Community Wellness Collaboration: Public Health's Role Alongside Nursing, Laboratory, And Health Informatics

Dafallah Theel Almutairi ([1]), Kholoud Al Hamedi Salam Almatery ([2]), Badr Nasser Thwaimer AlOtaibi ([3]), Bijad Badday Awadh Alotaibi ([4]), Faisal Muqbil Sulaiman Alkhuraydili ([5]), Bader Saad Faraj Alotaibi ([6]),
Abeer Tariq Ahmed Nasser ([7]), Muhammad Abdulaziz AlBarakat ([8]), Aeshah Mohammed Almuthibi ([9]), Sultan Ali Alresheedi ([10]), Faisal Saad Al Roogi ([11]), Mohammed Hathal Salem Algubawi ([12])

1. Nursing, Qassim Health Cluster
2. Nursing, Qassim Health Cluster
3. Health Administration and Community Health, Qassim Health Cluster
4. Health Administration and Community Health, Qassim Health Cluster
5. Public Health Technician, Qassim Health Cluster
6. Medical Laboratory Technician, Qassim Health Cluster
7. Physician, Jeddah 2nd Health Cluster
8. Physician, Riyadh 2nd Health Cluster
9. Nursing, Riyadh Second Health Cluster
10. Nursing, Qassim Health Cluster
11. Nursing, Rafaya Al-Jamsh Hospital
12. Nursing, Nafi General Hospital

Abstract

In the industrialized world, burnout, distress, and sick leave are significantly higher among healthcare workers than in other industries. Interest in enhancing the emotional and physical well-being of healthcare professionals has grown as a result of the growing load that rapidly aging populations and rising rates of chronic disease burdens are placing on healthcare systems and, consequently, healthcare workers. The physical and/or mental health of healthcare workers improved, and healthier behaviours were encouraged, as a result of interventions that incorporated at least one of the five whole-system recommendations for enhancing healthcare worker health and wellbeing. Nevertheless, after implementing all five suggestions in their workplace social capital intervention, one study found no statistically

significant difference in the workplace social capital measure of mental health. The project aims to explore patient-cantered treatment and the role of public health in promoting community wellness. The roles of labs, nursing, and health informatics were also covered.

Keywords: collaboration, public health, nurses, laboratory, health informatics.

Introduction

In the industrialized world, there is a noticeable disparity in the rates of burnout, distress, and sick leave between healthcare workers and workers in other industries. Growing strain on healthcare systems and, subsequently, healthcare workers due to rapidly aging populations and rising rates of chronic disease burdens has sparked interest in improving the mental and physical health and welfare of healthcare professionals. An increasing number of people are advocating for the "quadruple aim" to include improving the experience of healthcare professionals in providing care, in addition to the "triple aim" of enhancing patient experience, efficiency, and outcomes. Healthcare professionals' subpar health behaviours at work are associated with stress, disease, higher healthcare expenditures, obesity, high employee turnover, mistakes, and subpar healthcare delivery (Sikka et al., 2015).

Nevertheless, in spite of focused policy and research initiatives over the past ten years aimed at promoting and enhancing their health and wellness. Supporting or enhancing personal coping mechanisms has been the main emphasis of interventions aimed at enhancing the health and wellbeing of healthcare workers, as opposed to changing the work environment to encourage healthier habits. Even though the ability to manage environmental stressors on a personal level, also known as personal coping skills, mediates the effects of work-related stressors on health and wellbeing, research indicates that addressing workplace stress at the systemic level (including organizational, cultural, social, and physical aspects) may be helpful in preventing negative health and wellbeing outcomes. This is the case even though the ability to manage stressors in the workplace on a personal level is also important. The five system-level changes that healthcare workplaces can implement to improve the health and wellbeing of their staff are as follows: an understanding of the needs of the local staff; staff engagement at all levels; strong visible leadership;

support for health and wellbeing at senior management and board level; and an emphasis on management capability and capacity. The National Institute for Health and Care Excellence (NICE) in the United Kingdom provides funding for these healthcare workplace development initiatives, which are then incorporated into the National Health Service (NHS) Health and Well-Being development Framework (Bodenheimer & Sinsky, 2014).

