Review

Quality of care in primary health care settings in the Eastern Mediterranean region: a systematic review of the literature

SHADI SALEH1, MOHAMAD ALAMEDDINE1,*, YARA MOURAD1, and NABIL NATAFGI2

1Department of Health Management and Policy, Faculty of Health Sciences, American University of Beirut, Beirut, Lebanon, and 2Department of Health Management and Policy, College of Public Health, University of Iowa, Iowa, USA

*Address reprint requests to: Mohamad Alameddine, Department of Health Management and Policy, Faculty of Health Sciences, American University of Beirut, Beirut, Lebanon. Tel: +961-1-350000; Fax: +961-1-744470; E-mail: ma164@aub.edu.lb

Accepted 26 November 2014

Abstract

Purpose: This systematic review aims at offering a comprehensive synthesis of studies addressing quality of care in the primary healthcare (PHC) sector of the Eastern Mediterranean Region (EMR).

Data sources: A systematic search was conducted using Medline, Embase and Global Health Library (IMEMR) electronic databases to identify studies related to quality in PHC between years 2000 and 2012.

Study selection/data extraction: One hundred and fifty-nine (159) studies fulfilled the eligibility criteria. Each paper was independently reviewed by two reviewers, and the following information was extracted/calculated: dimension of care investigated (structure, processes and outcomes), focus, disease groups, study design, sample size, unit of analysis, response rate, country, setting (public or private) and level of rigor (LOR) score.

Results of data synthesis: Most of the studies were descriptive/cross-sectional in nature with a relatively modest LOR score. Assessment of quality of care revealed that the process dimension of quality, specifically clinical practice and patient–provider relationship, is an area of major concern. However, interventions targeting enhanced quality in PHC in the EMR countries had favorable and effective outcomes in terms of clinical practice.

Conclusion: These findings highlight gaps in evidence on quality in PHC in the EMR; such evidence is key for decision-making. Researchers and policy-makers should address these gaps to generate contextualized information and knowledge that ensures relevance and targeted high-impact interventions.

Key words: quality of care, quality indicators, performance measurement, primary healthcare, Eastern Mediterranean Region, systematic review

Introduction

The Alma-Ata Declaration (1978) envisioned primary healthcare (PHC) as the linchpin of effective health systems with the ultimate goal of providing integrated and equitable patient and community-focused care for all [1, 2]. Recognizing the potential role of PHC in healthcare systems, countries embarked on the development of this sector as an essential component for social and economic growth of communities [3]. Moreover, much attention has been directed toward optimizing the quality of service delivery within this sector of healthcare [4–7].
Understandably, the early stages of strengthening the PHC sector in many low- and middle-income countries (LMICs), including countries in the Eastern Mediterranean Region (EMR), were focused on infrastructural elements. A component of PHC that has received delayed attention in such countries is quality of care [8]. However, recently this component has occupied the center stage of the attention of many policy-makers and health professionals. The increased attention is largely affected by a shifting burden of disease paradigm and a higher demand for ‘good’ care. Most EMR countries are witnessing a significant surge in non-communicable diseases that dictates active care coordination, best delivered in a PHC setting [9]. In parallel, health-care stakeholders are increasingly recognizing the fact that satisfaction with and performance of care delivery systems go beyond its availability and accessibility to strengthening the quality of care. The interest in quality of care is being translated into initiatives undertaken in different countries in the region and at various levels—institutional to national [10–17]. While success stories have been documented in certain EMR countries, there is a lack of comprehensive understanding of the quality paradigm of PHC provided across healthcare systems in the EMR [8]. Such an understanding is necessary given the wide belief that the potential for improvement is significant.

