

Review Article

Quality of primary health care in Saudi Arabia: a comprehensive review

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Abstract

Objectives. Little is known about the quality of primary care in Saudi Arabia, despite the central role of primary care centers in Saudi health strategy. This study presents an overview of quality of primary care in Saudi Arabia, and identifies factors impeding the achievement of quality, with the aim of determining how the quality of Saudi primary care could be improved.

Method. Using a systematic search strategy, data were extracted from the published literature on quality of care in Saudi primary care services, and on barriers to achieving high-quality care.

Results. Of the 128 studies initially identified, 31 met the inclusion criteria for the review. Studies identified were diverse in methodology and focus. Components of quality were reviewed in terms of access and effectiveness of both clinical and interpersonal care. Good access and effective care were reported for certain services including: immunization, maternal health care, and control of epidemic diseases. Poor access and effectiveness were reported for chronic disease management programs, prescribing patterns, health education, referral patterns, and some aspects of interpersonal care including those caused by language barriers. Several factors were identified as determining whether high-quality care was delivered. These included management and organizational factors, implementation of evidence-based practice, professional development, use of referrals to secondary care, and organizational culture.

Conclusion. There is substantial variation in the quality of Saudi primary care services. In order to improve quality, there is a need to improve the management and organization of primary care services. Professional development strategies are also needed to improve the knowledge and skills of staff.

Keywords: access, assessment, effectiveness, performance improvement, primary health care, quality, quality improvement, Saudi Arabia

In 1978, the Alma Ata Declaration issued by the World Health Organization (WHO) General Assembly identified primary health care as the means to achieve health for all by the year 2000. In accordance with the Alma Ata declaration, Saudi Arabia identified the development of primary health care as one of its most important strategies. Today, the Ministry of Health (MOH) operates 1787 primary care centres throughout the country, each serving an average of 8727 people [1].

Variations in quality of care exist in many countries including the United States [2], United Kingdom [3], and United Arab Emirates [4]. Like other countries, Saudi Arabia is facing challenges due to growing demand on health services, rising costs, and public pressure for better services.

Quality of health care is a multidimensional concept that has been defined in various ways [5–7]. Recently, components of quality were identified as a combination of access (whether individuals can access health structures and processes of care

that they need) and effectiveness (the extent to which care delivers its intended outcome or results) [8]. Effectiveness has two elements: clinical care and interpersonal care [8].

Promotion of quality has always been an integral part of primary health care programs in Saudi Arabia. In 1993, national guidelines for quality assurance in primary care were established. These guidelines cover the main aspects of primary care including: community participation, child health care, immunization, referral, chronic disease management, prescribing, health education, maternal health care, management of communicable diseases, and environmental health [9]. A management development program (Supporting Supervision) was launched in 1995 to prepare regional supervisors to be key players in quality improvement efforts in primary care [10]. Other quality improvement measures were also taken, including treatment protocols and new approaches to staff training.

Twenty years after the implementation of primary health care programs, and 10 years since the initiation of the quality assur-

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ance program, little information is available on the quality of primary health care in Saudi Arabia. This study seeks to use a comprehensive review of the literature to present an overview of the quality of primary care in Saudi Arabia, and identify barriers that impede achievement of quality in primary care organizations.

Methods

Search strategy

A search was conducted of Medline and Embase databases for the years 1985–2004 using the keywords: ‘primary care’, ‘primary health care’, ‘general practice’, ‘community medicine’, and ‘family medicine’ along with the term ‘Saudi Arabia’. The indexes of the *Saudi Medical Journal* and *Annals of Saudi Medicine* were also hand-searched for relevant articles. Six additional papers were identified from the reference lists of these papers, and more were obtained through personal contacts with experts in the field. These searches produced 126 publications on primary care in Saudi Arabia.

Eligibility of studies

Studies were included if they addressed aspects of primary care services covered by the national quality assurance guidelines. Only studies published in peer-reviewed journals were included. Audit of clinical records, analysis of official reports, observational studies, and surveys of opinions and attitudes (of patients, members of households, health professionals, and managers) were included. Articles presenting individual personal assessments or reflections, or those which were principally educational, e.g. describing clinical procedures, were not included. Studies with a sample size of less than 100 were also excluded. No attempt was made to score methodologies used in these studies due to their heterogeneous nature. A summary of the types of study identified is presented in Table 1.

