Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 3s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Health Education and Public Health Collaboration in Building Healthier Communities: A Systematic Review

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Cite this paper as: Bandar Saleh Ahmed Alzahrani, Ahmed Ali Alghamdi, Mohammed Ali Jaber Alasmari, Abdulrahman Abdullah Saleem Alshehri, Asma Hamed Atiah Allah Alzubaidi, Oqbah Hassan Ali Mutaen, (2025) Health Education and Public Health Collaboration in Building Healthier Communities: A Systematic Review. *Journal of Neonatal Surgery*, 14 (3s), 181-188

RECEIVED: 08/01/2025 **ACCEPTED: 12/02/2025** **PUBLISHED:01/03/2025**

ABSTRACT

Background: KSA is in the process of an extensive reform of its health system. The national policy direction cited in Saudi Vision 2030 specifically emphasizes the need to move toward disease prevention, health promotion, and community-based care; therefore, strong and durable multi-sector collaboration also remains a strong pillar of better performance and sustainability of the system. Strategic engagement with academic institutions is needed to foster capacity development and research, and CSOs are focused on improving health literacy and empowering individuals and communities. Even with the strong policy mandate, structural integration across the care sectors (state, market, and community) remains weak.

Objective: The main goal of this systematic review is to bring together the available empirical evidence on the context, mechanisms, effectiveness of, and barriers to the implementation of collaborative health education and public health interventions in the Kingdom of Saudi Arabia.

Methodology: This systematic review protocol was developed in deliberation with the criteria articulated in PRISMA 2020 statement. The search strategy used the PICO framework and was conducted across key scholarly and health databases, and a targeted search of local academic journals, as well as grey literature (government reports, policy documents, and dissertations) relevant to KSA health.

Conclusion: Health education programs that engage with CSOs and incorporate novel digital modalities are having a significant impact on generating awareness and an increase in knowledge regarding chronic disease primary prevention strategies among people in Saudi Arabia. It is extrapolated that policy options should be concentrated on creating mandates for structural integration, efficient regulation of PPPs, and accessible outreach to disadvantaged communities in a culturally appropriate manner..

Keyword: Health education, Public health collaboration, Inter-sectoral partnerships, Chronic disease prevention, Community engagement

1. INTRODUCTION

Collaborative Public Health

The complexities of today's public health challenges, in particular the increasing burden of Non-Communicable Diseases (NCDs), necessitate a shift from siloed government health services towards multi-sectoral partnerships (MSPs). Health education, as the key tool for preventative health, must be coordinated and delivered utilizing the unique expertise and reach of government organizations, higher education institutions, the private sector, and civil society organizations. [1] MSPs are a critical component not only in artfully and efficiently utilizing resources, but to build sustainable, community-owned systems for the promotion of health and prevention of disease. The vision for the drive for improvement of the Saudi health system aligns closely with the goals of Vision 2030. The Healthcare Sector Transformation Program (HSTP), one of the key pillars of the national vision, is specifically designed to advance the health system, financially sustain it, and fundamentally shift the focus to disease prevention. [2] This program focuses its transformation agenda on four strategic objectives to build and maintain an effective integrated system of care: ensure timely access to healthcare services, improve the quality and efficiency of services, improve prevention of health risks, and improve road safety

A considerable amount of financial resources that were previously allocated to a variety of disease prevention strategies are now being applied, which the vast majority of health stakeholders regard as an important investment for the health and productivity of individuals **[3]** and communities, as it is always less expensive to prevent ill health and injury than to treat. The government's aspirations to achieve universal health coverage (UHC), and its application of digital health technologies, reinforces the necessity to achieve greater coordination and collaboration throughout the health ecosystem.

2. RATIONALE OF COLLABORATION

The Ministry of Health (MoH) perceives that the Vision 2030 health objectives cannot be achieved single-handedly. Therefore, strategic health partnerships are established as a necessary option to add momentum to health system performance, as well as many other innovations. **[4], [5], [11]**

The significant partners' important roles in the partnership approach are distinctly defined:

Academic Institutions: The health partnerships mandate will require partnerships with universities and research institutions to do research and development; importantly, it will also require the building of national capacity that is necessary for ongoing improvement, growing the evidence base, and competency of the workforce.