Improvements in the physical and/or mental health of healthcare workers took place as a result of interventions that included at least one of the five whole-system recommendations for enhancing the health and wellbeing of healthcare workers. These interventions also encouraged healthier behaviours among healthcare workers. Nevertheless, after implementing all five suggestions in their workplace social capital intervention, one study found no statistically significant difference in the workplace social capital measure of mental health. Since the interventions' context, development, design, and implementation varied greatly, it is impossible to draw conclusions about their specificity. However, it is noteworthy that there does not appear to be a correlation between the study's effectiveness and the number of recommendations included in the interventions. However, this is only a preliminary comparison due to the heterogeneity in outcome measures (Brand et al., 2017).

Aim of study

The study aimed to discuss community wellness collaboration and public health's role in patient- cantered care. It also discussed the role of nursing, laboratories and health informatics.

Literature Review

patient-cantered care

Numerous clinical fields, including medicine, nursing, pharmacy, nutrition, and physical, occupational, and respiratory therapy, are cantered on patient care. Even though there are instances when the work of several disciplines overlaps, each has its own main topic, area of attention, and approaches to providing care. The job of each profession is complicated in and of itself, and interdisciplinary collaboration—a crucial aspect of patient-cantered care—brings still another layer of complexity. The quality of the information a decision-maker has access to influences the

quality of healthcare decisions made in all disciplines. Thus, information management systems for patient-cantered care are essential resources. The systems either contribute to or take away from patient-cantered care based on how well-suited they are for the job. When this is done, it will demonstrate how vital it is to construct electronic health records (EHRs) and other patient-care systems with the requirements of the patient in mind (Adler-Milstein & Jha, 2017).

Informaticians and clinicians are beginning to start seeing things in a same light when it comes to the systems that support patient-cantered care practices in the second decade of the twenty-first century. These systems include interdisciplinary care planning, care coordination, quality reporting, and patient involvement. Meaningful use standards, which seek to include patients and families in their healthcare, enhance care coordination, and raise the standard of care given overall, are contributing factors to this evolution. In order to accommodate new features, functionalities, and care practices such as seamless communication, interdisciplinary cooperation, and patient access to information, the functionality of traditional electronic health records (EHR) needs to be improved. In order to make the most of organizational and human factors, as well as the integration of systems and workflow, these components need to be incorporated into information systems as necessary requirements, rather than being an afterthought (Bakken et al., 2021).

Public Health

The term "public health" describes all groups working to improve the quality of life for the broader public. Promoting individual well-being through a range of tactics, including sickness prevention, screening, and treatment, is the aim of public health, which aims to improve the population's overall well-being. Monitoring and modifying the social, political, environmental, and economic contexts in order to advance public health is also part of it. Apart from offering a scientifically supported resolution to health problems, public health work encompasses injury prevention and public education regarding behaviours that worsen health, like smoking, inactivity, excessive alcohol intake, workplace accidents, seatbelt use, radon exposure, and food safety. Restaurant inspectors, health educators, scientists,

researchers, nutritionists, community planners, social workers, epidemiologists, outbreak investigators, public health physicians, public health nurses, occupational health and safety professionals, public policymakers, and sanitarians are all examples of the diverse range of professions that fall under the umbrella sector of public health (Masters et al., 2017).

