

Quality of Angiography Services as Perceived by the Cardiovascular Diseases Patient

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Abstract

Background and Objectives: Angiography remains as the gold standard for the diagnosis of cardiovascular diseases (CVDs). The aim of this study was to assess the quality of angiography services in Shahid Madani Hospital, Tabriz, Iran.

Methods: A moderate overall score of 7.00 was given to the angiography services quality. While continuity, communication and autonomy gained high scores, choice of provider, prompt attention, and quality of basic amenities, and confidentiality scored moderately, and support groups, dignity, safety, and prevention received low scores.

Findings: A moderate overall score of 7.00 was given to the angiography services quality. While continuity, communication and autonomy gained high scores, choice of provider, prompt attention, and quality of basic amenities, and confidentiality scored moderately, and support groups, dignity, safety, and prevention received low scores.

Conclusions: The moderate assessment of angiography services quality showed that there is a considerable room for improving these services. To this end, prevention and safety should receive the first priority in services quality improvement plans. Possible useful strategies in this regards include briefing the patients about the adverse effects of the drugs, trading them training on control and prevention of CVDs, and empowering them for self-care..

Keywords: Healthcare services, Angiography, Patient, Hospital, Quality assessment

Background and Objectives

Cardiovascular diseases (CVDs) are the most prevalent and preventable diseases, and play an important role in morbidity and mortality [1]. It is estimated that each year 57,218 deaths are attributable to Heart Failure (HF) in US, 16 million people are affected by Coronary Artery Disease (CAD), and costs of these diseases were estimated to be about US\$156 billion in 2008 [2]. In Iran, CVDs are the most common cause of death, and has terrible

physical, psychological and financial effects on both the patients and the society. According to the report of Ministry Of Health (MOH), every day 369 people died in Iran as a result of CVDs in 2003 [3]. Although delivery of health care for patients living with heart disease has been improved, these diseases continue to be a major medical and social problem all over the world [4].

Also there is a large gap between ideal and actual care provided in hospitals [5]. To identify and bridge the gap between routine care and the evidence-based one, the best action needed is to measure the quality of care performance and then feedback the results [6-8]. Quality of care is a key factor for excellence of services and a sustainable competitive advantage [9, 10]. Quality of health

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care can be seen as having three main dimensions, service quality (SQ), technical quality (TQ) and customer quality (CQ) [11]. SQ concerns with non-health aspect and experience of the patient with the quality of care, for instance, relationship between patient and doctor, and between nursery and support services. SQ has important influence on customer loyalty, attracting new customers, retaining current customers, patient satisfaction and more income [12]. An extensive literature review showed that many studies have been conducted on measuring the service quality of care in various diseases and health care organizations [13, 14]. But to the best of our knowledge, no study has so far been performed on angiography care. Regarding the importance of providing a high level of service quality for people with heart diseases, especially in angiography setting, and lack of research in this area in Iran and around the world, measurement of service quality seems necessary. Therefore, this study was conducted with the aim of assessing the SQ of delivered care from the prospective of patients who have received angiography service in Shahid Madani Hospital, Tabriz-Iran.

Methods

A cross-sectional study was conducted in Tabriz, Iran in 2012. Participants were selected from among the patients to be hospitalized for angiography in Shahid Madani Hospital (Tabriz), the biggest single specialty heart hospital in the north Iran. Everyone with 25 years old or more, who was hospitalized at least one day (24 hours) after angiography, was eligible to include in the study. Two hundred and three angiography patients were sampled using convenience sampling method.

A valid and reliable questionnaire was used for data collection which was designed by Tabrizi and colleagues in Queensland-Australia for people with diabetes [15]. We used the Persian version of the questionnaire provided by Tabrizi. The questionnaire includes 10 questions about demographic features, 2 questions on the choice of service provider, and 42 questions about the 12 dimensions of SQ (communication, autonomy, continuity, support groups, quality of basic amenities, dignity, timeliness/prompt attention, safety, prevention/early detection, accessibility and confidentiality).

Each dimension of SQ was evaluated based on the importance of question and quality of care re-

ceived in relation to that question (performance) by the participants

To calculate the SQ importance score, a four-point Likert scale was used, which then was scaled from 0 to 10 (as 0= not important, 3 = somewhat important, 6 = important, and 10 = very important). A four-point Likert-type scale (including 1 = never or poor, 2 = sometimes or fair, 3 = usually or good, and 4= always or excellent) was used to calculate the performance score.

