

Community Health Needs Assessment Of Aljouf Region

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Abstract

The Population Health Management (PHM) team of the Aljouf Health Cluster conducted its inaugural community health needs assessment (CHNA). The primary goal of this assessment was to evaluate the health needs of the community by employing community engagement strategies and utilizing available data to inform stakeholders about the region's health priorities. The Aljouf Region is comprised of four zones: Skaka (Zone 1), Alqurayyat (Zone 2), Tabarjal (Zone 3), and Domat Aljondal (Zone 4) Swir (Zone 5), all of which were included in this assessment. The PHM team utilized a mixed-methods approach, incorporating a review of secondary data, a cross-sectional survey, focus group discussions, and key informant interviews. The findings revealed that the Aljouf Health Cluster serves a population of approximately 600,000, with 58% males and 42% females. The healthcare infrastructure includes 63 government Primary Health Care (PHC) centers and 14 hospitals. A higher utilization of healthcare services was observed among females (56%) compared to males (44%), with only 7% of PHC users being non-Saudi nationals. The most prevalent health problems identified were challenges in accessing healthcare and specialized services, diabetes mellitus, obesity, smoking, mental health issues, and upper respiratory tract infections. Furthermore, the assessment indicated an underutilization of preventive services and routine check-ups within the community. Based on these findings, the team prioritized access to healthcare, diabetes mellitus, obesity, and smoking as the key health needs. The recommended interventions to address these priorities primarily focus on improving access to specialized clinics, emergency care, and strengthening community awareness. Key limitations included challenges with the availability and quality of secondary data. Future recommendations emphasize the integration of a minimum data set into the cluster's Health Information System (HIS) to ensure seamless data access and compilation.

Keywords: Community Health Needs Assessment, Aljouf Region, Saudi Arabia, Population Health Management, Priority Health Needs, Access to Healthcare, Chronic Diseases, Primary Healthcare.

1. Introduction:

Saudi Arabia's ongoing healthcare reform is fundamentally oriented towards enhancing patient experience, delivering value-based treatment, and adopting Population Health Management (PHM) as a core strategy. As a relatively new concept linked to the development of Accountable Care Organizations (ACOs), new care models, primary care enhancement, healthcare financing reform, and community activation, PHM is gaining significant traction in leading the Kingdom's healthcare transformation efforts. As part of this transformation, the Aljouf Health Cluster is strategically planning to evolve into an ACO, which entails assuming full responsibility for healthcare delivery to the regional community, cultivating a culture of health, and shifting towards a value-based healthcare model.

Saudi Arabia has historically been characterized as a young nation; however, recent population survey data indicates a decline in birth rates and a concurrent increase in the older population segment. This demographic shift is projected to alter the population pyramid in the near future. Delivering effective healthcare to a growing and aging population necessitates a profound understanding of the community's health status. While this demographic transition is a sign of societal achievement, it presents significant challenges for healthcare systems and service delivery. To proactively address such changes, a key function of PHM is to conduct a Community Health Needs Assessment

(CHNA). A health needs assessment is a systematic methodology for reviewing the health status, determinants, and the demand for and supply of healthcare services for a defined population. The CHNA provides healthcare leaders with a critical snapshot of local policies, systems, and environmental change strategies, helping to identify areas for improvement. Armed with this data, communities can collaboratively develop strategic courses of action for health improvement, creating sustainable and positive changes. Ultimately, this process enables healthcare facilities to agree on priorities and allocate resources in a manner that will improve health outcomes and reduce inequalities within the population.

2. Background and Literature Review

Community health needs assessments are vital tools in public health, enabling communities and organizations to identify priorities, allocate resources, plan interventions, and engage populations. The field has matured substantially, with diverse methods and broad global application. However, critical areas for improvement persist, including the standardization of definitions and methods, a more complete integration of broader social determinants and community assets, greater community participation (particularly of underserved populations), and a stronger linkage between assessment findings, actionable strategies, and measurable outcomes.

