy development. According to a study by [15], community nurses not only provide care to diverse populations but also act as critical agents of health education and promotion. They are tasked with the crucial responsibility of bridging the gap between clinical settings and community needs, which includes the management of chronic diseases, provision of palliative care, and implementation of preventative measures. The literature further reveals an expanding scope of practice, wherein nurses are increasingly involved in policy advocacy to shape health systems that are responsive to community needs [16]. These evolving roles highlight the adaptive nature of community nursing, necessitating ongoing research to fully capture their impact on health outcomes.

2.2 Technological Integration in Community Nursing

The integration of technology has significantly transformed the practice of community nursing. Recent research indicates that telehealth and mobile health interventions are pivotal in extending the reach of community nurses, allowing for continuous patient monitoring and health management outside traditional health facilities [17]. This technological shift not only improves accessibility to healthcare services but also enhances the efficiency and effectiveness of health interventions. However, as [18] argue, this requires nurses to acquire new skills and adapt to digital health platforms, which poses both opportunities and challenges. Studies suggest a need for comprehensive training programs that equip nurses with the necessary technological proficiency to navigate this new landscape effectively.

2.3 Health Disparities and Community Nursing

Community nurses play a vital role in addressing health disparities, particularly in underserved and marginalized populations. Research by [19] highlights how

community nurses tailor health strategies to meet the specific needs of these groups, thereby playing a crucial role in reducing inequalities in health outcomes. Their on-the-ground presence and community engagement are essential in delivering culturally competent care and health education, which are key to improving health literacy and empowering individuals to make informed health decisions. Despite their efforts, challenges persist, and further studies are needed to explore innovative approaches that enhance the effectiveness of community nurses in combating health disparities.

2.4 *Impact of Socio-economic and Demographic Changes*

The literature underscores the influence of socio-economic and demographic changes on community nursing. As populations age and demographic shifts occur, the demand for health services evolves, increasing the responsibilities placed on community nurses. A study by [20] examines how aging populations have led to a higher demand for community-based elderly care, requiring nurses to possess specialized skills in geriatric care. Moreover, socio-economic factors such as poverty, education, and employment also affect health outcomes, thereby shaping the strategies employed by community nurses. These factors necessitate a flexible and responsive community nursing practice that can adapt to changing health needs and priorities.

3. METHODS

This research employs a bibliometric analysis to systematically review and analyze the existing literature on community nursing and its role in community health improvement. We will utilize Google Scholar to gather peer-reviewed articles published between 1923 and 2024. The search strategy will include keywords such as "community nursing," "public health," "nurse roles," and "health improvement," among others. Inclusion criteria will be set to filter studies that focus specifically on the roles of nurses in community settings, excluding those that deal with hospital-based or clinical nursing exclusively. We will use VOSviewer for data extraction and visualization to identify clusters of research, citation patterns, and emerging trends within the collected literature. The bibliometric data will be analyzed to discern the evolution of community nursing roles, the impact of technology, and approaches to addressing health disparities.

4. RESULTS AND DISCUSSION

4.1 Research Data Matriks

Table 1. Research Data Metrics

Publication years	: 1923-2024
Citation years	: 101 (1923-2024)
Paper	: 980
Citations	: 159047
Cites/year	: 1574.72
Cites/paper	: 162.29
Cites/author	: 84549.81
Papers/author	: 473.35
Author/paper	: 2.84
h-index	: 178
g-index	: 371
hI,norm	: 118
hI,annual	: 1.17
hA-index	: 53

