Original Article

Evaluation of responsiveness to non-clinical demands of patients in Iran: a quantitative study on the university hospitals in Bushehr

Mahboobeh-Sadat Modarresi[1], Habib Omranikhoo[2], Mozhgan Modarresi[3], Niloofar Motamed[4*]

[1] Bushehr University of Medical Sciences, Bushehr, Iran

[2] Faculty of Public Health, Bushehr University of Medical Sciences, Bushehr, Iran

[3] Department of Community Medicine, School of Medicine, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

[4] Department of Community Medicine, School of Medicine, Bushehr University of Medical Sciences, Bushehr, Iran

Corresponding author and reprints: Niloofar Motamed. Department of Community Medicine, School of Medicine, Bushehr University of Medical Sciences, Bushehr, Iran.
Email: motamedn@bpums.ac.ir
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Abstract

Background: Responsiveness along with health promotion and financial risk protection plays a pivotal role in health systems. The present study aimed to examine responsiveness in hospitals affiliated to Bushehr University of Medical Sciences, in the south-west of Iran.

Methods: In a cross-sectional study, the statistical population consisted of the patients referring to two university hospitals in Bushehr, namely Persian Gulf Hospital and Bushehr Heart Center. In total, 402 patients were selected using the stratified random sampling method. Data was collected using a demographic questionnaire and the validated Persian version of the standard World Health Organization questionnaire on health system responsiveness to assess responsiveness level during 2015.

Results: Responsiveness level was statistically different between the two hospitals (2.3±0.58 and 2.7±0.50, respectively). In general, "access to social support" (3±0.93) and "choice of health provider" (1.7±0.93) obtained the highest and lowest scores. Apart from "confidentiality" and "access to social support," a statistically significant difference was observed in other domains (dignity", "autonomy", "communication", "quality of basic amenities", "choice of health care provider", and "prompt attention") between the two hospitals.

Conclusion: University hospitals studied had an average performance regarding responsiveness. It seems necessary to pay more attention to two domains of responsiveness including choice of health provider and autonomy in the hospitals.

Introduction

Health promotion is not the mere but the main objective of a health system (1). There are three intrinsic objectives to all health systems: health promotion, responsiveness, and financial risk protection (2). A health system can provide good health services, but if it is not good in two other ways, satisfaction is not gained (3). In order to improve heath quality and equity, since the early 21st century, these

objectives have been incorporated in the World Health Organization (WHO) strategy for the evaluation of health systems (4).

Responsiveness has currently gained an ever-increasing significance (5). This concept has been introduced to the health sector since the 1990 and offered a new path in the administration of healthcare organizations, including hospitals (6). In health systems, responsiveness involves nonclinical aspects of service provision, meaning that the effectiveness of surgical procedures, medications, etc. is not included in this concept (7). Responsiveness enhancement, which is often attainable at low or even no cost, directly influences the patients' comfort and well-being (3,8). Responsiveness can be surveyed from two perspectives: (i) attracting clients as the direct consumers of healthcare service, and (ii) protecting the patient's right of receiving adequate and timely care (5). The WHO has continuously encouraged its member states to monitor the performance of their health systems (9). Accordingly, the World Health's report in 2000 approved a model including seven domains to which the eighth domain was later added (10,11). These eight domains were classified under interpersonal domain (dignity, autonomy, confidentiality, and establishment of communication) and client-orientation domain (access to social support networks during care, quality of basic amenities, choice of health care provider, and prompt attention) (12)

In this report, after adjustment of some variables (individual freedoms, level of development, gender ratio), health systems have finally been compared from responsiveness perspective throughout the world where, with a score of 5.1 (out of 10), Iran was ranked among the last six countries in the Middle East and the 100th in the world among 191 member states (4,13). In similar studies conducted in two Iranian metropolises, namely Isfahan (2011) and Mashhad (2013), responsiveness in hospitals was at an average level (14,15) but since May 2014, Health Sector Evolution Plan was put in to effect in Iran in which responsiveness was targeted even though so limited and indirectly, which is a considerable step towards securing and meeting patients' rights (16).

In the light of the limited number of studies on responsiveness, and in particular, following the introduction of the Health Sector Evolution Plan, we intended to examine responsiveness in the university hospitals in Bushehr, Iran, in order to understand the strengths and weaknesses of the hospitals studied and in the hope that it could draw planners' and policy makers' attention more to this area.