Analysis

Each article was carefully read by the main author and the following data were extracted: method, data collected, sampling methods, sample size, response rate, number of organizations, region, and results. These are presented in Table 2. The findings were then organized into coherent themes using a narrative review approach, which identified common elements in the studies reviewed.

Results

Thirty-one papers fulfilled the eligibility criteria. The studies were variable in terms of their scope and methodology. While most focused on clinical care, some focused on administrative or interpersonal aspects of care. The results are classified into two main categories: quality of care provided, and barriers to providing quality.

Table 1 Summary of methodology used in the studies reviewed

	Methodology	No.
Inclusion	Reviewed	57
	Eliminated	26
	Included	31
Type of study	Retrospective records review	10
	Cross-sectional survey	18
	Other	3
	Questionnaire	14
Data collection	Interview	4
	Audit of records	10
	Other	3
	Sample size	<100
Percentage response rate	100–150	1
	151–500	15
	>500	11
	Not applicable	3
	<25	0
	25–50	0
	51–75	1
Region	76–100	12
	Not reported/not applicable	18
	Western	1
	Central	14
	Eastern	4
Type of organization	Southern	6
	Northern	2
	Several regions	4
	MOH	29
	Military	2

Quality of primary care

Quality of care is described in terms of access to care and effectiveness of care, including both clinical and interpersonal aspects of care [8].

Access

Good access was reported to prenatal care (67–95%) [11], vaccination programs (83–94%) [12], and screening and treatment of epidemic diseases (schistosomiasis) [13]. Access to programs targeting chronic illnesses was found to be below target [14–18]. For example, only a small proportion of registered patients who have hypertension come for treatment in primary health care centers [15]. Low referral rates prevented appropriate access to specialist care [18], and access to health education was also low [16]. In order to improve access to services, 90% of primary care centers established appointment systems, registers, and follow-up systems [14].

A study of patient satisfaction showed that patients were dissatisfied with several aspects of access, including waiting time (74.9%), waiting areas (58.1%), and the physical environment

Table 2 Results of literature review

Reference	Study design	Region	Sample size	Response (%)	Setting	No. orgs	Dimension	Focus	Results
El-Gilany and Aref 2000 [11]	Interview survey of a random sample of households	North	375	NR	MOH	Six centers	Access	Maternal health	Coverage of maternal health services is 95% in rural and 67% in urban areas. Low socio-economic groups received less care.
Al-Teheavy and Foda 1992 [12]	Analysis of statistical reports	East	NA	NA	MOH	NA	Access/ effectiveness	Vaccination	Between 1984 and 1989 vaccination coverage in first year of life increased from 83% to 94%. The total number of reported cases of targeted diseases dropped: TB (97–56), measles (502–84).
Jarallah <i>et al.</i> 1993 [13]	Analysis of statistical reports	Central	NA	NA	MOH	NA	Access/ effectiveness	Epidemics	Between 1983 and 1989, the prevalence of schistosomiasis fell from 13.2 to 0.17 per 100 000 population. In 1983, it was higher among Saudis than non-Saudis (91.1% versus 8.9%). It dropped among Saudis (91.1–32.6%) and increased among non-Saudis coming from highly infested regions such as Sudan, Yemen, and Egypt (8.9–67.4%). 20–39 year olds had the highest prevalence rate (54.7%). No children under 5 years old and no school age children were infected with <i>Schistosoma</i> species in 1989.