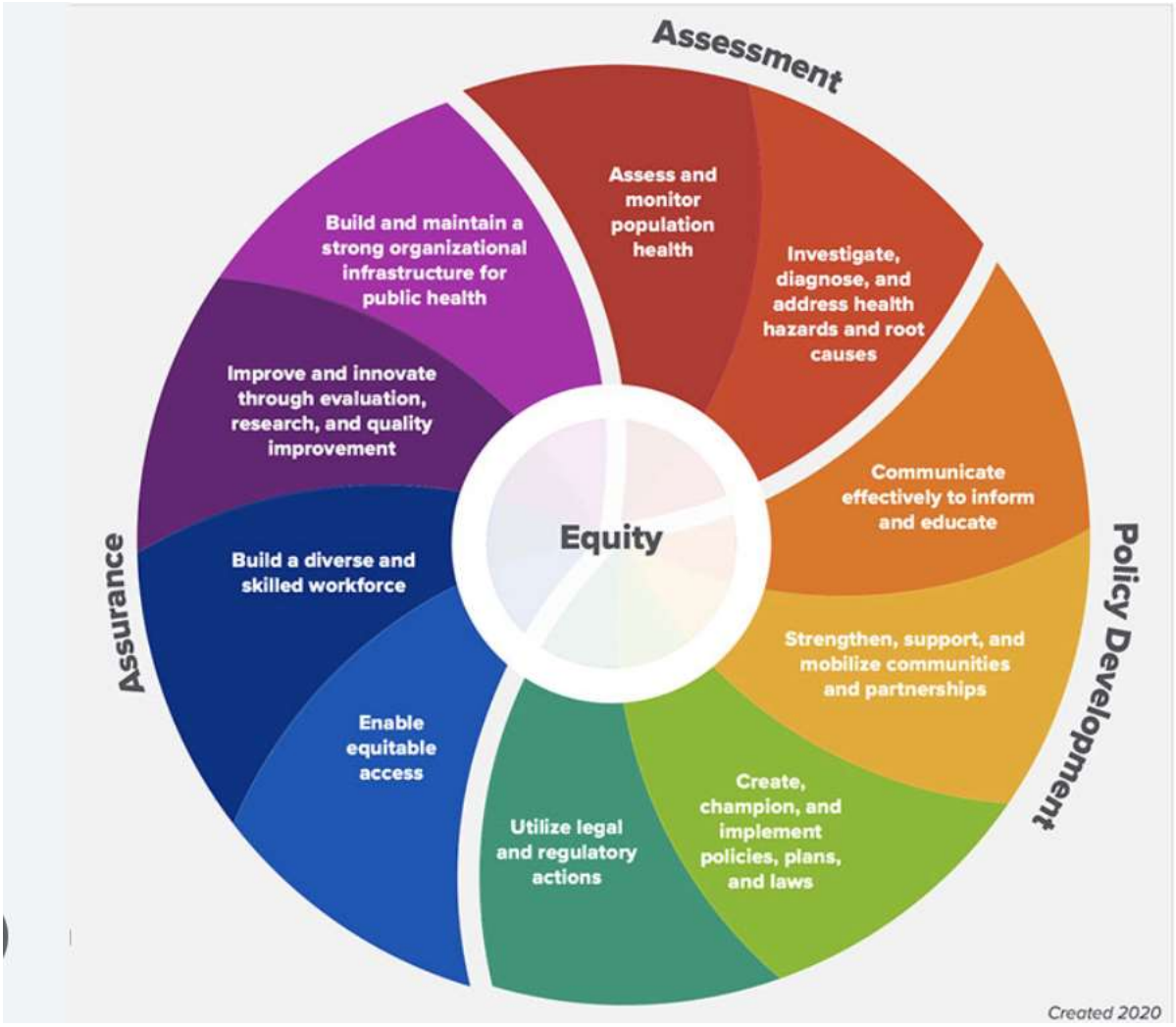

Figure 1. Essential Public Health Services (APHA, 2024).

Essential Functions of Public Health

Monitor Health Status: Registries on continuous health assessment and population maintenance serve as an example of how to identify and address public health issues. They are also used to identify health risks, assets, resources, vital statistics, and inequities.
Diagnose and Investigate: Provide timely assistance in identifying and investigating health threats; develop response plans to tackle significant health threats; assist in managing

health issues and health hazards in the community, such as by looking into outbreaks of infectious water, food, and vector-borne diseases.