Methods

The present cross-sectional study was conducted in the form of a health system research (HSR). The statistical population consisted of patients visiting two university hospitals in Bushehr, namely Persian Gulf Hospital and Bushehr Heart Center, during May to September in 2015 (one year after implementation of Health Sector Evolution Plan). The province of Bushehr is located in the south-west of Iran, and in the north coast of Persian Gulf. The inclusion criteria were hospitalization for at least 24 hours and verbal consent was obtained from the patients or their companions. The exclusion criteria were participation in the study during previous hospitalization, as well as inaccessibility to the patients or their companion. Participants were selected through the proportional stratified random sampling method as quotas based on the average number of beds in each ward (internal medicine 26%, general surgery 36%, obstetrics and gynecology 14%, pediatric 14%, and cardiology 10%). There are two university hospitals in Bushehr: Persian Gulf Hospital and Bushehr Heart Center. In the present study, the heart hospital was considered as a ward and patients were selected based on the average number of beds in each ward. The samples

from each ward were selected randomly (using random-number table).

The sample size was calculated at the confidence level of 95%, relative precision of 10%, and assumed satisfaction in 50% of the respondents of hospital services. Anticipating a 5% non-responding rate, due to incomplete or unfilled questionnaires, 402 individuals were ultimately included in the study. A total of 362 patients were selected from Persian Gulf Hospital and 40 patients from the Heart Center. Data were collected using questionnaire and face-to-face interview by a single interviewer. In the first part of the questionnaire, participants' demographic information (age, sex, level of education, place of residence, date and ward of hospitalization, and respondent) were collected. The second part of the questionnaire included the Persian translated version of the WHO responsiveness questionnaire; the validity and reliability of the questionnaire was previously verified by Javadi et al. (14). The responsiveness questionnaire contained eight parts, each part related to a specific domain of responsiveness. Items were scored based on a 5-point Likert scale. The mean score of related items to each domain represented the score of that domain. The overall responsiveness score was obtained through calculating the average of all eight domains' scores by taking the weight of each domain into account. The following weight factors were assumed for "dignity", "autonomy", "confidentiality", "communication", "access to social support", "quality of basic amenities", "choice of health care provider", and "prompt attention", respectively: 0.125, 0.125, 0.125, 0.125, 0.15, 0.1, 0.05, and 0.2 (4). The overall responsiveness score was in the range of 0-4. The scores were classified into 0-0.8 (very bad), 0.81-1.6 (bad), 1.61-2.4 (average), 2.41-3.2 (good), and 3.21-4 (very good) groups. The independent t-test and univariate Analysis of Variance (ANOVA) were used to compare responsiveness scores between different groups. Multiple linear regression was employed to determine predictors of responsiveness. Data analysis was done using PASW Statistics for Windows, version 18.0. Chicago: SPSS Inc. at the significance level of 0.05.

The present study was approved by the Ethics Committee of Bushehr University of Medical Sciences (code: IR. BPUMS. REC. 1394. 49). Patients were assured that their responses to the research team remained confidential and their responses would have no effect on their hospital services. None of the collaborators of the project were working at the hospital executive units. Participants were compensated for their time and cooperation.

Results

From among a total of 402 participants, 362 (90%) were selected from Persian Gulf Hospital and 40 (10%) from Bushehr Heart Center. In total, 229 (57%) of patients were female and 173 (43%) were male. The mean±SD age of participants was 38±15.5 years, with the minimum and maximum of 15 and 83 years, respectively. Other demographic data are presented in Table 1. The overall responsiveness score was 2.3±0.58. The responsiveness scores of Persian Gulf Hospital and Bushehr Heart Center were 2.3±0.58 and 2.7±0.5, respectively, demonstrating a statistically significant difference between the two hospitals (P=0.001). The total score and the scores of each responsiveness domain for each hospital are illustrated in Figure 1. In general, "access to social support" (3±0.93) and "choice of health provider" (1.7±0.93) obtained the highest and lowest scores, respectively. Regardless of "confidentiality" and "access to social support," a statistically significant difference was observed in other domains between hospitals.