Total score or impact of each dimension of SQ was calculated using the Netherlands Institute for Health Services Research methodology [2].

Total SQ score = 10 – (importance × performance).

Total SQ score then ranges from 0 = the worse/lowest quality of care to 10 = the best/highest quality.

For completing the questionnaires, the patients were interviewed by two trained interviewers.

Statistical analysis was carried out using SPSS 19 (Statistical Package for Social Sciences). Descriptive statistics and statistical tests (Chi-square, T-test and one-way ANOVA) were used for data analysis. Statistical tests were performed with 0.05% significance level ($p < 0.05$).

This study was approved by the Ethics Committee of Tabriz University of Medical Sciences; the participants were autonomous for participation, and informed consent was obtained from all participants. Also confidentiality was secured to the study processes.

Results

Of 203 participants, 66% were male. Their mean (SD) of age was 55.81 ± 10.32 years, and over half were in the 40-59 years age group.

Most of the participants (56%) compiled elementary level of education.

As Table 2 shows, scores of the 12 dimensions of SQ communication, quality of basic amenities, dignity, timeliness/prompt attention, safety, prevention/early detection, and accessibility obtained the highest importance score from the perspective of the participants (>9). Regarding the performance score, support group, safety, prevention/early detection, and accessibility gained the lowest scores (<4). Based on the performance and importance scores, safety, prevention/early detection, and accessibility dimensions achieved the lowest SQ score (< 6).

Table 3 contains the results of analysis done on the examined variables and 12 dimensions of SQ.

As shown in Table 3, prevention/early detection

and accessibility have statistically significant relation with age, education and employment status.

Discussion

In recent years, more attention have been paid to service quality, particularly in health care [11, 16]; so many studies have been done on assessing the quality of hospitals' services and its relationship with some variables, as well as the quality of care provided to different patients and type of disease [14].

This study aimed to assess the quality of angiography services provided to people with coronary heart disease, and found communication, quality of basic amenities, dignity, timeliness/prompt attention, safety, prevention/early detection, and accessibility as the most important dimensions from the perspective of the participants. On the other hand, support group, safety, prevention/early detection, and accessibility received the lowest score on performance, and communication, autonomy and continuity had the highest SQ score.

Most studies on service quality used SERVQUAL instrument [17, 18] which includes 44 questions; 22 questions to be answered before receiving the service, and the retest after that based on five dimensions: responsiveness, empathy, assurance, tangibles and reliability [19, 20]. The questionnaire used in this study included 42 questions in 12 dimensions of SQ. The results showed that the study questionnaire could be used as a valid and reliable tool to measure SQ.

In a similar study conducted in Australia on Type 2 diabetes using this tool by Tabrizi and colleagues, different results were obtained [15]. In Australian study, the SQ score for autonomy, support group, quality of basic amenities, dignity, timeliness/prompt attention, safety, prevention/early detection, accessibility, and confidentiality was greater than that in the present study. This indicates that there is a need to improve the quality of the above mention dimensions. Among them, safety and prevention/early detection for having lowest quality score are in priority. In this study, unlike the above mentioned one, there was no significant relationship between demographic variables with SQ score.

In a study on people with open heart surgery in the Unified Health System-SUS, in Brazil, there was a big gap between expectations and provided services in safety dimension [21], which is consis-

Table 1 Characteristics of the study participants

variable	N	%
Sex (n = 203)		
Male	134	66
Female	69	34
Age (n = 203)		
25-39	16	7.9
40-59	108	53.2
>60	79	38.9
Education (n = 203)		
Elementary	113	55.7
Guidance	22	10.8
High school	31	15.3
University	37	18.2
Residential area (n = 203)		
City	160	78.81
Village	43	21.19
Employment status (n = 203)		
Yes	112	55.2
No	91	44.8
BMI* (kg/m ²) (n = 203)		
Normal weight (<25)	64	31.4
Over weight (25-30)	95	46.6
Obese (>30)	44	21.7

*Body Mass Index

tent with the results of the present study. Thus, regarding the importance of safety in the provision of services, special attention should be paid to safety aspect through health care delivery.