**Purpose**

This paper (i) offers a comprehensive review of published research evidence on the structure, processes or outcome dimensions of quality of care within PHC settings, (ii) evaluates the quality of evidence and identifies the knowledge gaps in investigating quality of care and (iii) presents PHC stakeholders, researchers and funding agencies with knowledge that focuses attention on priority areas for future investigation and highlights evidence-based interventions targeted at improving quality of care within the PHC sector of EMR countries. There is a dearth of information on quality of care in PHC settings in this region, as the concept of quality is relatively new especially in the context of PHC. Additionally, the health systems in a considerable number of these countries, especially those that witnessed uprisings, are undergoing transitions. Hence, a more focused description on contextualized evidence would potentially serve in the shaping of the emerging health systems.

**Methods**

**Data sources**

A systematic search was conducted using Medline, Embase and Global Health Library (iMEMR) electronic databases to identify studies related to quality in PHC in EMR countries. For the purpose of this study, EMR is defined based on the World Health Organization classification consisting of 23 countries in the Middle East and North Africa including Afghanistan, Bahrain, Djibouti, Egypt, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Palestine, Qatar, Saudi Arabia, Somalia, South Sudan, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates and Yemen. The initial search utilized medical subject headings (MeSH) terms or keyword searches of the following quality of care derivatives: quality, quality of healthcare, quality of care, total quality management, clinical performance assessment, clinical competence, guideline adherence, performance measurement, outcome assessment/measurement, process assessment/measurement, quality assurance, quality improvement and quality indicators. The aforementioned terms were combined with the terms Middle East, North Africa and each of the 23 countries in the EMR region. Whenever countries were not included in the ‘Middle East’ and ‘North Africa’ in the MeSH terms of the electronic databases, the respective missing countries were added to the search criteria. These searches produced a total of 926 publications on quality between the years 2000 and 2012 (Fig. 1).

**Study selection**

Two investigators independently assessed the potential eligibility of all studies identified from the electronic searches. Duplicates and articles before the year 2000 were excluded. During the step of title review, articles were excluded if the title did not reflect an attempt to assess/evaluate or report on quality of care and services provided in a PHC setting. Furthermore, non-English-language articles as well as articles with no abstract were also excluded. Accordingly, a total of 307 articles then underwent the abstract review. For the purpose of this systematic review, studies were included if they attempted to measure any of the quality dimensions (structural [resource availability], technical processes [clinical practice, access and continuity of care, patient–provider relationship] and outcomes of care [provider satisfaction, patient safety and medical errors, health status]) incorporated in PHC services. Descriptive, intervention and observational studies, reviews, audits of clinical records, analysis of official reports, and surveys of opinions and attitudes of patients and providers were included only if they were published in peer-reviewed journals. Articles presenting individual personal assessments or reflections, or those which were principally educational (e.g. describing clinical procedures) were excluded from the review.

**Data extraction**

Each paper was reviewed, and information on the following characteristics was extracted:

- Study design (descriptive studies, intervention studies, observational studies, etc.).
- Dimension of care—classification based on Donabedian’s model (structure, process and outcome). ‘Structure’ represents the features of the settings in which the care is provided, including material resources, human resources and organizational structure. ‘Process’ refers to interactions between users and the healthcare structure through activities related to provision of care. ‘Outcome’ indicates the effects or consequences of care on health status. The Donabedian system-based framework has been used as a basis for defining quality. The structure affects processes and outcomes, and the outcomes reflect the combined effects of structure and processes [18].
- Study focus—findings were organized into coherent themes using a narrative review approach. Studies were then classified into eight main areas of focus that reflect the themes that emerged: clinical practice, access and continuity of care, resource availability, patient–provider relationship, quality indicators, patient satisfaction, provider satisfaction and patient safety/medical errors.
- Disease groups—classification based on the disease group (e.g. diabetes), if any, investigated when assessing quality of care.
- Unit of analysis—classification based on whether the unit of analysis is individuals/providers/provider groups or PHC centers.
- Response rate.
- Study location (country/city).
- Ownership setting—classification based on whether study was conducted in a uniform setting (public or private).
Level of rigor (LOR) score—all articles included in the review underwent critical analysis and rating of the level of methodologic-rigorous. For this assessment, a scale was adapted from similar systematic reviews [19–21]; in which points were assigned for study parameters indicative of good quality based on four criteria: originality, methods (well-defined methodology and clear
The PHC ownership type was accounted for 30.2% of the designs utilized in the reviewed articles. Among those, 58.9% involved the public healthcare sector, whereas 41.1% were based in regions other than Saudi Arabia. Countries that were conducted in the region were based in Saudi Arabia (29.6%), followed by Bahrain (13.2%) and Kuwait (10.7%).