continued

Table 2 *continued*

Reference	Study design	Region	Sample size	Response (%)	Setting	No. orgs	Dimension	Focus	Results
Al-Khaldi and Al-Sharif 2002 [14]	Questionnaire survey of all technical directors of primary care centers	South	242y	98	MOH	NA	Organization effectiveness	Resources diabetes competence	Inadequate resources for diabetic patients, e.g. only 10–86% essential drugs and lab items are always available, 35% of centers have coordination with hospitals for diabetic care, 74% have mini clinic for diabetes, 90% had appointment system for diabetics, 8% had health educators, and 43% had nurses trained to provide health education. 90% of centers had diabetic files, registries, follow-up systems, and protocols for diagnosis and treatment. Only 20% of doctors attended training courses on diabetes.
Al-Mustafa and Abularhi 2003 [15]	Review of records of a random sample of adult hypertensive patients	East	320	NA	MOH	13 centers	Access	Hypertension	Registers document between 16 and 35% of the expected number of adult hypertensive patients in the community. The study concluded that services offered cover less than one-fifth of the expected number of patients.
Al-Khaldi and Khan 2000 [16]	Review of all records of diabetic patients.	South	198	All	MOH	One center	Access/ effectiveness	Health education: diabetes	Diabetic patients received education on: diabetes (80%), medications (21%), signs of hypoglycemia (21%), insulin injection (44%), exercise (25%), foot care (39%), diet (77%). 27% of patients received no education at all. 73% received education on at least one topic, and 33% had adequate education. Inadequate structure and process for health education.

continued

Table 2 *continued*

Reference	Study design	Region	Sample size	Response (%)	Setting	No. orgs	Dimension	Focus	Results
Siddiqui <i>et al.</i> 2001 [17]	Review of a random sample of case notes of hypertensive patients.	Central	3747	NA	Armed forces	One center	Effectiveness	Hypertension	Control of blood pressure among hypertensive patients was below targets (compared with the British Hypertension Society guidelines published in 1999).
Al-Khaldi <i>et al.</i> 2002 [18]	Record review of records of all diabetic patients.	South	203	NA	MOH	NR	Access	Diabetes	Inadequate referral to specialized clinics, e.g. only 40% of diabetics were referred to eye clinic in 1996 and 68% in 1997. Hospital feedback rate was 72%. Prevalence of diabetic retinopathy was 11.3%.
Qatari and Haran 1999 [19]	Interview survey of a random sample of heads of households	East	802	98	MOH	Three centers	Access/ effectiveness	Patient satisfaction	Satisfaction with: attitudes of staff (96.4%), outcome of care (88.4%), activities related to patient care (86.2%). Dissatisfaction with: waiting time (74.9%), waiting areas (58.1%), confidentiality (62.1%), building (63.8%), explanation given on various activities conducted during consultation (64.7%).
Ali <i>et al.</i> 1993 [20]	Interview survey of a random sample of heads of households	Central	900	NA	MOH	14 centers	Access/ effectiveness	Patient satisfaction	61–74% of patients indicated that the health center is their first choice when sick; 40% were dissatisfied because: center is too far, working hours are unsuitable, lack of specialty clinics, language barriers, delays, and inadequate explanation by doctors.
Al-Faris <i>et al.</i> 1996 [21]	Questionnaire survey of a random sample of patients	Central	466	NR	MOH	Six centers	Access/ effectiveness	Patient satisfaction	High overall satisfaction (90%). Identified problems with language barriers (39%), inadequate information by doctors (38%), insufficient drug supply (34%), and waiting time (47%).

continued

Table 2 *continued*

Reference	Study design	Region	Sample size	Response (%)	Setting	No. orgs	Dimension	Focus	Results
Baldo 1995 [22]	Questionnaire survey of a national random sample of heads of households	Five regions	6306	NA	MOH	150 centers	Access/ effectiveness	Maternal health	Institutional deliveries 86%; 90% of deliveries were attended by a physician or nurse. Postnatal care by physician or nurse (88%). Relatively high coverage of natal and postnatal services.
Al-Faris and Al-Taweel 1999 [23]	Review of a random sample of prescriptions and records	Central	17 067	NA	MOH	Eight centers	Effectiveness	Prescribing	92% complete documentation of information in prescriptions. Over-prescribing of antihistamines, antibiotics for patients with URTI (25%) as URTI was the diagnostic label used on more than half of the prescriptions. Non-evidence-based prescribing accounted for a significant proportion of prescriptions.
Dashash and Mukhtar 2003 [24]	Review of all patient records.	West	206	NA	National Guard	One center	Effectiveness	Asthma	Lack of diagnosis and treatment of mental illness due to lack of training and freedom to prescribe psychiatric drugs. No prescriptions for psychiatric drugs. Guidelines are not followed; suboptimal care for asthmatic children; poor follow-up and continuity of care; over- and under-prescribing; use of non-recommended drugs; drug interactions.
El-Gilany 2000 [25]	Review of a random sample of patient records.	North	1200	NA	MOH	20 centers	Effectiveness	Prescribing	Over-prescribing of antibiotics for patients with acute respiratory infections (87.8% of cases). This affects a significant number of patients as these infections constitute one-third of all prescriptions in primary care centers.