The study findings showed that most of the par-

Table 2 Service quality dimensions, performance, importance and service quality score for angiography patients

Service quality dimensions	Importance score ^a	Performance score ^b	Service Quality score ^c
Choice of care provider	7.31	0.32	7.66
Communication	9.18	0.17	8.43
Autonomy	8.26	0.23	8.10
Continuity	7.91	0.06	9.52
Support groups	7.74	0.49	6.20
Quality of basic amenities	9.78	0.23	7.75
Dignity	9.19	0.34	6.87
Timeliness/prompt attention	9.36	0.23	7.84
Safety	9.42	0.53	5.07
Prevention/early detection	9.51	0.64	3.91
Accessibility	9.06	0.51	5.37
Confidentiality	7.62	0.35	7.33
Total service quality	7.89	0.34	7.00

^a Ranges from 0 (not important) to 10 (very important)

^b 0 (good) to 1 (poor)

^c 0 (worst) to 10 (best)

Table 3 Service Quality score based on demographic characteristics

Service quality dimension	Age	Gender	Education	Employment status	Residents area
Choice of care provider	0.8	0.08	0.8	0.8	0.1
Communication	0.2	0.1	0.6	0.4	0.1
Autonomy	0.6	0.4	0.01*	0.4	0.5
Continuity	0.3	0.5	0.3	0.7	0.05*
Support group	0.7	0.5	0.7	0.7	0.8
Quality of basic amenities	0.04*	0.8	0.04*	0.6	0.06
Dignity	0.2	0.9	0.06	0.2	0.7
Timeliness/prompt attention	0.4	0.8	0.4	0.4	0.8
Safety	0.5	0.03*	0.5	0.5	0.04*
Prevention/early detection	0.02*	0.4	0.02*	0.02*	0.08
Accessibility	0.04*	0.6	0.004*	0.004*	0.01*
Confidentiality	-	0.09	-	-	0.09
Total service quality	0.9	0.7	0.7	0.6	0.8

* P < 0.5

ticipants were fairly satisfied with the quality of services on selection of provider. Score of this dimension was almost over what Tabrizi and colleagues (2008) found in Australia [15]. This is also a higher score than that obtained in seven European countries, which found a relationship between lower knowledge and satisfaction [22].

In this study, the prevention/early detection dimension had the lowest performance and quality score. Similarly, Kong and colleagues [23] and Craft [24] found greatest dissatisfaction of patients on receiving inadequate information and training from providers. Regarding the importance of prevention of heart disease [25] and empowering patients to self-care [26], it is suggested to have programs such as education while providing service, like educational bordures, sheets, videos, CDs, etc. Considering the fact that most of the patients had low level of education, it is obvious that the educational materials should be suitable for them.

Another dimension that achieved relatively low quality score in this study was the support groups, which in most studies is not satisfactory; while the importance of this dimension has been pointed out [26]. Since the Iranian culture facilitates this support groups, it is suggested that organizing and implementing supports group could be main adjusted health care teams not only for people with CVDs, but also for every disease, particularly for chronic diseases.

Despite the high importance of the accessibility dimension from the patients' view, it had poor performance and low quality score. A study performed

by Zarei and colleagues [27] to assess the quality of services showed that there is a huge gap between the participants' expectations on access to services and received services. Therefore, health care organizations should provide geographical, financial and cultural access to health facilities and services for all customers.

As mentioned above, to the best our knowledge, very few studies have been done on the quality of services provided for people with CVDs so that review of evidence to find related evidence could not find any study about angiography, so this restricted us compared to the quality studies in deferent areas and dimensions. It is recommended that similar studies with larger sample size be done by the health researchers for CVDs.

Conclusions

As the quality of life in people with CVDs is reported low in Iran [28], high quality services should be provided to them in hospitals and other health care facilities to improve of quality of delivery care. Also the results of this study showed that in general, the angiography services provided to people with CVDs are not good enough (7 of 10).

Among the 12 dimensions examined in this study, prevention and safety of services achieved the lowest quality, and could be a priority for future interventions. In this regards, such studies to identify weaknesses and to set priorities are valuable, provided that the results are utilized to improve-

ment planning, then the added value gets multifold. Thus, actions on explanation of drug prescription and their effects, patient training to control and prevent CVDs, and empowering people for self-care can be suitable solutions.

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Competing Interests

The authors declare no competing interests.

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