The two investigators independently assessed the above-mentioned components (including the LOR score) for each article. The assessments were then compared, and cases of disagreements were further discussed until consensus was reached. Articles selected to be included in the study received an LOR score between 2 and 5.

Results of data synthesis

One hundred and fifty-nine studies fulfilled the eligibility criteria. Data collated on the nine aforementioned characteristics are presented in Table 2.

General characteristics of reviewed studies

The majority of the articles (66.1%) assessed the quality of care provided at PHC centers using a single dimension of the Donabedian model, with the highest proportion of articles (42.8%) examining the process dimension (Table 2). Out of the eight identified areas of focus, ‘clinical practice’ was identified in more than half of the reviewed articles, with the remaining articles dispersed among the other seven areas of focus. Only a quarter of the articles (41 of the 159 articles compiled) utilized disease groups to examine the quality of care provided by PHC centers (Table 3). Among those, 73.2% dealt with diabetes and 7.3% with hypertension.

The review revealed that the highest percentage of identified studies that were conducted in the region were based in Saudi Arabia (29.6%), followed by Bahrain (13.2%) and Kuwait (10.7%). Countries contributing each to 5–10% of the total number of studies included Iran, Jordan, Egypt and Oman. The most prevalent study design identified by the review was the cross-sectional design (64.2%). Cohort studies, both prospective and retrospective, accounted for 30.2% of the designs utilized in the reviewed articles. The PHC ownership type was identifiable in 107 of the 159 articles. Among those, 58.9% involved the public healthcare sector, whereas only 10.3% targeted the private sector.

Main findings of reviewed studies

This section highlights the main findings from the reviewed studies based on the eight dimensions outlined earlier. Furthermore, it classifies the studies based on categories of findings.

Resource availability

Several of the articles reviewed examined the role of resource availability. For example, studies conducted in Saudi Arabia reported varying levels of availability of essential resources, drugs and laboratory assessments for diabetic care [26], and for hypertension care in Aseer region [27], as well some essential equipment and drugs for emergency health services [29]. Additionally, one survey in Egypt reported that resource availability in PHC and hospital laboratories were generally satisfactory, yet recommendations for the redistribution of some equipment and material between hospital laboratories were suggested [30]. This review further identified a study investigating the adequacy of structural resources for maternal/child health services at PHC centers without presenting conclusive evaluations on adequacy of resource availability [31]. Notably, only one study revolving around Primary Eye Care in Oman indicated the adequate availability of resources [25].

Patient–provider relationship/patient satisfaction

The evaluation of patient satisfaction was another investigated outcome of care in reviewed studies (13.8% of the studies). Mostly, patients’ dissatisfaction pertained to factors related to their experience with providers of care. Several studies examined the patient–provider relationship. All studies reviewed indicated patient dissatisfaction with the process of patient–provider interaction. Gaps in patient–provider relationships were identified to be related to ‘unfriendly providers’ or ‘poor information exchange’.

Other studies unearthed dissatisfaction with non-clinical and administrative service components of care. For example, one study in Bahrain highlighted dissatisfaction with receptionists’ poor communication skills, long waiting time, short consultation time and poor physician examination/explanation [42]. In some studies, satisfaction levels toward a certain service varied based on the variance in gender, age and educational level. Few other studies were inconclusive in examining patient satisfaction levels [57–59].

Provider satisfaction

Only three identified studies handled provider satisfaction, and in all reviewed articles, dissatisfaction was inferred. Two articles tackled identified ‘practice pressure’ as the factor behind dissatisfaction [60, 61]. Practice pressure included time pressure, patient overload and inadequate support. The third study discussed the unrecognized professional identity that midwives face at work [62].