Papers with ACC	: 1,2,5,10,20:886,730,437,245,123

Source: Publish or Perish Output, 2024

Table 1 presents a bibliometric analysis of research in community nursing from the years 1923 to 2024. The dataset comprises 980 papers with a substantial total of 159,047 citations, averaging 1574.72 citations per year and 162.29 citations per paper. This high citation rate underscores the significant impact and relevance of the field. The analysis reveals an average of 2.84 authors per paper, with each author contributing to approximately 473.35 papers on average, indicating a collaborative nature within the community nursing research community. The high h-index of 178 and even higher g-index of 371 further confirm the depth and breadth of influential contributions in the field. The normalized and annual h-indices (hI,norm and hI,annual) are 118 and 1.17, respectively, reflecting sustained and consistent contributions over time. The hA-index at 53 suggests that a significant number of papers have multiple authors. Additionally, the distribution of papers with accumulative citation counts (ACC) at various thresholds (1, 2, 5, 10, 20) shows a strong citation performance across a wide range of publications, highlighting the enduring relevance and foundational nature of works in community nursing.
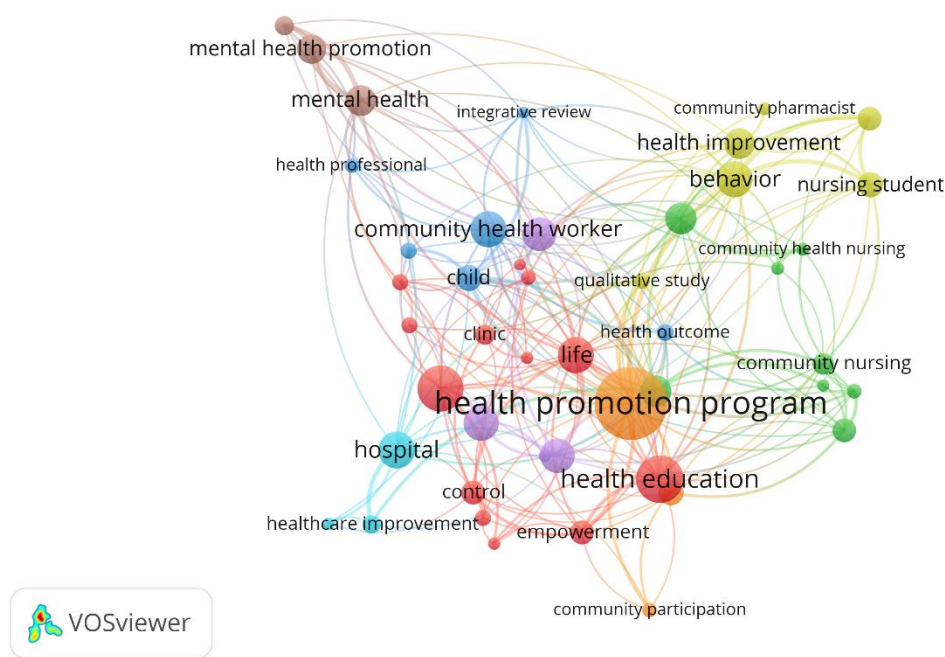
4.2 Network Visualization

Figure 1. Network Visualization
Source: Data Analysis Result, 2024

Figure 1 shows a visualization from VOSviewer, a tool commonly used for bibliometric mapping and network analysis. The figure seems to focus on health promotion and related themes based on the analysis of literature or datasets. We found several clusters based on the first figure above.

1. Red Cluster: This cluster appears to be central and includes terms like "health promotion program," "health education," "empowerment," and "community participation." It emphasizes the foundational aspects of health promotion programs, focusing on education and community engagement. These terms suggest a concentration on

strategies and methodologies for enhancing health awareness and activities at the community level.

2. Blue Cluster: Featuring terms like "child," "clinic," "life," and "hospital," this cluster likely focuses on specific demographic and institutional contexts in health promotion. The presence of "child" and "hospital" suggests a focus on pediatric health or interventions conducted in clinical settings.

3. Green Cluster: Dominated by terms like "community nursing," "community health nursing," "health outcome," and "nursing student," this cluster clearly focuses on the nursing profession's role within community health settings. It likely examines the educational aspects of nursing, community-based practices, and their outcomes.

4. Yellow Cluster: With terms like "behavior," "community pharmacist," and "nursing student," this cluster might explore the behavioral aspects of health improvement, particularly in how professionals like pharmacists and nurses contribute to health behavior changes in communities.

5. Brown Cluster: This cluster includes "mental health promotion" and "mental health." It suggests a focus on mental health within the broader context of health promotion, potentially exploring strategies and interventions specific to mental well-being.

