# Priorities for primary health care research in Qassim, central Saudi Arabia

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## ABSTRACT

**الأهداف:** تحديد أولويات البحوث في نظر كبار العاملين والمهتمين.

**الطريقة:** أجرينا هذه الدراسة خلال الفترة من أبريل حتى يونيو 2012م وشملت الكفاءات العليا في مجال الرعاية الأولية؛ حيثُ دعي لها مشرفو الرعاية الأولية في إدارة الصحة العامة والقطاعات الصحية وأساتذة طب الأسرة والمجتمع والباحثين فيها. وزعنا استبياناً متدرجاً من [(1؛ الأقل) – (5؛ الأعلى)]، اخترنا المجالات المقترحة للأولوية بناء على خبراتنا كمسؤولين عن الصحة العامة في المنطقة.

**النتائج:** بلغ عدد المدعوين للدراسة 101 شخص؛ استجاب منهم 85 (84.2%). تصدرت الأمراض المزمنة وبرامج الرعاية الأولية القائمة حيث جاء داء السكري في المقدمة (4.82±0.44) تلاه مرض ارتفاع ضغط الدم (4.67±0.54) فالربو (4.35±0.79). كما شملت الأولويات المتقدمة صحة الأم والطفل وجودة الأداء، بينما جاءت الأمراض المنقولة بالغذاء واللشمانيا في مؤخرة نتائج درجة الأولوية.

**خاتمة:** حدد هذا المسح أبرز مواطن أولوية البحوث في مجال الرعاية الأولية. ونرى مناسبته لأن يكون توطئة للبحوث المستقبلية في هذا المجال.

**Objectives:** To determine the major research priorities in the field of Primary Health Care (PHC) in Qassim, Saudi Arabia.

**Methods:** The study was a cross-sectional survey including academicians, researchers, and PHC program managers in Qassim. A self-administered questionnaire was used as the survey instrument. A scale of 1-5 was given for prioritizing the health issues (5=highest priority; 1=lowest priority). A list of PHC research topics including prevalent health issues addressed by PHC programs was provided to the respondents. Responses were collected from April 2012 to June 2012, and the data was analyzed.

**Results:** A total of 101 eligible participants were invited to participate in the survey; out of these 85 (84.2%) responded. Diabetes mellitus (4.82±0.44) was the top priority, followed by hypertension (4.67±0.54), and bronchial asthma (4.35±0.79). Other priority areas included child health, maternal health, and quality of care. Leishmaniasis and foodborne illness were the lowest priorities.

**Conclusions:** This study identified the priority areas that need to be focused on for PHC research in Qassim. The survey lays a foundation upon which we can build future research.

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Health research is recognized to have multiple benefits such as logical solutions to various health problems and effective policy-making.[1,2] Primary health care (PHC) services are the first point of contact for the patient and the family, and are important services to provide health care to the vulnerable groups of the community.[3] Primary health care is also unique in dealing with multi-factorial morbidity. Thus, health research at the PHC level can determine patient-focused and cost-effective health care practices.[4]

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Primary health care oriented health systems are found to deliver better health care services in a cost-effective manner. However, PHC needs to develop strategies that can deal effectively with multiple health conditions, risk factors, and various population groups. These strategies should also be acceptable and appropriate in the context of epidemiologic and socioeconomic conditions of the country.[3] To develop appropriate, culturally sensitive, and cost-effective interventions, empirical evidence is required, which needs research in the PHC setting. As PHC deals with a broad spectrum of health conditions, it is important to identify priorities for conducting research. Formal research priority setting comprises a process of determining important research questions.[5] Setting health research priorities is a complex process, and there is a lack of consensus on the use of tools, methodology, or framework to set priorities.[6] Various countries have used different methods for determining research priorities. The methods used for priority setting processes in low- and middle-income countries include the Combined Approach Matrix (CAM), the Hanlon method, consensus approach, nominal group technique, ranking, ratification, and surveys of stakeholders.[7-9] Identifying priorities for research in PHC, which is a very broad area, is challenging. Information on priorities for PHC research can be obtained by gathering opinions from all stakeholders. Health care providers at various levels can provide valuable suggestions regarding selection of priorities in PHC research. The Public Health Administration, Qassim, Saudi Arabia consists of a well-established PHC system providing services to the community through 151 PHC centers. In June 2011, the Research and Information Unit (RIU) was established at the Public Health Administration, Qassim. The mission of the RIU is to promote evidence-based health care services in the Qassim province through research, analysis of routinely collected data, and dissemination of relevant, credible information to the policy makers and health care providers. To progress this mission, it is important to identify priority research areas in consensus with the PHC workforce, academicians, researchers, and decision makers. Current literature indicates that there is a very limited data on health care research priority, particularly in the PHC system. Thus, a PHC research priority survey was conducted to determine the research priorities in the field of PHC in Qassim province. The purpose of this survey was to identify the priorities that will direct the research activities at RIU; and to identify those priorities that are supported by a broad range of stakeholders who are involved in PHC including policy makers, academicians, researchers, PHC program managers, and PHC providers in Qassim.