2.1. Global Studies

Globally, studies have demonstrated that CHNAs are utilized by a wide range of stakeholders across various settings[1, 2]. Approaches to CHNA vary considerably; an older literature review identified three distinct perspectives: sociological, epidemiological, and health economic[3]. A more recent scoping review of health needs assessments found that among 169 articles, empirical studies employed quantitative, qualitative, and mixed-method approaches, with a clear trend towards the use of mixed methods[4]. While most of these studies were conducted in the United States, the application of CHNAs is global, with examples from Australia, South Africa, Kenya, the UK, and Iran. Many CHNAs worldwide incorporate participatory elements such as community focus groups, stakeholder interviews, and asset mapping, with about half of the empirical studies in the scoping review using such approaches[4]. Common steps in these assessments include population profiling, secondary and primary data collection, identification of needs and assets, prioritization, planning of interventions, and evaluation. Despite their widespread use, many CHNAs tend to focus on health service access and disease burden, with fewer integrating broader social determinants or structural factors[4].

2.2. National Studies

In Saudi Arabia, the body of literature on health needs assessments is growing, though published regional assessments remain limited[5]. A nationally representative survey in 2022 reported that over 80% of respondents were satisfied with health services, though satisfaction was lower among those in worse health and lower socioeconomic groups, with Saudi nationals reporting lower satisfaction than non-nationals[6]. A comprehensive national survey conducted in 2024, which included 39,562 participants, used the WHO-05 Index and self-rated health metrics and found that the majority of respondents rated their health as "good" or "very good" [7]. Other national studies have highlighted specific areas of concern[8, 9]. For instance, a community-based study in Al-Ahsa on prediabetes knowledge found that while 87.1% had a high level of knowledge, gaps persisted among older adults and non-health practitioners. A 2025 cross-sectional study on food-related knowledge revealed poor knowledge among participants, and other community-based needs assessments have been conducted in regions such as Hail, Makkah, Medina, and Najran[10, 11, 12, 13].

2.3. Aljouf Region

In the Aljouf Region specifically, no comprehensive CHNA had been conducted prior to this study. Existing research has been limited to assessing specific health issues. One cross-sectional study among hypertensive patients attending PHCs in Aljouf found that nearly half had inadequate knowledge about hypertension, and over 40% exhibited poor medication adherence[14]. Another study on contraceptive use among women identified significant gaps in usage[15]. Public awareness of MERS-Coronavirus was found to be moderate[16], and a study on periodontal disease reported a very high prevalence[17]. These studies highlight specific health needs and service gaps within the region but underscore the absence of a comprehensive, participatory CHNA linked to actionable

planning. Therefore, this CHNA in Aljouf represents a critical opportunity to synthesize existing evidence, fill gaps in understanding social determinants and community perspectives, and provide a robust foundation for strategic health planning.

3. Rationale and Objectives

The decision to undertake this CHNA was driven by several key factors. First, it is a requirement of the healthcare transformation process and an integral part of the Aljouf Health Cluster's strategic plan. Second, the review of current literature confirmed a clear need for a comprehensive, participatory assessment that could directly inform action. CHNAs provide a basis for informed decision-making by identifying health concerns, available resources, and existing gaps, thereby guiding resource allocation and intervention planning. They also facilitate a community-informed approach, helping to tailor interventions and potentially reduce health disparities by involving community stakeholders in identifying local priorities.

The general objective of this assessment was to develop a better understanding of the Aljouf community's health status and needs. The specific objectives were to: (1) identify the community's health needs; (2) identify the most important health problems; (3) identify gaps in health service delivery; and (4) establish priorities for future healthcare delivery.

4. Defining the Community

The Aljouf Health Cluster serves the Aljouf Region, one of the thirteen administrative regions of the Kingdom of Saudi Arabia. Located in the north of the Kingdom, it shares borders with Jordan to the north, the Northern Borders Province to the east, Tabuk Province to the west, and Hail Province to the south. Aljouf is the 9th largest province by surface area and the 4th smallest by population. According to the 2022 Saudi Census, the population of Aljouf is 595,822, of whom 67.7% are Saudi nationals. The population is distributed across its governorates, with 39.7% residing in Sakaka, 32.7% in Al-Qurayyat, 18.4% in Tabarjal, and 9.1% in Domat Aljandal.