Table1. Demographic characteristics of patients participating in the study in Bushehr university hospitals in 2015

Variable		Persian Gulf hospital No (%)	Heart hospital No (%)	Total No (%)
Sex	Male	152 (42)	21 (52.5)	173 (43)
	Female	210 (58)	19 (47.5)	229 (57)
Location of residence	Rural	64 (17.7)	6 (15)	70 (17.4)
	Urban	298 (82.3)	34 (85)	332 (82.6)
Interviewee	Patient	245 (67.7)	30 (75)	275 (68.4)
	Companion patients	117 (32.3)	10 (25)	127 (31.6)
Education	less than diploma	169 (46.7)	27 (67.5)	196 (49)
	Diploma	95 (26.2)	9 (22.5)	104 (26)
	university degree	98 (27.1)	4 (10)	102 (25)
Marriage	Single	126 (35)	4 (10)	130 (32)
	Married	214 (59)	32 (80)	246 (61)
	Widow	19 (5)	4 (10)	23 (6)
	Divorce	3 (1)	0	3 (1)
Length of stay (day)	1	178 (49.2)	11 (27.5)	189 (47)
	2-5	116 (32)	13 (32.5)	129 (32.1)
	>5	68 (18.8)	16 (40)	84 (20.9)
Age (year)	15-25	90 (24.9)	2 (5)	92 (23)
	25-45	187 (51.6)	13 (32.5)	200 (50)
	>45	85 (23.5)	25 (62.5)	110 (27)

Table 1. The scores of the domains of responsiveness in Persian Gulf Hospital, Bushehr Heart Center and in total in 2015

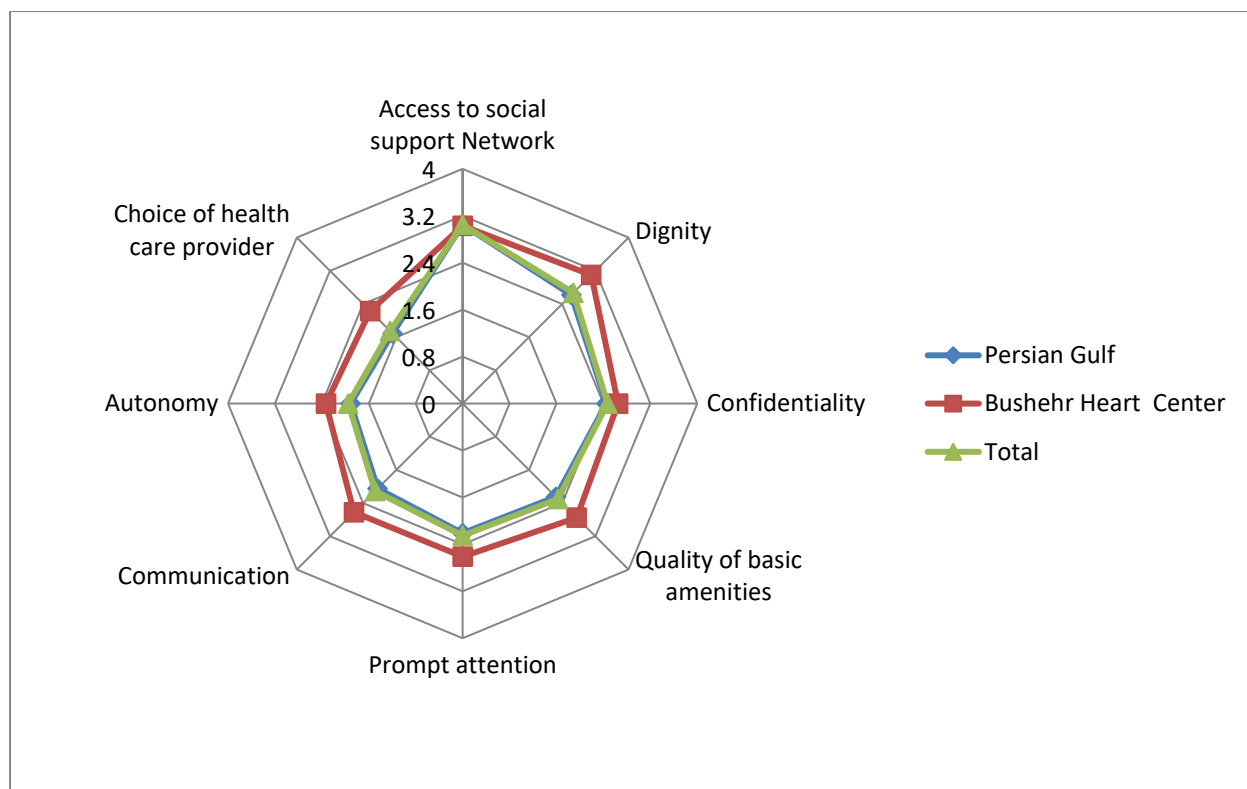| Responsiveness domains	Total score	Hospital score		*P*
		Persian Gulf	Heart Center	
	mean±SD	mean±SD	mean±SD	
Access to social support networks	3±0.93	3±0.95	3±0.79	0.9
Dignity	2.6±0.67	2.6±0.67	3.1±0.56	0.001
Confidentiality	2.4±0.96	2.4±0.97	2.6±0.84	0.22
Quality of basic amenities	2.3±0.9	2.2±0.91	2.7±0.71	0.001
Prompt attention	2.2±0.85	2.2±0.85	2.6±0.77	0.005
Communication	2.1±0.84	2±0.84	2.6±0.65	0.001
Autonomy	1.9±0.62	1.9±0.61	2.3±0.64	0.001
Choice of health care provider	1.7±0.93	1.6±0.91	2.2±0.99	0.001