continued

Table 2 continued

Reference	Study design	Region	Sample size	Response (%)	Setting	No. orgs	Dimension	Focus	Results
Al-Faris <i>et al.</i> 1994 [26]	Observational study of patients attending health centers.	Central	902	NA	MOH	Eight centers	Effectiveness	Consultation	Average consultation length was 5.1 minutes, considered short by international standards. Long consultations did not differ significantly in terms of prescriptions, investigation, or referral. Variable number of consultations: 10 consultations per hour in the evening compared with 5.58 consultations per hour in the morning.
Mahfouz <i>et al.</i> 1997 [27]	Review of records (prescriptions) randomly selected.	South	66 438	NA	MOH	23 centers	Effectiveness	Prescribing	Two-thirds of medical consultations ended by prescribing medications.
Mansour and Al-Osaimi 1993 [28]	Interview survey of a random sample of patients.	Central	300	NR	MOH	Three centers	Access/ effectiveness	Patient satisfaction	The average number of drug items prescribed was 1.44. Prescriptions lacked information on: duration of medication (32.9%), patient's name (15.8%), record number (6.5%). Prescribing drugs by generic name was minimal among physicians (2.9%). Medications prescribed included: analgesics-antipyretics (61.9%), antibiotics (56.2%). Patients are moderately satisfied. Satisfaction scores (on a five-point scale) ranged as follows: waiting time (1.73), distance (3.18), working hours (3.97), referral (3.55), listening (3.11), education provided by nurses (1.87), physician explanation (3.3), pharmacist explanation (3.8), thoroughness (2.74).

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Table 2 *continued*

Reference	Study design	Region	Sample size	Response (%)	Setting	No. orgs	Dimension	Focus	Results
Al-Khaldi <i>et al.</i> 2002 [29]	Questionnaire survey of all members of primary care teams.	South	304	NR	MOH	68 centers	Organization culture	Obstacles	Obstacles faced by primary care teams: lack of medical facilities (22%), language and cultural barriers (12%), rough roads (15.4%), communication barriers (27%), non-compliance (9.3%); 8% indicated cultural barriers, community education level, habits and traditions, and patients' insistence on drugs and referral as obstacles.
Jarallah and Khoja 1998 [30]	Questionnaire survey of all regional supervisors	All regions	159	85	MOH	NA	Management	Role	97% of supervisors are aware of the quality assurance manual and guidelines. Supervisors' concept of supervision: developing staff skills (97%), coordination (92%), looking for defects (83%), solving staff problems (78%). Supervisor role: 42% are involved in planning health services, none are involved in policy, 41% not involved in recruitment of staff, supervisory visits to educate staff (84%), to check performance (94%). 85% of supervisors had no post-graduate qualification, and only 35% had management training.