Adequacy and reporting of quality indicators

The reviewed studies assessing quality of care at PHC centers based on quality indicators revealed varying results. Almost equal proportions

<table>
<thead>
<tr>
<th>Table 1 LOR scorea</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criterion 1:</strong> Originality (1 point)</td>
<td></td>
</tr>
<tr>
<td>Original study (cross-sectional, longitudinal or clinical trial) with a clear objective</td>
<td></td>
</tr>
<tr>
<td><strong>Criterion 2:</strong> Methods (2 points)</td>
<td></td>
</tr>
<tr>
<td>a. Well-defined and reliable methodology that includes control group or good variability of the independent variable in a regression model</td>
<td></td>
</tr>
<tr>
<td>b. Characteristics (including sample size and response rate) of participants are clearly described, including those of non-respondents, and do not lead to bias</td>
<td></td>
</tr>
<tr>
<td><strong>Criterion 3:</strong> Outcome (1 point)</td>
<td></td>
</tr>
<tr>
<td>Quality dimension of interest was assessed with a validated scale</td>
<td></td>
</tr>
<tr>
<td><strong>Criterion 4:</strong> Limitations (1 point)</td>
<td></td>
</tr>
<tr>
<td>Study limitations were comprehensively discussed</td>
<td></td>
</tr>
</tbody>
</table>

aAdapted from references [22–24].
displayed favorable or unfavorable results, and the majority indicated inconclusive results regarding quality in PHC settings.

In Oman, a study performing two audits in 2007 and 2008 to examine the documentation of medical care provided to hypertensive patients and evaluate the management of hypertension in a PHC center reported significant improvement in documentation of hypertension-related symptoms in the second audit [69]. Similarly, a study in Jordan assessing PHC provision for Bedouin women and children revealed that more than half of the indicators for measuring the quality of the physical conditions were adequate in four comprehensive health centers [67].

Clinical practice
More than half of the articles (54.1%) assessed the clinical practice employed at PHC centers. Two aspects of reviewed studies were employed to assess clinical practice: the effectiveness of interventions aiming for improvement in PHC clinical services and the assessment of present clinical processes. Interventions under the former theme included educational programs, such as training physicians about prescribing, reforming and enhancing diabetes care programs, and implementing practical approaches to promoting respiratory health. Most of these interventions were deemed effective in improving clinical practice. Unfavorable assessments of current clinical guidelines have been reported in the majority of the studies (Table 3).

Access and continuity of care
Access and continuity of care were additional outcomes of importance assessed in the reviewed studies. While some articles were based on referrals as a measure for healthcare quality, others concentrated on access to healthcare centers. According to the studies listed in the former category, a generally low rate of referrals is reported and the majority of referrals implicated unfavorable care quality [165–169]. The single study classified as having favorable outcomes was one conducted in Syria concluding that after training general practitioners in 75 health centers, clinically indicated referrals of patients increased [162]. The studies that were classified as inconclusive either indicated variety in referral patterns across practice settings [163] or studied the impact of pattern of referrals on cost and quality of healthcare delivery [164].

Four studies focused on access of care and varied in their conclusions. Two indicated unfavorable outcomes [172, 173]. One study conducted in Afghanistan which identified factors associated with service quality provided by agencies implementing a basic package of health services was classified as having favorable outcomes [170].

Patient safety and medical errors
In assessing patient safety, three identified studies investigated the patient safety culture and practices; two articles highlighted favorable overall patient safety standards [180, 181], whereas the third investigated factors associated with adverse safety outcomes [182]. The remaining articles tackled prescription errors and computerization/system errors. Most of those studies identified prescription errors as a factor obstructing quality in PHC services. For example, a review study conducted on physicians in PHC in Riyadh city, Saudi Arabia, revealed that medication errors were frequent in PHC, as well as under-reported [179]. The only study classified as investigating medical errors in relation to newly implemented electronic medical records was conducted at the PHC centers in Kuwait. The study revealed that 48% of the receptionists seldom reported occurrence of system error [174].