The connections between these clusters, depicted by the lines of varying colors, indicate interdisciplinary links and how concepts in one area (like community nursing in the green cluster) might relate to concepts in another (like health outcomes in the green cluster or empowerment in the red cluster).
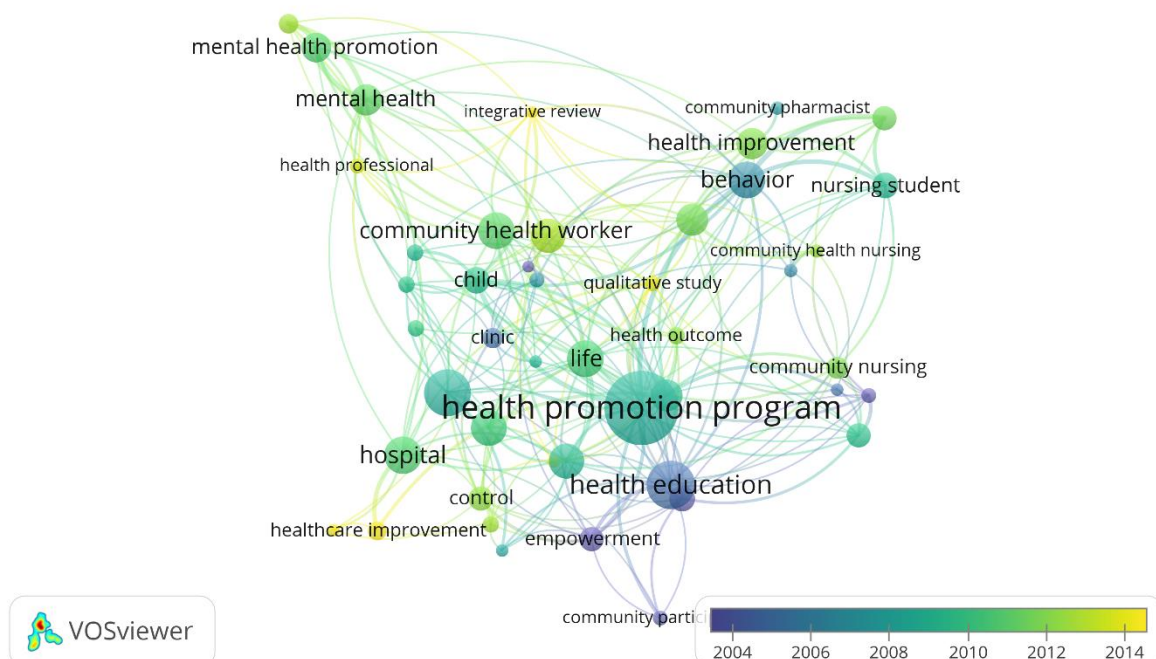
4.3 Overlay Visualization

Figure 2. Overlay Visualization
Source: Data Analysis Result, 2024

The second figure above also displays a network visualization from VOSviewer but includes a color gradient representing the temporal dimension of research trends from 2004 to 2014. Here's an interpretation of the research trend over the years based on the color coding:

Terms that are colored in darker blue represent topics that were more prominent around 2004. In your visualization, terms such as "community participation" and some aspects of "health education" appear in this color. This suggests that early in the observed period, there was significant focus on community involvement and basic educational strategies in health promotion. As the gradient shifts towards green, it represents topics that gained traction or were emphasized during the middle years of this timeline (approximately around 2007-2010). This includes a broad range of terms like "health outcome," "community nursing," "community health nursing," and "health promotion program." This indicates a period of integration and application of community-based strategies in health education and promotion, focusing more on specific outcomes and professional involvement. The lighter green and yellow hues represent the more recent focus areas towards 2014. Notably, "mental health promotion" and "mental health" are marked in these colors, suggesting a relatively recent surge in interest and emphasis on mental health within the broader field of health promotion. The trend towards focusing on mental health could indicate a shift in the health promotion field to address more holistic aspects of health, acknowledging the importance of mental well-being alongside physical health.

The progression from blue to yellow in the visualization points to a shift in health promotion research from foundational education and community engagement towards more specialized and integrative approaches, particularly highlighting the role of mental health. This evolution reflects a broader trend in public health and healthcare policies, where mental health has gained increasing recognition as a critical component of overall health strategies.

4.4 Citation Analysis

Table 2. The Most Impactful Literatures

Citations	Authors and year	Title
7692	[21]	Health promotion in nursing practice
5203	[22]	Guide to clinical preventive services: report of the US Preventive Services Task Force
4298	[23]	Healthy people 2000: National health promotion and disease prevention objectives—Nutrition priority area
4154	[24]	Code of ethics for nurses with interpretive statements
3956	[25]	Translating social ecological theory into guidelines for community health promotion
2655	[26]	Nursing's social policy statement: The essence of the profession
2050	[27]	Powerlessness, empowerment, and health: implications for health promotion programs
1887	[28]	Nursing Theorists and Their Work-E-Book: Nursing Theorists and Their Work-E-Book
1831	[29]	Fundamentals of nursing: concepts, process and practice
1747	[30]	The case for more active policy attention to health promotion