This table is related to figure 1

Figure 1. The scores of the domains of responsiveness in Persian Gulf Hospital, Bushehr Heart Center, and in total in 2015

Responsiveness scores for each hospital ward were also calculated. A statistically significant difference was observed between the cardiology (Heart Center), internal medicine (P=0.001), and general surgery (P=0.001) wards, based on ANOVA with Tukey's post hoc test. The mean responsiveness scores for each ward are presented in Figure 2.
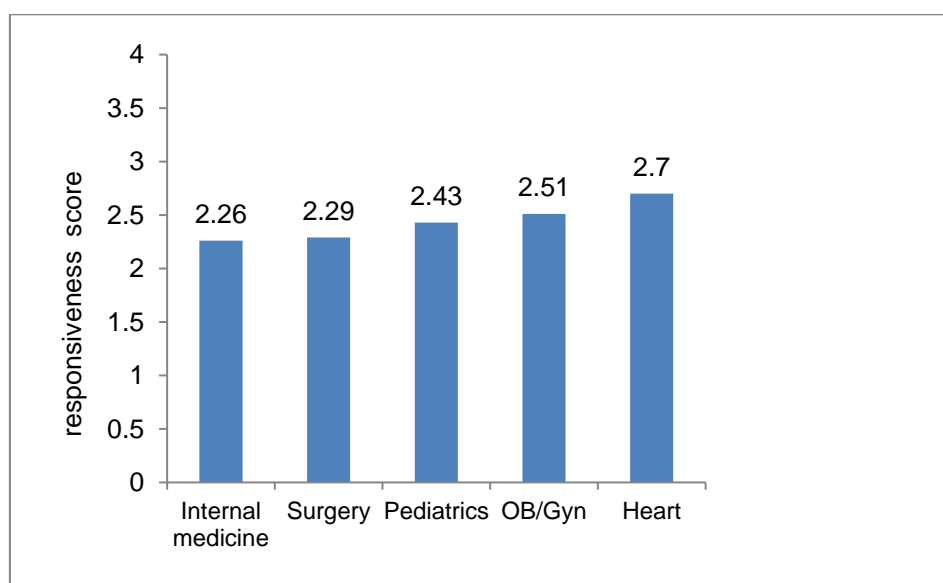

Figure 2. Responsiveness score of different wards in Bushehr university hospitals in 2015

Table 3. Hospital and demographic variables as the predictors of responsiveness in the university hospitals in Bushehr in 2015

Variable	ß	95% CI	*P*
Admitted ward	0.10	0.06 - 0.14	0.001
Place of residence	-0.22	-0.37_-0.07	0.003
Hospital	-	-	0.57
Sex	-	-	0.57

The mean responsiveness scores in women and men were 2.4±0.58 and 2.3±0.57, respectively. These figures were 2.5±0.46 and 2.3±0.6 in rural and urban areas, respectively. A statistically significant difference was observed in the responsiveness scores based on gender (*P*=0.03) and place of residence (*P*=0.002). Level of education and other demographic variables did not make a significant difference in the responsiveness scores.

Also, multiple linear regression was run to determine responsiveness predictors. The statistically significant variables namely, hospital, ward, gender, and place of residence were entered in the model. Two variables, ward (ß=0.10, *P*=0.001) and place of residence (ß=-0.224, *P*=0.003) were ultimately remained in the model and these two, although limitary (R^2=0.04), were independent significant predictors of responsiveness (Table 3).

Discussion
According to the results, the overall responsiveness score was 2.3±0.58, demonstrating an average performance. This is in line with the 2000 World Health Report indicating an average responsiveness level in Iran, which could be due to insufficient consideration of non-clinical demands of patients during the last 15 years (4). Obtained results of Javadi's study in public and private hospitals correspond to our study, as well (14). However, the evaluation of responsiveness in a hospital in Mashhad, in the northeast of Iran, resulted in a good score (18). Given the similarity of evaluation methods used in these studies, the existing difference might be to a large extent attributed to varying performances of healthcare providers, different academic policies in prioritization and administration of programs, performance monitoring or inconsistency in the participants' level of expectation.