Inform, Educate, and Empower: Promoting health education among families, individuals, and the general public Enhances knowledge and attitudes, guides decision-making, fosters the development of skills and healthy lifestyle choices, and empowers through social marketing and advocacy. Organize Community Partnerships: To recognize and address health issues, form alliances and coalitions, build constituencies, and establish partnerships with the public sector, businesses, civic associations, and religious institutions. Determine and assemble stakeholders and partners. Encourage better health through official and informal collaborations (Charleston et al., 2015).
Create Policies and Plans: To assist in planning for the improvement of community and individual health, to assist strategic planning with planning for community health improvement, to safeguard and direct public health practices, to coordinate resources for emergency response planning, and to ensure the success of planning.

Enforce legislation and Regulations: Promote the enactment of legislation that promote and protect public health in order to preserve security and protect public health. Laws, regulations, and legal authority are assessed, amended, and reassessed. Connect People to Services They Need and Ensure Care: Provide access to personal health services, recognize obstacles to care, guarantee the supply of medical attention when it is otherwise unavailable, and guarantee continuous care management by starting the provision of enabling and transportation services, access to primary care-related services, provide tailored, culturally relevant health information to a group that is at risk.

Ensure Skilled Personnel: Develop and make available a workforce for public health and personal healthcare, as well as public health leadership. Lifelong learning and continuing education, Development of leadership, Cultural Competencies, upholding standards, effective procedures for obtaining licenses and credentials, and public health competencies. Assess Health Services: Public health system, population-based services, performance management, and ongoing assessment of individual health services for population-based and personal

health services' efficacy, accessibility, and quality, regular evaluation and ongoing quality improvement are required. Research: Creates connections between academic and research environments and public health practice to provide fresh perspectives and creative solutions to health issues. innovative studies to improve public health, Participation in research as well as the discovery and exchange of best practices, public health systems research, health policy analysis, and epidemiological studies (Edemekong, 2022)
Four minimum responsibilities for registered nurses (RNs) in primary care include overseeing the care of patients with chronic illnesses between the primary care office and the adjacent healthcare neighbourhood; 3) Using practitioner-written procedures to involve patients with chronic illnesses in behaviour modification and medication adjustments; 4) Encouraging population health, which involves collaborating with communities to build healthier places for people to live, work, learn, and play; and 5) Managing teams to improve treatment and lower costs for patients with high needs and high costs (Mason, 2016).

For people who struggle to access healthcare because of distance, a shortage of doctors, problems with insurance, or other reasons, nurses provide a lifeline of treatment that meets patients where they are. In areas where other healthcare practitioners neglect to provide care, nurses provide care to the uninsured and underinsured. They run a variety of clinics, routinely visit patients in their homes, communicate with them through telemedicine, develop partnerships, and cultivate linkages with local communities and educational institutions. In addition to enhancing the capacity of basic care, nurses are essential in addressing the surge in healthcare need that occurs during natural disasters and public health emergencies. On the other hand, state and federal laws and regulations that limit nurses' capacity to deliver care in accordance with their education and training also limit their ability to advance treatment accessibility and, consequently, enhance health equity (Yao et al., 2021).

Figure 2. Nurses Can Help Improve Healthcare Delivery (Carolina, 2023).

Home Health and Home Visiting

Paying patients in the comfort of their own homes helps promote equitable access to high-quality healthcare. Thanks to home health care, many Americans, especially the elderly and young patients, now have simpler access to care. Less than 1% of doctors covered by basic Medicare make more than 50 home visits every year, according to research on U.S. workforce trends for home-based medical services. On the other hand, the number of NPs doing home visits nearly doubled throughout the same period. Home health nurses fill a void in the healthcare system by making arrangements for patients to receive follow-up treatment in their homes following their discharge from tertiary care facilities. These nurses have provided families with extra time off from caring for family members since the COVID-19 pandemic began. They have also provided mental health services in a number of methods, but one way they have undoubtedly benefited is by lowering social isolation in the elderly. By providing care at home, doctors and nurse practitioners now have the opportunity to visit patients' homes, participate in telehealth video conferences with family members present, and observe neighbourhood characteristics that affect health (Wakefield et al., 2021).