continued

Table 2 *continued*

Reference	Study design	Region	Sample size	Response (%)	Setting	No. orgs	Dimension	Focus	Results
Khoja and Kabbash 1997 [31]	Questionnaire survey of all mid-level managers	All regions	152	95	MOH	NA	Management	Obstacles	Obstacles faced by managers: lack of independent decision-making (60.7%), lack of information (53%), high staff turnover (73%), lack of career development (72%), obstacles to community participation (88%), stressful work conditions (87.6), lack of coordination (66%), lack of team spirit (32.4%), poor technology (49%), unclear accountability (29%), unclear job description (29%), variation in staff skills (56.6%).
Khoja and Al-Ansary 1998 [32]	Questionnaire survey of a random sample of directors of a random sample of primary care centres	Central	99	96	MOH	99 centers	Organization	Resources: asthma	Most centers were reasonably staffed, 25% had protocols for asthma, most (66.7%) follow asthma protocol, 38% had criteria for monitoring application of protocol. Structure below standard. One third had appointment system for asthma, most (55% urban, and 68% rural health centers) don't have health educator, no educational materials.
Al-Shammari <i>et al.</i> 1995 [33]	Questionnaire survey of a random sample of physicians	Central	515	97	MOH	NA	Organization culture	job stress	Sources of stress: job demand on family life (50%), professional isolation (40%), work environment (39%), patient complaints (41%), lack of appreciation (38%), pressure on family and social life (50%), income (30%), cultural differences (26%), patient load (50–60 patients in 8 working hours).

continued

Table 2 *continued*

Reference	Study design	Region	Sample size	Response (%)	Setting	No. orgs	Dimension	Focus	Results
Al-Khashman 2001 [34]	Questionnaire survey of a random sample of physicians	Central	107	90	MOH	20 centers	Effectiveness/ professional development	Competence	91% of physicians had favorable attitudes towards screening for hypertension. Most had little knowledge of QA standards for care and poor knowledge of screening criteria for hypertension. Only 56% would screen patients >35 years for hypertension every (3–5 years). One-third knew the current definition of hypertension, and 57% knew of complications associated with hypertension.
Kalantan <i>et al.</i> 1999 [35]	Questionnaire survey of all physicians	Central	330	91	MOH	NA	Organization culture	Job satisfaction/ attitudes	Most were satisfied with team work, and were willing to participate in continuing education (83%). Dissatisfaction with: work schedule (71%), incentives (87.9%), financial incentives (78.3%), administrative support (92%), medical facilities (56%). Many (60%) indicated inability to implement promotion and preventive care due to work load

continued

Table 2 continued

Reference	Study design	Region	Sample size	Response (%)	Setting	No. orgs	Dimension	Focus	Results
Al-Ansary and Khoja 2002 [36]	Questionnaire survey of all physicians	Central	650	86	MOH	NA	EBM	Attitudes/obstacles	30% thought primary care inferior to other specialties, and (70%) thought the public underestimated primary care doctors. Most had no post-graduate qualification. None had a family medicine certificate. Physicians had positive attitudes towards EBM. Obstacles to EBM included: overload (29%), lack of time (21.5%), limited access to references (16%) and internet (10%). Low level of awareness of journals, review publications, and databases, and limited understanding of EBM technical terminology.
Khoja <i>et al.</i> 1997 [37]	Review of all family health records in a randomly selected sample of hospitals and health centers.	Central	Nr	NA	MOH	Six centers and six hospitals	Interface with secondary care	Outcome	After establishment of a new referral system outpatient visits to hospitals were reduced by 40.6%, and referral to specialist clinics increased by 19%, visits to emergency room were reduced by 33.2%, and the number of in-patients increased by 17%.

continued

Table 2 continued

Reference	Study design	Region	Sample size	Response (%)	Setting	No. orgs	Dimension	Focus	Results
Khatab <i>et al.</i> 1999 [38]	Review of a random sample of records of all referred patients	South	864	NA	MOH	Health Authority	Interface with secondary care	Communication	Hospital feedback was given only if requested by patients or primary care doctors. Referral letters were handwritten, difficult to read, and delivered by patients. Feedback reports lacked information on advice given (100%), diagnosis (15%), and findings on investigation (21%). Hospital did not keep records on referrals.
Al-Shahri <i>et al.</i> 1998 [39]	Questionnaire Survey of a random sample of patients and physicians	East	60 physicians + 311 patients	100	MOH	Five centers	Organization culture	Cost awareness	Most physicians are unaware of pressing quality issues regarding care of hypertensive patients. For example, most do not have enough information on prevalence of hypertension, cost of drugs, or diagnostic procedures.
Jarallah <i>et al.</i> 1998 [40]	Questionnaire survey of a random sample of physicians	Four regions	441	66	MOH	NA	Professional development	Obstacles	70% of physicians have no post-graduate qualification, none are pursuing further qualification in primary care or family medicine. Reasons for inadequate post-graduate training were lack of time (60%) and work pressure (52%).
Al-Shammari and Khoja 1994 [41]	Questionnaire survey of a random sample of physicians	Central	289	92	MOH	NA	Professional development	Attitudes/obstacles	Most physicians had a positive attitude towards continuing education; 50.9% cited lack of time as an obstacle; 57% never had educational leave; 50% had access to local periodicals; 18% had post-graduate qualifications; men attended more educational sessions than women.