According to the participants' viewpoints, "social support", "dignity", and "confidentiality" acquired the highest scores, whereas, the lowest scores belonged to "communication", "autonomy", and "choice of health provider", respectively. Bushehr Heart Center enjoyed a more favorable condition compared with Persian Gulf Hospital in all domains, except for "social support", which was nearly matched.

In the evaluations of hospital responsiveness in Mashhad and the health system responsiveness to outpatient diabetic patients in Tehran, Iran, the three highest-ranking domains were similar to those of the current study (15, 19). "Social support" and "dignity" were also among the three highest-ranking domains in the study in Wuhan, China, and in the Polish hospital study (3, 20). These differences in domains' scores could be a reflection of accreditation system effectiveness in terms of grounding standards and related indicators. The notable point is the domain of "autonomy" located among the three domains with the lowest score in the present study, which is in line with the results of similar studies conducted on patients in a number of hospitals in Mashhad and Tehran (15, 19). In a household survey in Tehran, "autonomy" was amongst the worst and most favorable domains in terms of performance according to inpatients and outpatients, respectively (21). This contradiction would be to a large extent due the fact that inpatients are less capable of

becoming involved in their treatment decisions, which is probably because of either the more complicated nature of therapeutic measures in hospital or less quality in the delivery of health services by medical team.

Persian Gulf Hospital received an average responsiveness score while the other center in the present study obtained a good score. From an inter-ward comparison perspective, the cardiology unit had the highest responsiveness level, followed by obstetrics/gynecology and pediatrics wards. The general surgery ward also achieved a slightly higher score compared to the internal medicine ward, although both exhibited an average level of responsiveness. In general, statistically significant difference was observed merely between the cardiology and two wards; general surgery and internal medicine. Apparently, in wards such as cardiology with lower number and diversity of patients, the responsiveness was more favorable thanks to their professional staff and greater amount of time devoted to patient needs. In a study on 10 hospitals in Mashhad, the inter-ward responsiveness also showed a significant difference, and the internal medicine ward gained the lowest score, as well (18).

Females and villagers were more satisfied with the service quality as compared to males and urbanites. This difference was found to be statistically significant. Similarly, women expressed higher responsiveness levels in a study in china between 2007 and 2009 and in another study in Mashhad (19, 20). However, female outpatients with diabetes were less satisfied of the services received as compared to their male counterparts (28% vs. 38%). The reason for the generally more positive evaluation of hospitalized women as compared to men could be partly attributed to their unreal responses arising from a greater concern about their treatment process and possibly less attention in meeting their expectations by medical care team. Different expectation levels from the

health system between urban and rural residents could also be affected by their health literacy level.

Similar to three other studies in Iran, level of education was not found to have a significant effect on the responsiveness scores (16, 18, 21), although those with higher education tended to give lower scores. In a study which examined the responsiveness of the Chinese health system in 2009, lower responsiveness scores dropped with increasing the educational level (20), which could demonstrate that increased in educational level does not necessarily correspond to higher health literacy.

Similar to the study by Bazaz in Mashhad, ward of admission (ß= 0.225) was the best predictor of responsiveness as compared to other hospital and demographic variables (18). Furthermore, urbanization was observed to adversely affect the satisfaction score.

One of the main strengths of the present study was random sampling approach and the relatively appropriate number of respondents. Furthermore, it is the first ever done study evaluating health system responsiveness in Bushehr province, in the south-west of Iran. The second strength was that only one interviewer contributed in the data collection, so inter-rater reliability was not a concern. The main limitation of the current might be respondents' conservatism and caution in revealing their real feelings, as such, generalization should also be done cautiously.

The present study is a reflection of perceived quality called responsiveness by service receivers. To ground patient orientation from theory into action, responsiveness should be put under severe scrutiny by planners and health system policy makers in the province. Low score of some perspectives of responsiveness could be related to the fact that besides quality initiatives performed in health evolution plan, purposeful reform programs have not yet been put in place in hospitals in order to

directly target nonclinical expectations. It is expected that accreditation plan as the most critical tool of quality improvement in hospitals could pave the way for fulfilling the patient rights. Undoubtedly, managers' attitude change, staff training, and integration of responsiveness components in accreditation program would play pivotal role in providing better health care.

Conflict of interest

Authors declare no conflict of interests.

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