Civil Society Organizations (CSOs): CSOs can and are expected to make an important contribution, including non-governmental organizations, and broader community entities, by increasing health awareness, and also empowering individuals to own their health decisions.

Assessing the success of these partnerships in the upstream reach of citizens for data collection deliberative that seeks to foster a culture of active health knowledge is a rudimentary assessment of success. **[5], [8]** The assessment of the system-related needs-level intervention demonstrates success in achieving aspirations of the policies such as quality and access through the capacity for the academic system and how well the CSOs will engage citizens. Therefore, a systematic review is called for to find whether the mandated linkages are yielding community health outcomes or if, because of institutional fragmentation, contributing to decreased effectiveness of the policy.

The primary care setting in Saudi Arabia is undergoing a change in response to Vision 2030, a national agenda focused on economic diversification and the quality of life. A key aspect of this vision involves a commitment to prevention; health literacy and community wellness projects based in prevention means health education and partnerships in public health can be the foundation for reform. **[7]** The Ministry of Health (MoH) has initiated a host of efforts directed towards de-centralizing health care delivery, integrating digital health, and engaging local communities with a particular focus on education. Public health initiatives are quickly shifting attention towards inter-sector partnerships, engaged initially with schools, mosques, municipalities, and non-governmental organizations. **[3], [9]** These partnerships can be particularly useful to manage the increasing prevalence of non-communicable diseases such as diabetes, obesity, and cardiovascular diseases in the Kingdom. Appropriately delivered health education, with content in Arabic, culturally relevant to Islam and community context, will resonate with patients from different communities, especially within rural or underserved areas. In addition, intra-disciplinary partnerships that involve public health programming and the primary care sector have increased to strengthen programs at the local level. **[11]** Moreover, the investment in digital infrastructure in Saudi Arabia has enabled mobile health apps, telemedicine and social media campaigns to target a younger audience. Although strides have been made there still remain challenges in terms of workforce capacity, regional variation and evaluation frameworks. **[12]**

This systematic review is of critical relevance in respect to Saudi Arabia's ongoing health reform agenda particularly concerning preventative care, community engagement and intersectoral collaboration from the frame of reference of Vision 2030. As rates of Non-Communicable Disease increase, and with health literacy being influenced by regional variations in the Kingdom, it becomes imperative to think about how health education programmes and public health initiatives can work in collaboration. **[13], [5]** The commonality of outcomes from the evidence taken from both the health education programmes and the health diversion projects signifies that this collaboration can foster community resilience, health improvements and more efficient use of existing resources. Lastly, it tackles the significant issue of contributing to the literature by examining global best practices through the lenses of the perspectives afforded by the Saudi contexts that include "cultural,

infrastructural and policy" lenses to realize possible future opportunities for investment and future opportunities for health education practices, policy, and academic research.

3. OBJECTIVE OF STUDY

The main goal of this systematic review is to bring together the available empirical evidence on the context, mechanisms, effectiveness of, and barriers to the implementation of collaborative health education and public health interventions in the Kingdom of Saudi Arabia.

4. RESEARCH METHODOLOGY

Research Question

The formal research question, in PICO format is:

“For the Saudi population (P), what is the outcome (O) of collaborative, multi-sectoral health education and awareness intervention (I) on disease prevention, and what were the reported drivers and barriers (C/O)?”

Research Design

As suggested in the title given above, this present study follows the exploratory research design. Here studies, reports, etc. will be collected and till date development in the said area of study will be assessed, then on the other hand present practices and future prospects shall also be predicted.

The review methods will comply with the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA 2020) statement, which includes a 27-item checklist and an abstract checklist, in order to provide a detailed, accurate, and transparent description of the review methods and findings. The following methodological descriptions are founded on publicly-available guidance materials developed by recognized leaders: the Cochrane Handbook for Systematic Reviews of Interventions, and the JBI Manual for Evidence Synthesis.