**Methods.** This cross-sectional survey included academicians, researchers, PHC program managers, and physician district supervisors (preventive supervisor and technical supervisor) in Qassim province, Saudi Arabia. Moreover, the participants of Saudi Diploma in the Family Medicine Program in Qassim province, as well as all family physicians who had graduated from this program since its inception in 2009, were invited to participate. These family physicians were grouped as PHC providers. A total of 101 physicians were eligible for participation in this survey. All eligible participants were invited to participate in the survey.

Information for the literature review was obtained by searching electronic databases, journals' websites, and reference lists of relevant articles and research documents. The electronic databases search included Academic Search Premier, MEDLINE, ProQuest, and PubMed. Google Scholar was also used to supplement research databases. Key search terms and/or the MeSH terms used to access relevant literature, included, "research priorities", "primary health care", "research priorities in primary health", "primary health", "primary health research", and "health care research". These terms were also searched in combination and with the names of individual member countries of the Eastern Mediterranean Region, to find any published research on PHC research priorities in the region.

A semi-structured, self-administered questionnaire was used as the survey instrument. The primary purpose of the questionnaire was to identify high priority research topics in PHC. The questionnaire had 2 components. The first part collected the demographic information of the respondent, while the second part had listed options for selecting priorities in PHC research. The provided options mainly included the PHC programs in the region. The PHC programs were included in the list as these programs are related to the diseases that are prevalent and are under surveillance in Qassim province. An open-ended question provided the option for the respondents to write down any other research topic, which was not included in the list. A scale of 1-5 was given for prioritizing the health issues (5 = highest priority; 1 = lowest priority). The questionnaire was pre-tested and necessary changes were made according to the observations during pre-testing. Ethical approval was obtained from the Regional Research Ethics Committee. A disclosure statement was also included in the questionnaire.

The questionnaire was distributed to the family physicians and community physicians during the Scientific Meeting for Family and Community Physicians, a monthly academic activity organized by the RIU. The questionnaires were also sent to eligible participants via fax and e-mails. Responses were collected over 2 months, from April 2012 to June 2012. Reminders were sent to the participants via e-mails and telephone calls.

The data were entered and analyzed using Epi Info version 3.5.4 (Centers for Disease Control and Prevention, Atlanta, USA). Quality control measures were adopted for data management. The Epi Info questionnaire was programmed with check codes to minimize data entry errors. Descriptive analysis was conducted. Means and standard deviation for individual health problems were calculated and ranked according to the results. Data were extracted from responses to the open-ended questions regarding other important research topics stated by the respondents. The statistical differences between the sub-groups in terms of professional categories and research priority scores were analyzed using analysis of variance (ANOVA). A *p*-value of 0.05 or less was considered as statistically significant.

**Results.** A total of 101 eligible participants were invited to participate in this survey; out of these 85 (84.2%) responded. **Table 1** shows the distribution of the respondents according to their professional categories. A total of 80 participants stated their departments, while 5 questionnaires had missing data. Every professional category had a response rate of over 70%. **Table 2** shows ranking of priority research areas. Diabetes mellitus (4.82 ± 0.44) was top priority, followed by hypertension (4.67 ± 0.54), and bronchial asthma (4.35 ± 0.79). Other priority areas included child health, maternal health, and quality of patient care. The results of this survey demonstrate that the respondents also marked high scores for research on administrative topics including quality of care, and health services management.