5. Methodology

The CHNA process relied heavily on the collection, review, and interpretation of both primary and secondary data from a variety of sources using a mixed-methods approach. Four distinct tools and approaches were employed to ensure a comprehensive and triangulated understanding of the community's health needs.

5.1. Review of Secondary Data

Secondary data were collected and reviewed from several sources, including the Raqem platform (June 2023 – June 2024), the Wasfati platform (2022–2024), the General Authority of Statistics (2022), and the Yamamh Platform (June 2020 – June 2024). This data was used to describe the demographic profile, environmental context, and health determinants of the population, as well as to identify common health problems and the availability of existing healthcare services.

5.2. Cross-Sectional Survey

To gain deeper insight into the health situation, a comprehensive survey was conducted using an adapted questionnaire. The survey was administered across all four zones of the cluster, with all PHC centers collaborating in the data collection process. Data from over 400 respondents were collected. The data were analyzed using Microsoft Excel and presented in appropriate formats to provide insights that would inform other assessment activities, as well as healthcare service planning and delivery.

5.3. Focus Group Discussions

Focus group discussions (FGDs) were conducted to gather in-depth qualitative data on community perceptions of health needs. Each FGD consisted of a small discussion group of 5 to 7 participants, led by a trained facilitator. Participants were selected from all four provinces, with at least two FGDs conducted in each. The questions posed were broad and open-ended, developed from the review of secondary data and preliminary survey analysis. The objective was to verify and affirm the quantitative findings by comparing them with the qualitative perspectives gathered from the community. The discussions were facilitated by a well-trained team selected from the PHC centers in each province.

5.4. Key Informant Interviews

A number of key informants, including community leaders and stakeholders, were identified and interviewed to collect additional data and help develop consensus on priority health problems. These interviews were conducted using a structured questionnaire developed specifically for this purpose, allowing for the collection of focused and expert perspectives on the community's health needs.

6. Results of the Assessment

Data from the various sources were collected and analyzed using appropriate methods to identify significant healthcare-related issues. Findings from different sources were compared to identify connections, relationships, similarities, and recurring themes.

6.1. Results of the Secondary Data Review

The review of secondary data revealed that the Aljouf Health Cluster (JHC) has a population of approximately 600,000, with 58% males and 42% females. The healthcare infrastructure includes 14 hospitals and 63 government PHC centers, with 24 in Sakaka, 20 in Alqurayat, 11 in Domat Aljandal, and 8 in Tabarjal. Data from the Raqem HIS indicated higher healthcare utilization by females (56%) compared to males (44%), and only 7% of individuals receiving care at PHC centers were non-Saudi nationals. The most commonly diagnosed diseases in PHC centers were the common cold, followed by acute pharyngitis, accounting for 9.52% and 7.12% of total cases, respectively. The most prevalent health problems identified from the data were obesity, with an overall population prevalence of around 26%, followed by diabetes mellitus with a prevalence of 7.3%. The most frequently utilized healthcare services in the district were routine child examinations, with 8,864 visits annually, followed by antenatal care (ANC) with 2,606 visits annually.

6.2. Results of the Survey Data Analysis

The survey data, collected from 442 participants, were cleaned and summarized using Microsoft Excel. The sample comprised 91.2% Saudi and 8.8% non-Saudi individuals. The majority of participants were male (62%) and married (70%). Over 75% of respondents had higher education, with more than 30% holding a postgraduate degree, and only 2% were illiterate. In terms of employment, 65% were employees, with 57% of those working in the government sector. Over 70% owned their own housing.

Regarding health status, 92% of participants reported good health. Approximately 39% of participants had a BMI greater than 25 kg/m², while a similar percentage were unaware of their BMI. There was low utilization of preventive dental services compared to clinical preventive services, with 45% of respondents reporting no dental preventive visits in the previous year, compared to 27% who had no clinical preventive visits. A majority (53%) did not use any contraceptive methods, and 23% of those who had been pregnant reported no antenatal care visits. Concerning healthcare-seeking behavior, 80% of participants used government facilities, with 71% visiting PHC centers and 9% using hospital emergency departments. Only 11% sought care in private facilities. Notably, 21% of respondents reported difficulties in obtaining appointments at government facilities.