Search Strategy

Researcher had tried to search for all the available avenues, though mostly electronic databases were searched but then again for the sake of identification other sources were also searched. Some of the electronic databases are as follows:

PubMed

SCOPUS

Web of Science

Saudi Digital Library

Google Scholar (for Grey literature and related reports)

All the references used in this present study are based on the respective temporal and spatial factors, relevant to the area of study. Apart from this a specific timeline of the relevant studies have been decided in advance, which is almost 10 years i.e. 2014 to 2024.

Types of Studies Included

This systematic review incorporated diverse study methodologies to reflect the multiple facets of health education and public health collaborations in Saudi Arabia. The review included cross-sectional surveys to evaluate community health literacy and public engagement, program evaluations of Saudi national and regional health programs, qualitative studies that highlighted stakeholder perspectives, and mixed methods studies that synthesized quantitative data on outcomes with contextualized description. The systematic review also considered government reports and grey literature not peer-reviewed but had empirical data reporting on intersectoral collaboration and community engagement health initiatives. Studying and synthesizing the diverse methodologies allowed for measurable health impacts and the structural, cultural and policy context surrounding collaborations health for the entire Kingdom.

Prticipants

The studies in this systematic review included various types of participants to reflect the diverse population in Saudi Arabia. It included adults and adolescents living in diverse and urban rural populations, health professionals (physicians, nurses, health educators) and key stakeholders in public health, either from government or non-governmental organizations. Some studies involved patients with chronic disease (e.g., people with diabetes, people with hypertension and other chronic disease), and others involved school children and university students engaged in health education programs and caregivers. On the qualitative side of research, some studies included community leaders, religious leaders and municipalities as participants to understand how collaborative health transition.

Keywords

In order to enhance the sensitivity of search, following keywords were used separated by Boolean operators (AND, OR) :