NA, not applicable; NR, not reported; MOH, Ministry of Health; URTI, upper respiratory tract infection.

of the premises (63.8%) [19]. More than 60% of patients indicated that primary care centers were their first choice when they were acutely ill, however; 40% were dissatisfied with opening hours, lack of access to specialist clinics, and delays in accessing care [20]. Similarly, because most primary care professionals are not Saudi, and may not speak Arabic, 40% of patients complained of language barriers [20,21].

Effectiveness

Several studies indicate that some primary care programs have been effective, including: maternal health care [22], vaccination [12], and control of endemic diseases [13]. As a result of the expanded immunization program a decline was reported in the incidence of targeted diseases, for example, the total number of cases of tuberculosis was reduced from 97 to 56 between 1984 and 1989, and measles from 502 to 84 [12]. Programs targeting endemic diseases such as schistosomiasis were also found effective, as prevalence dropped from 13% to 0.17% in the population between 1983 and 1989 [13].

In contrast, programs targeting chronic disease management were often less effective [14–18]. Several reasons were cited for this including poor professional skills reflected in misdiagnosis or mismanagement of major chronic conditions such as hypertension [17], diabetes [18], mental disorders [23], and asthma [24]. Similarly, problems were documented in diagnosis and management of common conditions such as upper respiratory tract infections [24,25].

Effectiveness of clinical decisions was reported in terms of prescribing patterns [23–27], and diagnostic and referral practices [18]. Studies reported over-prescribing due to the fact that medications are provided free of charge [24,25,27]. Most patients attending primary care centers (85%) leave with a prescription (an average of 1.44 drugs per prescription) [27]. One-third of prescriptions were for acute respiratory disease, and 87% of these contained antibiotics [25]. An audit of prescribing for asthmatic children identified other concerns such as under-prescribing of necessary preventive medications in 65% of children, use of inappropriate medications in 27% of cases, and overlooking of drug interactions [24]. Prescriptions often lacked complete information, including dosage [24], strength, and duration of treatment [23,27]. Poor diagnostic and referral practices were also observed, for example, despite a high prevalence of diabetic retinopathy, only 40–68% of diabetic patients were referred to eye clinics [18].

Few papers directly examined the quality of interpersonal aspects of care or doctor–patient interactions during the consultation. One study reported that consultations were 5 minutes on average which is considered short by international standards [26], especially bearing in mind the need for interpreters in many consultations. Interpersonal effectiveness could be assessed indirectly from studies of patient satisfaction. Dissatisfaction was often expressed in relation to poor communication and exchange of information between patient and providers including physicians, nurses, and pharmacists [19–21,28,29]. Eighty percent of primary care physicians are expatriates who may not speak Arabic, and communication is often compromised due to language barriers and differences

in culture, habits, and traditions [19,21,28,29]. In a survey of health teams, providers indicated that their ability to provide high-quality interpersonal care was jeopardized by the level of education in the community, lack of compliance, and patients' insistence on receiving medication or being referred to hospital [29]

Barriers to quality of primary care

The review of the literature identified six factors that impede the achievement of quality primary care in Saudi Arabia. These include: management factors, organizational factors, implementation of evidence-based medicine (EBM), professional development, problems at the interface with secondary care, and organizational culture.