Source: Publish or Perish Output, 2024

Table 2 outlines the most influential literatures in the field of community nursing, as derived from a bibliometric analysis using "Publish or Perish" with a focus on works published between 1990 and 2017. The top-cited work is "Health Promotion in Nursing Practice" by NJ Pender, CL Murdaugh, and MA Parsons (2006), which has accrued 7,692 citations, indicating its seminal role in

integrating health promotion principles within nursing practices. The second most cited, "Guide to Clinical Preventive Services" (1996), has garnered 5,203 citations, reflecting its importance in shaping preventive healthcare guidelines. Another notable publication is the "Healthy People 2000" report by the US Department of Health and Human Services (1990), which focuses on national health promotion and disease prevention objectives and has received 4,298 citations. These works, along with others listed such as the "Code of Ethics for Nurses" (2001) and D Stokols' work on social ecological theory (1996), collectively highlight key areas in community nursing that have had significant scholarly and practical impacts, such as ethical guidelines, theoretical frameworks for health promotion, and national health objectives.
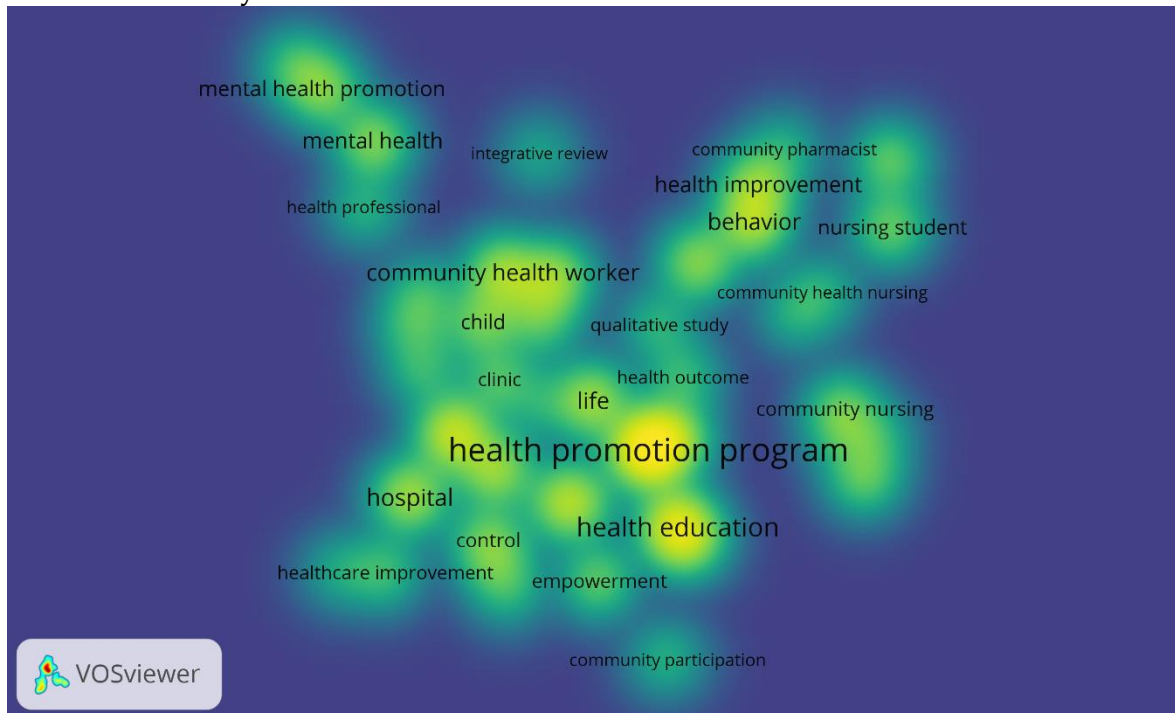
4.5 Density Visualization

Figure 3. Density Visualization
Source: Data Analysis Result, 2024

This last VOSviewer network visualization colored by a single hue gradient (presumably reflecting the density or frequency of research activity), highlights the concentration of research within specific areas of health promotion. The less bright areas, typically located around the periphery of the visualization, suggest topics that might be underexplored or emerging. These could include "mental health," "integrative review," and "community pharmacist." These areas might represent niche or developing fields that haven't been as extensively researched or emphasized in the literature. Areas that are less bright and are situated between two brighter, more established nodes may represent opportunities for interdisciplinary research. For example, the link between "mental health" and "health education" or "community health worker" suggests a potential area to explore how community health workers can be trained to support mental health initiatives. Less bright areas can also be indicative of emerging trends that haven't yet reached saturation in the literature. For instance, the connection between "healthcare improvement" and more community-focused elements like "community participation" might highlight a growing interest in how community-driven initiatives can contribute to broader healthcare improvements.