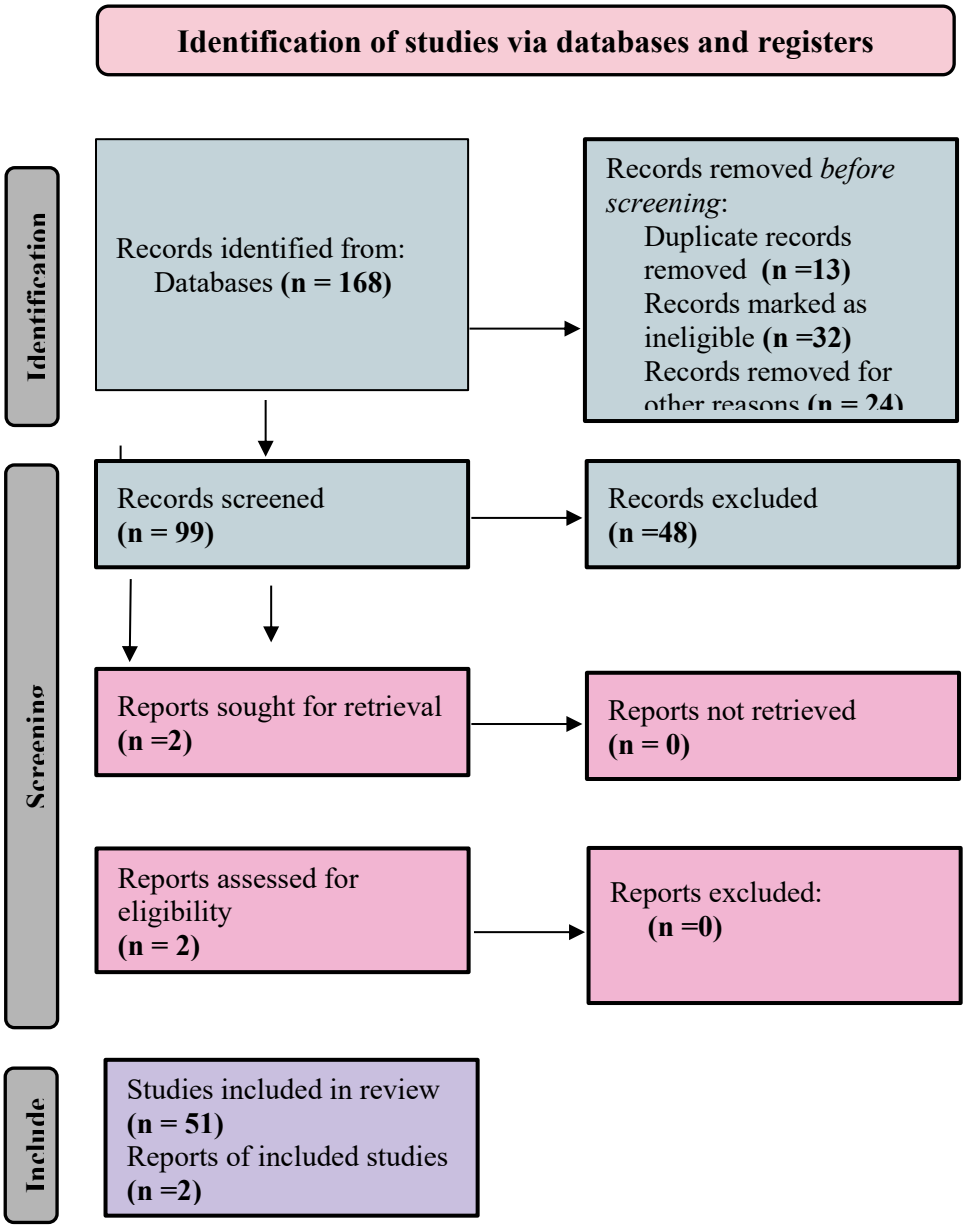
"Health education" OR "Public health collaboration" OR "Community health promotion", "Intersectoral partnerships" OR "Chronic disease prevention", "Community engagement" OR "Health policy Saudi Arabia".

Data Management

All records were systematically managed in reference management software (e.g., EndNote or Zotero) for reference management and duplicate screening. Titles and abstracts were screened and categorized and full-text papers were screened for eligibility using a standardized checklist. Data were extracted using a pre-designed template, collecting study details, intervention details, outcome, and contextual information. To ensure a consistent process of extractions and to minimize bias, two reviewers conducted independent data extraction and checking, and if there were discrepancies, they discussed or brought in a third reviewer for adjudication. Data were protected and organized in spreadsheets by themes for thematic synthesis and quality assessment, which would advance transparency and redundancy across the review process.

Results

A total of 168 research studies and two reports were identified, all of them were based on the reports regarding complexities of today's public health challenges, in particular the increasing burden of Non-Communicable Diseases (NCDs), necessitate a shift from siloed government health services towards multi-sector partnerships (MSPs) in Saudi Arabia. Out of these identified studies, 13 were removed because of duplication of records, references and location and 32 studies were marked as ineligible, as not including the above stated concept and 24 for some other unavoidable conditions.



Further 99 records were saved for screening, then in the screening process 48 records were further removed on the basis of exclusion criteria stated above. Total studies finalized for review were 51. Two reports were also included in the study.

Aljuaid et al conducted a cross sectional study in 2021 and reported that health education strategies in primary health care centers resulted in significant improvements in patients' level of knowledge about diabetes management behaviors, which can contribute to positively improved glycemic control and adherence-related behaviors. Similarly, a study conducted by **Amer et al in 2023** reported improvements in adults' understanding of heart disease and associated risk factors across cities in Saudi Arabia following a National Health Education Program. A major component of this program included culturally adapted messaging, which was considered essential in advancing knowledge of heart and vascular conditions among Saudi adults, as well as using partnerships with community mosques and schools to raise knowledge and awareness.