Management factors

Little information is available on management functions at the health center level; however, two studies addressed managerial functions of mid-level regional managers and district technical supervisors. Technical supervisors are responsible for overseeing the activities of health centers and usually report to the mid-level managers. Supervisors are considered key to implementation and maintenance of the quality assurance program in primary care [30]. A survey of technical supervisors showed that the majority of supervisors (65%) had received no managerial training, and that 85% had no post-graduate qualification [30]. Most had a reasonable understanding of supervision as a process that involved developing the professional skills of personnel (97%), coordination of their activities (91%), training and education (85%), and team development (82%) [30]. However, few thought of motivation of staff (5.9%) or improving the quality of care (4.4%) as aspects of supervision [30]. Some supervisors still consider supervision as a process of inspection, focusing mainly on solving problems (79%), looking for defects (83%), and discovering mistakes (22%) [30].

A survey of mid-level managers identified several managerial obstacles preventing optimal delivery of primary health care including: lack of independent decision-making (97%), poor information (53%), unclear lines of accountability (29%), and lack of qualified supervision (28%) [31]. Managers also report problems with high staff turnover (74%), lack of career development (72%), and variation in staff knowledge and skills (57.7%) [31]. Operational obstacles included: difficulty in developing community participation (88%), stressful working conditions (87%), and lack of coordination between health-related sectors (66%) [31].

Organizational factors

The organization of primary care services has improved over recent years, as most centers are now reasonably staffed [32], 90% have records, disease registers, and follow-up systems, and 74% have clinics for chronic illnesses [14]. Studies, however, point to several organizational obstacles including poor information systems, staff turnover, stressful work conditions

[29,33], overload of physicians [34,35], poor technology [31], and shortage of resources [14,31]. One study estimated the availability of essential drugs and laboratory items as between 10 and 86% [14]. There is a particular shortage in health educators as only 8% of centres are adequately staffed for health education [14,32]. Poor coordination with other agencies was also reported, especially with municipalities for proper provision of environmental health services, including sanitation of water and food sources and proper disposal of waste [31].

Inadequate implementation of EBM

National guidelines have been established for some common conditions; however, several studies indicated that clinical decisions are not sufficiently evidence based [23,24,36]. This has contributed to wide practice variations, inadequate diagnoses and management of a range of medical conditions [24,27,34], inappropriate clinical decisions, and unsafe prescribing patterns [23,24,27,34]. Obstacles to the implementation of EBM include: poor dissemination of guidelines [34,36], and a low level of awareness among physicians of journals, review publications, and databases. Most physicians have limited access to the internet [36].

Interface with secondary care

The referral system in Saudi Arabia was established in 1986 to improve coordination between primary care centres and hospitals [37]. Evidence shows that since the implementation of the system hospital outpatient visits have been reduced by 40% [37]. Several studies examined referrals and identified important deficiencies, mainly low referral of patients for diagnostic purposes and specialized care [18], and poor exchange of information between secondary and primary care providers [37,38]. Referral letters often did not include important information [38], were handwritten, and sometimes illegible [38]. Hospitals sent feedback for only 22–39% of patients [38]. Feedback reports lacked essential information including details of the advice given (100%), diagnoses (15%), or findings on investigations (21%) [38].

Organizational culture

Studies point out several positive features of organizational culture in primary care centres including a strong spirit of teamwork, and favorable attitudes among staff towards improvement through either continuing education [35] or implementation of EBM [36]. One study, however, suggested that the status of primary care in general, and physicians' sense of job significance was poor [35]. This study found that one-third of physicians perceived primary health care to be inferior to other specialties, and two-thirds thought they are underestimated as physicians by the community [35]. Physicians were also dissatisfied with management practices, incentives, and medical facilities [35]. A study of stress among primary care physicians identified several sources of stress including the impact of job demands on family life (50%), professional isolation (40%), work environment (39%),

patient complaints, lack of appreciation by patients, patient pressure (38–50%), and patient load (50–60 patients in 8 working hours) [33]. For expatriates, additional sources of stress were reported as income (30%), contract conditions, and cultural differences (26%) [33]. Results also indicated lack of awareness among physicians of pressing primary care issues such as the high prevalence of chronic illness and cost of care [39].