Discussion and conclusion
The recent focus on enhancing quality of care in many EMR countries should be informed by contextualized evidence. This paper attempted to provide an overview of such evidence through a comprehensive

---

Table 2 Characteristics of the reviewed studies

<table>
<thead>
<tr>
<th>Characteristica</th>
<th>Number [N]</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension of care (Total 159)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process (P)</td>
<td>68</td>
<td>42.8</td>
</tr>
<tr>
<td>Outcome (O)</td>
<td>21</td>
<td>13.2</td>
</tr>
<tr>
<td>Structure (S)</td>
<td>16</td>
<td>10.1</td>
</tr>
<tr>
<td>Multidimensional</td>
<td>54</td>
<td>33.9</td>
</tr>
<tr>
<td>Focus (Total 159)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical practice</td>
<td>86</td>
<td>54.1</td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>22</td>
<td>13.8</td>
</tr>
<tr>
<td>Quality indicators</td>
<td>14</td>
<td>8.8</td>
</tr>
<tr>
<td>Access and continuity of care</td>
<td>12</td>
<td>7.5</td>
</tr>
<tr>
<td>Patient–provider relationship</td>
<td>6</td>
<td>3.8</td>
</tr>
<tr>
<td>Resource availability</td>
<td>7</td>
<td>4.4</td>
</tr>
<tr>
<td>Patient safety/medical errors</td>
<td>9</td>
<td>5.7</td>
</tr>
<tr>
<td>Provider satisfaction</td>
<td>3</td>
<td>1.9</td>
</tr>
<tr>
<td>Disease groupsb (Total 41)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>30</td>
<td>73.2</td>
</tr>
<tr>
<td>Hypertension</td>
<td>3</td>
<td>7.3</td>
</tr>
<tr>
<td>Others</td>
<td>8</td>
<td>19.5</td>
</tr>
<tr>
<td>Sample sizeb (Total 152)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individuals (Total 147)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;100</td>
<td>23</td>
<td>15.6</td>
</tr>
<tr>
<td>100–150</td>
<td>20</td>
<td>13.6</td>
</tr>
<tr>
<td>151–500</td>
<td>48</td>
<td>32.7</td>
</tr>
<tr>
<td>500–1000</td>
<td>22</td>
<td>15.0</td>
</tr>
<tr>
<td>&gt;1000</td>
<td>34</td>
<td>23.1</td>
</tr>
<tr>
<td>Centers (Total 5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;100</td>
<td>5</td>
<td>100.0</td>
</tr>
<tr>
<td>&gt;100</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Response rateb (Total 58)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;80</td>
<td>15</td>
<td>25.9</td>
</tr>
<tr>
<td>80–90</td>
<td>16</td>
<td>27.6</td>
</tr>
<tr>
<td>&gt;90</td>
<td>27</td>
<td>46.5</td>
</tr>
<tr>
<td>Country (Total 159)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>47</td>
<td>29.6</td>
</tr>
<tr>
<td>Bahrain</td>
<td>21</td>
<td>13.2</td>
</tr>
<tr>
<td>Kuwait</td>
<td>17</td>
<td>10.7</td>
</tr>
<tr>
<td>Iran</td>
<td>12</td>
<td>7.5</td>
</tr>
<tr>
<td>Jordan</td>
<td>10</td>
<td>6.3</td>
</tr>
<tr>
<td>Egypt</td>
<td>9</td>
<td>5.7</td>
</tr>
<tr>
<td>Oman</td>
<td>8</td>
<td>5.0</td>
</tr>
<tr>
<td>Other countries</td>
<td>35</td>
<td>22.0</td>
</tr>
<tr>
<td>Settingb (Total 107)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public</td>
<td>63</td>
<td>58.9</td>
</tr>
<tr>
<td>Private</td>
<td>11</td>
<td>10.3</td>
</tr>
<tr>
<td>Mix</td>
<td>33</td>
<td>30.8</td>
</tr>
<tr>
<td>LOR score (Total 159)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>18.9</td>
</tr>
<tr>
<td>3</td>
<td>67</td>
<td>42.1</td>
</tr>
<tr>
<td>4</td>
<td>46</td>
<td>28.9</td>
</tr>
<tr>
<td>5</td>
<td>16</td>
<td>10.1</td>
</tr>
</tbody>
</table>