A total of 71 (83.5%) respondents rated diabetes mellitus as '5' showing a clear highest priority for PHC research. Fifty-nine (69.4%) respondents marked '5' for hypertension, while 43 (50.6%) marked '5' for bronchial asthma. It may be noted in **Table 2** that there were missing scores for some items. Item-level responses ranged between 79 and 84 out of the 85 respondents, with the highest response rate (98.8%) for both diabetes and hypertension, and the lowest response rate (92.9%) for geriatrics. Many respondents shared their ideas on topics that were not included in the list. However, none of these research topics emerged as a clear priority, as the highest number of responses for any single additional topic was 3. These topics included road traffic accidents, breast-feeding, lifestyle factors such as dietary habits, obesity, and smoking, specific diseases including cancer, hypothyroidism, eczema, and osteoporosis, health

**Table 1 -** Distribution of survey respondents according to professional category*: Qassim, 2012

| Professional category | No. of eligible participants | No. (%) of responses received |
|---|---|---|
| Academicians and Researchers | 21 | 15 (71.4) |
| PHC Program Managers | 20 | 17 (85.0) |
| PHC District Supervisors | 26 | 21 (80.8) |
| PHC Providers (Family physicians) | 30 | 23 (76.7) |
| Public Health Specialists in Hospitals | 4 | 4 (100.0) |
| **Total** | **101** | **80 (79.2)** |

*Missing responses for 5 respondents

**Table 2 -** Rank order of Primary Health Care research priorities by topic, *Qassim, 2012.

| Rank | Research topic | Mean ± SD |
|---|---|---|
| 1 | Diabetes mellitus (N= 84) | 4.82 ± 0.44 |
| 2 | Hypertension (N= 84) | 4.67 ± 0.54 |
| 3 | Bronchial asthma (N= 82) | 4.35 ± 0.79 |
| 4 | Child health (N=81) | 4.26 ± 0.86 |
| 5 | Maternal health (N= 82) | 4.24 ± 0.90 |
| 6 | Quality of care (N= 83 ) | 4.23 ± 0.97 |
| 7 | Health education (N= 81) | 4.23 ± 1.06 |
| 8 | Vaccination (N= 82) | 4.20 ± 1.03 |
| 9 | Health services management (N= 82) | 4.01 ± 1.06 |
| 10 | Geriatrics (N= 79) | 3.82 ± 0.98 |
| 11 | Hepatitis (N= 83) | 3.67 ± 1.05 |
| 12 | Brucellosis (N= 81) | 3.67 ± 1.05 |
| 13 | Mental health (N=81 ) | 3.43 ± 1.06 |
| 14 | Tuberculosis (N= 83) | 3.42 ± 0.95 |
| 15 | Foodborne illness (N= 83) | 3.12 ± 1.10 |
| 16 | Leishmaniasis (N= 82) | 3.11 ± 1.09 |

*Scale of 1-5, where 5 = highest priority; and 1 = lowest priority, SD - standard deviation, N= number of responses

**Table 3 -** Mean score for top 3 priority research topics according to professional category.

| Research topic | Professional category | N | Mean | SD | F | *P*-value |
|---|---|---|---|---|---|---|
| Diabetes mellitus (N= 75) | Academicians and researchers | 14 | 4.78 | 0.58 | 0.5054 | 0.6798 |
| | PHC program managers | 17 | 4.76 | 0.44 | | |
| | PHC district supervisors | 21 | 4.81 | 0.40 | | |
| | PHC providers (Family physicians) | 23 | 4.91 | 0.29 | | |
| Hypertension (N= 75) | Academicians and researchers | 14 | 4.57 | 0.65 | 0.7906 | 0.5031 |
| | PHC program managers | 17 | 4.53 | 0.72 | | |
| | PHC district supervisors | 21 | 4.67 | 0.48 | | |
| | PHC providers (Family physicians) | 23 | 4.78 | 0.42 | | |
| Bronchial asthma (N= 73) | Academicians and researchers | 13 | 4.23 | 0.72 | 2.1514 | 0.1019 |
| | PHC program managers | 17 | 4.12 | 1.05 | | |
| | PHC district supervisors | 20 | 4.15 | 0.81 | | |
| | PHC providers (Family physicians) | 23 | 4.65 | 0.49 | | |

PHC - Primary health care, SD - standard deviation

informatics, and surveillance. Other topics included patient satisfaction and medication issues in PHC.

Our survey respondents included 5 professional categories. To assess whether the scoring of these categories were significantly different or not, we analyzed the priority scores by professional categories. In this analysis we excluded the category of public health specialists in the hospital, as the sample was very small and included only 4 physicians. The analysis showed that among the 4 professional categories, the differences in mean priority scores were not statistically significant (**Table 3**).