Professional development strategies

Evidence indicated inadequate professional development strategies in primary care [40,41]. One study reported that only one-third of primary care physicians have post-graduate qualifications, none of which were in primary care [40]. Another found that many physicians (57%) had never had any educational leave, and that only 50% had access to local periodicals. Even fewer had access to international journals [41]. Major additional obstacles to professional development were work pressure and lack of time [40,41].

Discussion

The primary care program in Saudi Arabia is a pioneering program that has achieved considerable success within a few years of its establishment. This success is reflected in good access to and effectiveness of some traditional primary care services including immunization, maternal health, and control of endemic diseases. However, the results of this review point to substantial variations in quality of care for other aspects of care, mainly management of chronic illness. In the UK, Australia, and New Zealand, similar variations in quality of clinical care have been observed [42].

Quality of clinical care is affected by failure to adhere to evidence-based guidelines, poor prescribing practice, and inappropriate referral patterns (mainly under-referral). In Saudi Arabia, there have been several attempts to promote evidence-based practice in primary care. However, these efforts have yet to achieve their potential due in part to poor dissemination of guidelines and poor professional development strategies. In some studies, doctors reported never having had any educational leave, and most did not have access to the internet. There is an increased belief that implementation of evidence-based clinical guidelines in primary care will contribute to improvement [43]. This review identified positive attitudes among Saudi physicians towards implementation of EBM, but lack of training prevented implementation. This is similar to Australian general practitioners, who had positive attitudes towards EBM but were similarly unfamiliar with the terminology and tasks surrounding the implementation of EBM in daily practice [43].

Substantial variations were found in the quality of interpersonal care. This was strongly related to language barriers and to cultural gaps between doctors and patients. Most primary care doctors are expatriates and may not speak Arabic, the language of the majority of their patients. In addition, doctors found it difficult to relate to some patients because of low

levels of education in the community. They also found that the demands of patients were sometimes poorly aligned with what they wanted to provide. Short consultations exacerbated these difficulties.

The papers reported in this study identified a lack of effective leadership in primary care, an essential element of quality improvement. Primary care managers had limited roles, limited training, and unclear expectations, factors that have previously been found to be obstacles to quality improvement. In the UK, limited managerial roles, unclear expectations and responsibilities of managers within the organizations have also been found to be obstacles to quality improvement [44].

Isolation of primary care workers and their inability to maintain knowledge and skills is a major concern. Professional development is an integral part of quality improvement. Improving physicians' access to medical information, to evidence-based guidelines, and to planned professional development are essential prerequisites for quality improvement.

The morale and motivation of staff could also be improved by focusing on working hours, patient load, and salaries, and by improving resources and facilities. The employment conditions of expatriate physicians and their contribution to quality improvement need to be examined. Contract conditions should provide a sense of job security, and the motivation and empowerment necessary to improve performance.

Quality improvement can be driven both internally through organized effort within the health care system, and externally through public pressure. Neither internal nor external forces are well formulated in Saudi Arabia. The community has yet to play any significant role in shaping the vision of primary care provision and steering it to meet changing health needs.

This study has a number of limitations. Most of the studies included were conducted in a Ministry of Health setting, which is the main provider of primary care. However, little is known of primary care provided elsewhere, such as in military or school settings, or in the private sector. The studies reported in the paper also showed wide variation in the methods used and aspects of care studied. This limited the options for pooling evidence.

Despite these limitations, the conclusion of this review is that primary care in Saudi Arabia faces significant challenges, and the findings of this study have significant implications for the primary health care agenda in Saudi Arabia. Many of the problems identified in this review could be addressed by establishing a comprehensive quality assessment and improvement system in primary health care. Quality improvements should be an integral part of all aspects of primary care, but existing quality improvement strategies are fragmented and uncoordinated. Saudi primary care will be unable to fulfill its potential unless the challenges identified here are addressed. Future research is needed to make more objective evaluation of the quality of clinical services, and to identify interventions that are effective in improving care.

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