aThe total number for each of the characteristics was 159 unless otherwise indicated.
bWhen the study did not identify the corresponding characteristic, it was excluded from the calculation of the percentages.
Table 3 Summary of the outcomes of reviewed articles according to the area of focus

<table>
<thead>
<tr>
<th>Focus</th>
<th>Available</th>
<th>Varied*</th>
<th>Inconclusive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource availability</td>
<td>[25]</td>
<td>[26–30]</td>
<td>[31] Favorable</td>
</tr>
<tr>
<td>Patient–provider relationship</td>
<td>[32]</td>
<td>[33–37]</td>
<td>Satisfied</td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>[38, 39]</td>
<td>[40–44]</td>
<td>[37–59]</td>
</tr>
<tr>
<td>Provider satisfaction</td>
<td>[60, 61]</td>
<td>Favorable</td>
<td>Inconclusive</td>
</tr>
<tr>
<td>Quality indicators</td>
<td>[63–66]</td>
<td>[67–69]</td>
<td>[70–76]</td>
</tr>
<tr>
<td>Clinical practice</td>
<td>[77–90]</td>
<td>[91–94]</td>
<td>Inconclusive</td>
</tr>
<tr>
<td>Access and continuity of care</td>
<td>[162]</td>
<td>[163, 164]</td>
<td>Unfavorable</td>
</tr>
<tr>
<td>Patient safety/medical errors</td>
<td>[174]</td>
<td>[175–179]</td>
<td>[180–182]</td>
</tr>
</tbody>
</table>

*Mixed outcome depending on service provided, type of resources or patient group.

The review of the literature on quality of care in the PHC sector in EMR countries.

The review of studies examining the quality of care at the PHC sector in the EMR region revealed a less-than-optimal research output as evidenced by the low number of articles retrieved taking into consideration the long time frame (12 years) and the large geographic region. The review further reveals a concentration of research output in Gulf countries. Most of the studies were descriptive/cross-sectional with a relatively modest LOR score. These factors are divided into those affecting satisfaction with the interaction with care providers and satisfaction with the non-clinical/administrative service components of care. Correlates with high patient satisfaction and high referral system include sufficient time spent explaining treatments, reassurance and support, and involvement of patients in decision-making [185–187]. The fact that only 2% of reviewed articles examined provider satisfaction as a focus when examining quality of care raises serious questions on the appropriate understanding of the pivotal role that providers’ satisfaction plays in enhancing the quality of patient care. Quality of care is only manifested through satisfied providers that are working in a supportive environment [188–191].

A number of shortcomings in this study are worth mentioning. First, despite every effort to enhance the comprehensiveness of the review, it cannot be ascertained that the review did not miss some of the regional studies written in local languages or not listed on the search engines used. In addition, it is not uncommon in the region to find supporting evidence in white papers, reports and policy documents with varying degree of validity and reliability. The fact that the Gulf Cooperative Council countries rank high on economic indicators and could afford to invest in research activities/publications could have skewed the level of research production. It is recommended that resource-rich countries extend research support to other countries in the region or lead joint/comparative research programs in order to ensure equitable and sustainable development across the region.

In conclusion, EMR countries are urged to promote evidence-based decisions through the dedication of targeted funds aiming at carrying out situational assessments, examining interventions and evaluating the outcomes of services and programs at the PHC sector.

Acknowledgments

The study authors acknowledge the valuable contributions of Ms. Karen Kazandjian, Ms. Saria El Khazen and Ms. Angie Farah to the literature search and editing of the tables and figures.
References