Since "integrative review" appears as a less bright node, there may be a need for comprehensive reviews that synthesize existing research across these less explored areas to provide

a clearer picture of current knowledge and identify gaps. Topics like "child" and "clinic," while somewhat central, might still benefit from focused studies, especially in relation to less bright topics such as mental health or specific health outcomes in underserved populations. Less bright areas involving practical applications like "health outcome" and "healthcare improvement" may benefit from more implementation research to evaluate and enhance the effectiveness of health promotion programs in real-world settings.

CONCLUSION

The VOSviewer network visualizations you provided depict a comprehensive bibliometric analysis of the health promotion field, revealing thematic clusters, research trends, and emerging opportunities. From the thematic clusters, we identified core areas such as health education, empowerment, and community engagement, which are crucial in structuring effective health promotion programs. The temporal trend analysis highlighted a chronological progression in research focus, moving from basic community and educational approaches towards more specialized areas, particularly noting a growing emphasis on mental health towards the later years. The visualization of less bright areas pinpointed underexplored topics and potential interdisciplinary connections, suggesting that areas like mental health integration, community pharmacist roles, and practical implementation research hold significant opportunities for future exploration. Together, these insights provide a valuable roadmap for researchers and policymakers, indicating both the evolution of health promotion research over time and pinpointing fertile areas for new investigations and interventions aimed at enhancing public health outcomes. This multifaceted bibliometric approach not only helps in understanding the current landscape but also in strategically directing future research to address gaps and leverage emerging trends within the field of health promotion.

REFERENCES

[1]   J. Ge *et al.*, "Community Nurses Are Important Providers of Continuity of Care for Patients With Chronic Diseases: A Qualitative Study," *Inq. J. Heal. Care Organ. Provision, Financ.*, vol. 60, p. 00469580231160888, 2023.

[2]   S. O'Flynn, "Nurses' role in diabetes management and prevention in community care," *Br. J. Community Nurs.*, vol. 27, no. 8, pp. 374–376, 2022.

[3]   U. R. Adhikari and S. Pradhan, "Role of Community nurses and Challenges towards providing Non-communicable disease services in selected blocks of selected district in West Bengal," *Asian J. Nurs. Educ. Res.*, vol. 12, no. 2, pp. 229–234, 2022.

[4]   A. MONTIGEL, "Community Health Nursing–eine neue Perspektive für die regionale Gesundheitsversorgung".

[5]   X. Li, "The Role of Public Health Nursing in Community Health Services," *Acad. J. Med. Heal. Sci.*, vol. 3, no. 2, pp. 58–61, 2022.

[6]   M. Rassouli, L. Khanali Mojen, A. Shirinabadi Farahani, and S. Beiranvand, "The role of the nurse in the community in running the palliative care interdisciplinary team: The Iranian Experience," *Palliat. Care Chronic Cancer Patients Community Glob. Approaches Futur. Appl.*, pp. 317–338, 2021.

[7]   B. J. Braband, "Working with Community Populations to Increase Wellness," *Integr. Heal. Nurs. Interv. Vulnerable Popul.*, pp. 73–87, 2021.

[8]   M. G. Bin Muhsin, Y. Goh, N. Hassan, Y. Chi, and X. V. Wu, "Nurses' experiences on the road during transition into community care: An exploratory descriptive qualitative study in Singapore," *Health Soc. Care Community*, vol. 28, no. 6, pp. 2253–2264, 2020.

[9]   P. Preziosi and F. A. Shaffer, "Evolution of care and nursing: moving with the patients," *Nurs. Adm. Q.*, vol. 43, no. 4, pp. 329–332, 2019.

[10]   C. Vasilica, M. Wynn, D. Davis, K. Charnley, and L. Garwood-Cross, "The digital future of nursing: making sense of taxonomies and key concepts," *Br. J. Nurs.*, vol. 32, no. 9, pp. 442–446, 2023.