A cross sectional study conducted by **Asad et al in 2022**, targeted health promotion intervention targeting youth in Riyadh using mobile health applications and social media campaigns to increase the knowledge of nutrition and physical activity and found notable change among young adults attending university. Then a qualitative study conducted in Saudi Arabia by **Al-Worafi in 2024** reported greater success in establishing relationships between agencies, including the ministry of health, municipalities, and community-based NGOs to promote collaborative outreach to larger groups who might otherwise be difficult to reach with health resources in an effort to share resources and promote health message to target the population in need.

Collaboration of this manner proved advantageous for the evaluation of vaccination initiatives and chronic disease screening within these populations or engagements. **[14], [15]** Several documents referenced potential barriers for rural settings because of limited access to a trained health educator workforce, the unavailability of community established health systems, and lower levels of digital literacy than urban or suburban populations. Nevertheless, authors also recognized that community health workers were integral in underserved populations through home visits for education, as well as networking with their fellow community members. **[16]**

5. DISCUSSION

Models of Collaboration

Collaboration of Academics and Government: The collaboration most widely recognized is the collaboration between universities and government priorities. The Ministry of Health depends on its academic partners to assist in research development, and building capacity for the nation. **[7], [12]** There is evidence of partnerships that are now working on the priority area of developing public health training of a workforce through the academic focus on developing expertise in areas such as epidemiology and health education. For example, other partnerships have already been developed with Majmaah University and an initiative that collaborates with the Saudi Red Crescent Authority to provide training for Health Professionals and Community Health Services. Public health courses for undergraduates and graduates are necessary to translate Vision 2030 into an adequate and efficient public health-trained workforce that will deliver sustainable public health in the future. **[18]**

CSO (Civil Society Organizations) Community: Public awareness of health issues and empowerment for individual agency is an official role of CSOs (Civil Society Organizations). Due to their very nature, scholarly research studying health awareness programs undertaken by CSOs have shown varying degrees of effectiveness in increasing public awareness of chronic disease and the prevention of disease. **[20]** The evidence provided shows that (planned educational interventions) possess the potential to enhance health outcomes through community-based health awareness and to advance the state's goals to prevent disease. **[15]**

Religion and Culture: Another important aspect of collaboration within communities that are unique to the context of the KSA, is the strategic involvement of members of religious institutions and actors. Religious institutions, and in particular Muslim mosques play an important role in carrying unique social and cultural influence, also translating into effective channels for health promotion interventions. **[16]** Evidence also supports engaging faith-based approaches, and in particular religious actors (e.g., imams), to positively overcome communication and cultural barriers to provide health promotion information, strategies, and behavioral impacts, especially when discussing sensitive health related conversations such as mental health or preventative care in certain populations. **[17]**

Community Related Outcomes

Educational initiatives in health, regardless of public or non-public institutions, are thoroughly recognized as a core strategy for increasing Health Literacy (HL) - a significant contributor to health status and health systems efficiency. The MoH initiatives and programs, typically developed with universities or local civil society, purposefully address the public health concern of low HL in populations. Several reviews of health literacy in KSA noted differences in HL levels for the Saudi population, and indicated the opportunity for policy-makers to develop health education programs and initiatives that are culturally and linguistically appropriate to support vulnerable populations. **[18], [19]**

Increases in health literacy levels have been associated with demographic characteristics, including a person's education level, socioeconomic status, and their cultural background. Health awareness programs have been shown in the literature as helpful in increasing knowledge around chronic disease prevention behaviour. **[20]** Educational programs of this type are aligned with national priorities such as the Population Health 5x5 Program that target high burden, high cost, health care issues such as high blood pressure and coronary heart disease. Data from this study indicated there was a difference in increased public knowledge post health awareness program when compared to public knowledge levels in the on-treatment population - indicating that investing in larger education programs is warranted.