Lifestyle factors revealed significant areas for intervention. Around 30% of participants reported consuming fast food very frequently, only 30% exercised regularly, and 22% were smokers. Furthermore, 57% reported exposure to passive smoking, and 38% of women did not breastfeed their babies. Mental health emerged as a concern, with 71% of respondents reporting experiencing stress and over 90% expressing worry about job loss. In terms of chronic disease management, 47% of those with diabetes reported good control, 49% of those with hypertension reported control, while only 31% of those with asthma reported good control. A significant finding was that 52% of participants reported traveling outside the Aljouf Region for healthcare. Of these, 26% cited difficulties in obtaining appointments in government facilities as the reason, while 10% said the required service was simply not available. The key health needs identified from the survey data included: availability of specialized services (e.g., pediatric neurology, obstetrics and gynecology, speech and language care, burn units), improved access to healthcare services (emergency rooms and outpatient departments), lack of integrated electronic medical records between PHCs and hospitals, insufficient safe water supply in some districts, and a lack of X-ray services in PHC centers.

6.3. Key Informant Interview Findings

The key informant interviews provided an expert perspective on the community's health needs. The health problems they identified as most important were diabetes, hypertension, cancer, and chronic diseases in general, as well as issues related to curative services and access to medications. The specific health needs they highlighted included

the availability of specialized staff and medical equipment, the establishment of specialized centers, and improvements to the hospital appointment system to enhance access.

6.4. Focus Group Discussion Findings

The focus group discussions served to validate and enrich the findings from other methods. The participants collectively identified the following as the most important health issues and problems in their community:

2. **Diabetes Mellitus:** A pervasive concern due to its high prevalence and impact.
3. **Obesity:** Recognized as a major underlying risk factor for many other conditions.
4. **Smoking:** Identified as a significant public health challenge with wide-reaching effects.
5. **Access to Healthcare and Specialized Services:** A critical barrier, particularly for specialized care, which often requires travel outside the region.

7. Summary of CHNA Findings and Recommended Solutions

The triangulation of data from all four assessment methods—secondary data review, cross-sectional survey, focus group discussions, and key informant interviews—enabled the team to identify a clear set of priority health needs for the Aljouf community. The most pressing needs identified were access to healthcare and specialized services, diabetes care, obesity services, smoking services, and mental healthcare. These priorities reflect both the clinical burden observed in secondary data and the lived experiences articulated by community members and stakeholders throughout the assessment process.

To address these priority health needs, the team developed a comprehensive set of recommended solutions and interventions. A key recommendation is the integration of mental healthcare services into primary healthcare centers to improve accessibility and reduce stigma. Improving dental care access by reducing long wait times, with a particular focus on children, was also emphasized. Access to specialized clinics—such as pediatric neurology, pediatric cardiology, and genetic and prenatal care—should be expanded to reduce the need for travel outside the region. Strengthening the role of primary healthcare centers and urgent care facilities can alleviate pressure on hospital emergency departments; this would involve implementing proper triage and referral systems for non-critical patients. The expansion and improved utilization of virtual clinics and telehealth services were identified as a strategic priority to bridge geographical gaps. Enhancing laboratory services within PHC centers and improving community awareness of preventive healthcare programs and services are also critical. The team recommended expanding home healthcare services and launching targeted community awareness campaigns focused on chronic diseases—including diabetes mellitus, obesity, cancer, and smoking—along with the available preventive and curative services.

Promoting healthy lifestyles through encouragement of regular exercise and healthy eating habits, along with supporting breastfeeding through education and support programs, formed another pillar of the recommended interventions. Strengthening school health services to align with the identified priorities was also proposed. To foster a more sustainable health culture, the team suggested enhancing the community's role in health and healthcare delivery by developing guidance on how to build a healthy community. Re-enforcing laws and regulations related to public health, such as no-smoking rules and associated disciplinary actions, was deemed important for environmental and behavioral change. Additional recommendations included providing more resources and support for families with children who have special needs, as well as conducting regular assessments—including opportunistic CHNAs and focused surveys—to monitor progress on addressing the identified healthcare needs and to detect emerging health issues in a timely manner.

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