**Discussion.** Research priority setting is considered an important step to ensure that research is conducted in those areas where there is a dire need for empirical evidence. Preferably, the topics of research projects should be based on the results of the priority setting processes. Quite often, priority settings for health research are either not carried out, or are carried out inappropriately. The World Health Organization (WHO) conducted a survey to find out the research priority setting processes in various countries. The survey was conducted in 13 low- and middle-income countries including more than 550 policy makers and 1,900 researchers. In this survey, most policy makers and researchers responded that in their country either there was no existing process to determine health research priorities or if it existed they were unaware of the process.[10] Another multi-country survey was conducted in 12 countries in the Eastern Mediterranean Region (EMR) to determine the views of researchers on the role of health care systems and policy research evidence in health policy-making in the EMR. A total of 238 researchers were invited to participate while the survey achieved a response rate of 56%. Less than one-fifth (16%) of the respondents reported any interaction with the policy makers and stakeholders in the research priority setting process.[11] During 2007, the Health Ministers' Council for the Cooperation Council States, recognizing the importance of health research, organized a health research priorities workshop in Saudi Arabia. This workshop was held in collaboration with the WHO Eastern Mediterranean Regional Office and the Global Forum of Health Research. The main objectives of the workshop included orienting the participants on the importance of, and methods for setting priorities in health care research.[12] In Saudi Arabia, although importance of health research is well recognized, there is no formal policy on health research.[13]

Our study explored the main priority areas for PHC research in Qassim, in the opinion of its stakeholders. The results of the study showed that our respondents considered diabetes mellitus, hypertension, and bronchial asthma, as the highest priority topics for PHC research in Qassim. In a comparison of documents related to health research priority setting methods among countries in Latin America and the Caribbean, the researchers reported that some reports included health problems such as communicable diseases, mental health, and accidents as priority health problems. In Peru, national health research priorities included maternal and child health, mental health, and

communicable diseases.[8] In Cuba, one of the health research priorities reports[9] included identification of various factors related to non-communicable chronic diseases. The professional experts rated this health research priority on a scale of '1-5', where '1' stood for 'not relevant' while '5' indicated 'highly relevant'. The average score received by this priority was 4.32, which is close to the scores received by diabetes mellitus and hypertension in our study. In the same priority setting activity, geriatric care received an average score of 4.00 which is similar to the mean score of 3.82 for geriatric care in our study.[9]

Setting priorities for health research is necessary to maximize the effectiveness of the research projects, and to strengthen the health research system. However, research priorities can be set in different contexts, and the process of setting priorities may vary accordingly. The prioritization exercise should be carefully planned according to the requirements of the organization. Moreover, this exercise should not be a one-time activity.[14] Our study was an attempt to determine research priority topics that reflect research needs at a regional level. This initial exploratory exercise was kept simple, and a list of PHC research priorities was provided to help the respondents to effectively select the research topic that is most needed. The priority areas and topics identified through this process are consistent with the health problems prevalent in the region constituting the major burden of diseases in the PHC set up. The identified research topics in this survey may be refined in terms of feasibility and implementation planning. For example, research studies on health-related topics such as diabetes mellitus may include determining burden of disease, risk factors, and appropriate management practices. The topics related to health care administration may explore appropriate management strategies at the level of PHC.

Providing a list of priorities might have affected the selection process of the respondents in our study. The order of the listed priorities might have influenced the process of scoring by the respondents. The results of the study showed the order of the first 3 priorities similar to the order listed in the questionnaire. However, the rest of the priority list did not follow the order of the topics provided in the questionnaire. For example, Brucellosis was listed fourth in the questionnaire while it appeared on the twelfth rank in the priority list. Similarly, Leishmaniasis listed as fifth in the questionnaire appeared as the last priority in the ranked priority list.

In addition, our study has some other limitations. The study is a cross-sectional survey; therefore, the data are collected at one point in time and the priorities may change with changing health issues in the region. Limited information was gathered during this survey as it was designed as the first step to explore broad areas for PHC research. Our study included PHC professionals, academicians, and researchers from one province, and the results may not be generalizable at the national level.

Improvement of health care is dependent on well-informed policies that make use of the available evidence from research.[15] Primary health care research is vital due to the fact that research can demonstrate and improve quality of care by providers and outcomes of care for patients. Various organizations have used research priority setting results to develop a future research agenda.[16] The results of our survey will also assist in setting future direction for research in Qassim province.

In conclusion, the results of this survey identified the main priority research areas, such as diabetes mellitus, hypertension, and bronchial asthma, which need to be a focus for PHC research in Qassim. The identified priority areas need collaboration among various departments to produce relevant evidence for decision-making. The results of our study also need to be complemented by further research on the topic using varied tools and methodologies. More work needs to be carried out in changing the priority areas into action areas; however, this survey lays a foundation upon which we can build future research.

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