School Nursing

In addition to providing direct patient care, school nurses act as a liaison between the medical and educational fields. School nurses are employed by health organizations, school districts, or hospitals to keep an eye on the mental and physical health of their students while they are in class. As public health sentinels, they collaborate with parents, school communities, and healthcare providers to improve the health and well-being of children. In order to improve children's access to high-quality healthcare, school nurses are essential given the growing number of children with complex medical and social needs. Increased equity in student health care is facilitated by having access to school nurses. For many children living in or near poverty, the school nurse may be their only access to healthcare (Maughan, 2018).

Laboratory Services

Global initiatives to combat infectious diseases such as HIV, TB, and malaria have taught us that lowering the disease burden and premature death rates won't be successful unless physicians have access to high-quality PALM services, which are essential for diagnosis, prognosis, and treatment recommendations. Certain non-communicable diseases (NCDs), such diabetes or hyperlipaemia, cannot be identified or diagnosed based only on a clinical history or physical examination. For this reason, access to PALM services is crucial for both communicable diseases and NCDs. These conditions depend entirely on PALM service access for an accurate diagnosis and subsequent care. In addition to detection and diagnosis, PALM services are necessary for other diseases, such determination. Without access to PALM infrastructure and knowledge, it is impossible to do population cancer surveillance, individual diagnosis and illness detection, prognosis and treatment planning, and global health security.1, 2 As a result, reaching the SDGs—which include universal health coverage—by the target year of 2030 will be impossible without access to high-quality PALM services at all levels of care (Wilson et al., 2018).

Health Informatics:

Healthcare information technology, or HIT, is defined as "the application of information processing that involves both computer hardware and software" with reference to the storing, retrieving, sharing, and utilization of health care information, data, and knowledge for the purposes of communication and decision making. A wide range of technologies are included in health information technology,

ranging from straightforward charting to more intricate decision assistance and connectivity with medical devices. A number of advancements and changes in the healthcare sector can be brought about by the use of health information technology, including a reduction in human error, better clinical outcomes, simpler care coordination, higher practice efficiency, and long-term data tracking (Alotaibi & Federico, 2017).

Telemedicine is the application of communications technology to enhance patient-provider communication. Real-time, synchronous or asynchronous transmission of patient clinical data can be facilitated through two-way video conferencing. Apart from offering consultation services, telemedicine can also gather health data remotely using personal mobile devices or medical equipment. This data may be used to follow, observe, or modify how patients behave. (Daniel et al., 2015).

When participating in safety events, healthcare personnel have the option to voluntarily record these accidents through web-based electronic incident reporting systems. These systems can be integrated with the electronic health record (EHR) to enable data abstraction and the automatic identification of negative occurrences using trigger mechanism Healthcare workers can choose to voluntarily report incidents through web-based electronic incident reporting systems when they participate in safety events. By integrating these systems with the electronic health record (EHR), it is possible to provide data abstraction and the use of trigger mechanisms to automatically identify undesirable events. Systems for electronically reporting incidents may benefit from the following advantages: standardize the protocol for handling incidents and reports, identify critical problems and trigger events quickly, and automate data entry and analysis (Stavropoulou et al., 2015).

Conclusion

Members of the interprofessional healthcare team have responsibilities towards their patients, but they also have to think about how they fit into the larger picture of public health. Using this "big picture" perspective can improve patient care and results, shed light on individual roles in the larger scheme of things, and support the delivery of healthcare in society as a whole. Studies involving populations continue to add to the corpus of information required to modify public health policies. It is imperative for all providers to be up to date with the most recent advancements in research as well as legislative and

administrative modifications occurring within their local neighbourhood, state, or even country.