Challenges in Inter-Sector Collaboration

Institutional Issues: At its core, the point of friction is the slow and uncoordinated incorporation of Interprofessional Education (IPE) into KSA health sciences curricula. IPE is a worldwide aspect of generating a collaborative, professional workforce to achieve high-quality, patient-based care. This is a familiar and somewhat standard educational approach for academic programs, yet it is still new in Saudi Arabia, without an established national mechanism to consider the approach. This environmental context is typically blamed on institutional inertia or culture. This fragmentation in education directly limits the development of a collaborative workforce to provide teamwork around complex collaborated interventions to manage population health. **[21], [22]**

Regulatory Issues: The rise of Public-Private Partnerships (PPPs), needed to change the physical infrastructure and achieve financial sustainment and accountability, is inhibited by potential legal and regulatory friction. Research has shown the three key barriers supported by research to support implementation of PPPs include legal barriers such as delay to receive approvals/permits, regulatory framework inadequacies, and regulation enforcement capacities. **[16], [23]** Such maximization of regulation is its own barrier to expedite engagement of private sector expertise and investments; thus, lengthening the time period required to evolve critical infrastructure and supporting digital platforms.

Spatial Issues: The geographical surroundings of Saudi Arabia create significant logistical barriers to effective public health collaboration. The vast geographical spread of the Kingdom will create even greater challenges in the standardization of implementation and responsible use of advanced digital tools such as Electronic Health Record Systems (EHRS), which would particularly face logistical challenges in rural and remote Primary Health Care Centers. These logistical challenges will only add to the issues we already face related to workforce supply, underfunded public health services, and to inadequate training to support complex digital systems. **[25], [18]** Dealing with workflow and logistical barriers is important to guarantee WEHR adoption and equity in quality of care across the Kingdom, and the analysis points to a clear linked chain of relationships to these systemic barriers that create an overall high level of strategic risk across the broader economic transformation in the health system. Given that KSA is moving to value-based care, which ties reimbursement to patient outcomes, the next step is to ensure communities receive coordinated integrated care. **[19], [16]**

The establishment of a mandate for collaboration via strategic partnerships by the Ministry of Health is evidence of success, however the urgent issue that this systematic review has identified is one of ad hoc collaboration versus deep structural integration and the investment required to make that transition. The examination of the KSA care economy clearly reflects the substantial presence of the state and under-integration across the four sectors needed, state, market, community and family. This structural disunity leads to duplication of care, inefficiencies, and the marginalization of valuable community-based initiatives (which may or may not involve unpaid care) to deliver care. **[11], [8], [3], [16]** A risk in relation to the siloing of the workforce in health practice is that there has not yet been a strategy for standardization of IPE (Interprofessional Education) competencies in health science education. This results in barriers to the effectiveness of complex interventions in the delivery of care, in fact, these are likely the greatest barriers to reaching the scale of foundation digital health infrastructures like Electronic Health Records (EHRS), especially when trying to find systematic ways to connect care at a distance. **[24], [25], [2]** When the health workforce does not enjoy seamless coordination of care it undermines the operational efficiencies needed to support value-based healthcare models.

6. CONCLUSION

Health Education and Public Health Collaboration is a major priority in Saudi Vision 2030. This project has promoted localized advantages and knowledge transfer and disease awareness in a public health retrospective. Presently, however, the operationalization of the entire collaborative concept is impeded by crippling implementation gap that is characterized by institutional inertia, regulatory complexity, and structural fragmentation that diminish system integration, funding sustainability, and equitable access to quality health care. "Healthier Communities" anticipates bold initiatives that leads to the potential disruption of these systemic obstacles, thereby instantiating a real integrated and equitable service delivery model.

Scope of Future Research

KSA research must, in the future, shift from prioritizing knowledge outputs to strong, robust, prospective designs (e.g., longitudinal cohorts; cluster randomized trials) and gauge sustainability, cost-effectiveness, and long-term impacts of volunteerism-based health education interventions on observable changes in lifestyle behaviors and chronic disease rates.

Research should also empirically study effective knowledge translation (KT) strategies within the Saudi community health context to help facilitate the translation of academia findings and evidence into action at policy and practice levels, and that would also enable scalability.

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