[11]   M.-C. Wang, J.-S. Tang, Y.-P. Liu, C.-C. Chuang, and C.-L. Shih, "Innovative digital technology adapted in nursing education between Eastern and Western countries: a mini-review," *Front. public Heal.*, vol. 11, p. 1167752, 2023.

[12]   M. C. HEHMAN, N. M. FONTENOT, G. K. DRAKE, and R. S. MUSGROVE, "Leveraging digital technology in nursing," *Heal. Emerg. Disaster Nurs.*, vol. 10, no. 1, pp. 41–45, 2023.

[13]   E. J. J. Rani, "New trend of doing things with technology pertaining to nursing 'Technology modern trends that drive healthcare,'" *Res. J. Sci. Technol.*, vol. 14, no. 4, pp. 238–246, 2022.

[14]   Z. Sharlovych, "Digital transformation in the activities of a nursing specialist as an information and communication

component of the development of their professional skills," *Zhytomyr Ivan Franko state Univ. journal. Pedagogical Sci.*, no. 4 (111), pp. 262–272, 2022.

[15] P. Griffiths *et al.*, "Nurse staffing, nursing assistants and hospital mortality: retrospective longitudinal cohort study," *BMJ Qual. Saf.*, vol. 28, no. 8, pp. 609–617, 2019.

[16] K. Jones, J. Draper, and A. Davies, "Nurses' early and ongoing encounters with the dying and the dead: a scoping review of the international literature," *Int. J. Palliat. Nurs.*, vol. 26, no. 6, pp. 310–324, 2020.

[17] O.-S. Lee and J.-H. Lim, "Image of nurse and nursing professionalism perceived of nursing students before and after their first clinical practice in the COVID-19 pandemic," *J. Digit. Converg.*, vol. 19, no. 5, pp. 479–488, 2021.

[18] C. A. Green, "Racism as a Public Health Issue for Nurses of Color in Clinical and Academic Settings: Ten Nurses Tell Their Stories," *Nurs. Educ. Perspect.*, vol. 44, no. 5, pp. 279–284, 2023.

[19] D. L. Thompson, E. J. May, M. Leach, C. P. Smith, and J. Fereday, "The invisible nature of learning: Patient education in nursing," *Collegian*, vol. 28, no. 3, pp. 341–345, 2021.

[20] J. Á. Martínez-López, C. Lázaro-Pérez, and J. Gómez-Galán, "Burnout among direct-Care Workers in Nursing Homes during the COVID-19 pandemic in Spain: A preventive and educational focus for sustainable workplaces," *Sustainability*, vol. 13, no. 5, p. 2782, 2021.

[21] N. J. Pender, C. L. Murdaugh, and M. A. Parsons, "Health promotion in nursing practice," 2006.

[22] U. S. P. S. T. Force, U. S. O. of D. Prevention, and H. Promotion, *Guide to clinical preventive services: report of the US Preventive Services Task Force*. US Department of Health and Human Services, Office of Public Health and …, 1996.

[23] U. S. D. of H. and H. Services, "Healthy people 2000: National health promotion and disease prevention objectives—Nutrition priority area," *Nutr. Today*, vol. 25, no. 6, pp. 29–39, 1990.

[24] A. N. Association, *Code of ethics for nurses with interpretive statements*. Nursesbooks. org, 2001.

[25] D. Stokols, "Translating social ecological theory into guidelines for community health promotion," *Am. J. Heal. Promot.*, vol. 10, no. 4, pp. 282–298, 1996.

[26] A. N. Association, *Nursing's social policy statement: The essence of the profession*. Nursesbooks. org, 2010.

[27] N. Wallerstein, "Powerlessness, empowerment, and health: implications for health promotion programs," *Am. J. Heal. Promot.*, vol. 6, no. 3, pp. 197–205, 1992.

[28] M. R. Alligood, *Nursing Theorists and Their Work-E-Book: Nursing Theorists and Their Work-E-Book*. Elsevier Health Sciences, 2017.

[29] B. Kozier, *Fundamentals of nursing: concepts, process and practice*. pearson education, 2008.

[30] J. M. McGinnis, P. Williams-Russo, and J. R. Knickman, "The case for more active policy attention to health promotion," *Health Aff.*, vol. 21, no. 2, pp. 78–93, 2002.