References

1. Sikka, R., Morath, J. M., & Leape, L. (2015). The quadruple aim: care, health, cost and meaning in work. BMJ quality & safety, 24(10), 608-610.
2. Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: care of the patient requires care of the provider. The Annals of Family Medicine, 12(6), 573-576.
3. Brand, S. L., Thompson Coon, J., Fleming, L. E., Carroll, L., Bethel, A., & Wyatt, K. (2017). Whole system approaches to improving the health and wellbeing of healthcare workers: A systematic review. PloS one, 12(12), e0188418.
4. Adler-Milstein, J., & Jha, A. K. (2017). HITECH Act drove large gains in hospital electronic health record adoption. Health affairs, 36(8), 1416-1422.
5. Bakken, S., Dykes, P. C., Rossetti, S. C., & Ozbolt, J. G. (2021). Patient-Centered Care Systems. In Biomedical Informatics: Computer Applications in Health Care and Biomedicine (pp. 575-612). Cham: Springer International Publishing.
6. Masters, R., Anwar, E., Collins, B., Cookson, R., & Capewell, S. (2017). Return on investment of Public Health Interventions: A systematic review. Journal of Epidemiology and Community Health, 71(8), 827–834. https://doi.org/10.1136/jech-2016-208141
7. APHA. 10 Essential Public Health Services. (2024). https://www.apha.org/what-is-public-health/10-essential-public-health-services
8. Charleston, A. E., Wilson, H. R., Edwards, P. O., David, F., & Dewitt, S. (2015). Environmental public health tracking: driving environmental health information. Journal of public health management and practice: JPHMP, 21 Suppl 2(Suppl 2), S4–S11. https://doi.org/10.1097/PHH.0000000000000173
9. Edemekong, P. F. (2022, December 11). Public health. StatPearls [Internet]. https://www.ncbi.nlm.nih.gov/books/NBK470250/
10. Mason, D. J. (2016). Partnering with nurses to transform primary care. JAMA, 316(23), 2471-2472.
11. Yao, N., Mutter, J. B., Berry, J. D., Yamanaka, T., Mohess, D. T., & Cornwell, T. (2021). In Traditional Medicare, Modest Growth In The Home Care Workforce Largely Driven By Nurse Practitioners: Study examines the characteristics of the workforce providing home-based medical care for traditional (fee-for-service) Medicare beneficiaries. Health Affairs, 40(3), 478-486.
12. Carolina, E. G. S. (2023, April 26). How nurses contribute to Community Health. Medium. https://emersongregorysouthcarolina.medium.com/how-nurses-contribute-to-community-health-187c8148fc19

13. Wakefield, M., Williams, D. R., & Le Menestrel, S. (2021). The future of nursing 2020-2030: Charting a path to achieve health equity. National Academy of Sciences.
14. Maughan, E. D. (2018). School nurses: An investment in student achievement. Phi Delta Kappan, 99(7), 8-14.
15. Wilson, M. L., Fleming, K. A., Kuti, M. A., Looi, L. M., Lago, N., & Ru, K. (2018). Access to pathology and laboratory medicine services: a crucial gap. The Lancet, 391(10133), 1927-1938.
16. Alotaibi, Y. K., & Federico, F. (2017). The impact of health information technology on patient safety. Saudi medical journal, 38(12), 1173.
17. Daniel, H., Sulmasy, L. S., & Health and Public Policy Committee of the American College of Physicians*. (2015). Policy recommendations to guide the use of telemedicine in primary care settings: an American College of Physicians position paper. Annals of internal medicine, 163(10), 787-789.
18. Stavropoulou, C., Doherty, C., & Tosey, P. (2015). How effective are incident-reporting systems for improving patient safety? A systematic literature review. The Milbank Quarterly, 93(4), 826-866.