



Responsiveness to Non-Clinical Needs in Public Hospitals During the COVID-19 Pandemic: Evidence from Southern Iran

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Abstract

Introduction: Health system responsiveness (HSR), the extent to which health services meet people's legitimate expectations regarding the non-clinical aspects of care, is essential for patient-centered care and institutional trust, particularly during crises such as the COVID-19 pandemic. This study aimed to assess inpatient HSR in public referral hospitals in southern Iran during the COVID-19 pandemic.

Methods: In 2023, we conducted a cross-sectional telephone survey of 573 recently discharged patients from two major public COVID-19 referral hospitals in Kerman and Fars provinces. The WHO HSR questionnaire assessed eight domains: Dignity, communication, autonomy, confidentiality, prompt attention, choice of provider, quality of basic amenities, and social support. We used logistic regression to identify predictors of rating each domain as good/very good.

Results: The highest-rated domain was prompt attention (69.3%), followed by social support (69.1%), dignity (65.5%), and confidentiality (63.0%). Lower ratings were observed for communication (42.9%), autonomy (48.2%), and choice of provider (48.3%). In multiple logistic regression, males reported more favorable responsiveness (AOR=1.77). Rural residence (AOR=0.25) and lower income (no income AOR=0.22; <10 million tomans: AOR=0.51) were associated with less favorable experience.

Conclusion: Public hospitals maintained acceptable performance in several non-clinical domains during COVID-19 but underperformed in communication, autonomy, and provider choice—particularly among socioeconomically disadvantaged groups. Targeted strategies to strengthen staff communication skills and to address the needs of rural and low-income patients are warranted to advance equity and patient-centered care during health emergencies.

Keywords: Patient satisfaction, Delivery of health care, Health services, COVID-19, Public hospitals, Iran

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Introduction

Health system responsiveness (HSR) is one of the World Health Organization's (WHO) three intrinsic objectives of health systems, alongside improving population health and ensuring financial protection (1). HSR refers to how well health services meet people's legitimate expectations regarding the non-clinical aspects presented by WHO (2), encompassing eight domains: dignity, autonomy, confidentiality, prompt attention, choice of provider, quality of basic amenities, communication, and social support (3). Distinct from clinical effectiveness and financial protection,

HSR centers on the human and social experience of care, how individuals are treated as persons, not solely as patients (1).

Robust HSR contributes to public trust, satisfaction, and the perceived legitimacy of health systems (4). When patients feel respected, informed, and treated fairly, they are more likely to engage with healthcare services and adhere to treatment (5). Consequently, HSR has become central to the global universal health coverage agenda, which emphasizes not only access but also the quality and equity of service delivery (6).

Maintaining high levels of responsiveness is particularly



challenging during systemic crises such as disease outbreaks, natural disasters, or political and economic instability (7). Emergencies like the COVID-19 pandemic place extraordinary pressure on health systems, exposing structural weaknesses and amplifying pre-existing inequities. Health workers face overwhelming workloads, facilities become overcrowded, supply chains are disrupted, and public anxiety rises. Under these conditions, attention to non-clinical dimensions of care may be deprioritized, despite their essential role in preserving human dignity and ensuring patient-centered care. In such circumstances, a health system's ability to remain responsive serves as a litmus test of its institutional resilience and ethical commitment to equitable care (8).

The COVID-19 pandemic, a global and protracted health crisis, revealed both strengths and vulnerabilities in health systems worldwide. Countries at all income levels struggled to maintain routine services while responding to an unprecedented surge in demand for acute care (9). In Iran, the health system, already strained by economic sanctions and structural inefficiencies, faced compounding difficulties in sustaining service delivery (10). Public hospitals, particularly inpatient departments, stood on the front line. They absorbed the bulk of critically ill patients, implemented rapidly evolving clinical protocols, and operated under severe resource constraints. Healthcare workers experienced high rates of infection and burnout, while patients and families struggled with fear, isolation, and limited access to information and support (11).

In this context, responsiveness within inpatient services in public hospitals became both more important and more difficult to achieve. Unlike outpatient services, which offer greater flexibility in scheduling and communication, inpatient care involves extended, high-stakes interaction with the healthcare system (12). For people with limited financial resources, public hospitals are often the only feasible option for inpatient care. These institutions perform a critical equity function, ensuring that low-income and uninsured individuals receive life-saving services (13). During the pandemic, their role in protecting population health and upholding the right to care became even more pronounced. Yet the exceptional pressure on these facilities raised serious concerns about their capacity to meet patients' non-clinical expectations and to preserve core values such as dignity, respect, and compassionate communication (14).

Despite its importance, empirical research on responsiveness in public inpatient settings during health crises remains limited, particularly in low- and middle-income countries (LMICs) (15). Most existing studies have been conducted at stable, non-crisis conditions and focus largely on outpatient care (16). Where emergencies have been examined, the emphasis has typically been on service availability or logistical preparedness rather than patient-centered metrics (17). Moreover, much of the literature does not distinguish between public and private sectors, although they differ markedly in governance, financing, and population served.

In Iran, responsiveness has been studied primarily in outpatient or primary care settings (18). Investigations have explored perceptions of respect, confidentiality, and communication in family physician programs or urban health centers; however, few studies have examined these dimensions in inpatient care, and fewer during periods of acute system strain such as the COVID-19 pandemic. Given the heavy reliance of socioeconomically vulnerable populations on public inpatient services, this evidence gap represents a significant blind spot. Without data on patient experiences of non-clinical care during the pandemic, policymakers and managers lack a complete picture of system performance and a basis for targeted reforms (19).

Responsiveness reflects more than patient satisfaction; it also signals institutional functionality, staff training, managerial effectiveness, and the ethical climate (20). Evaluating responsiveness in the inpatient sector under crisis conditions, therefore, illuminates both individual experiences and the capacity, protocols, and culture needed to maintain humane, respectful care during stress (21). Identifying determinants of responsiveness, such as patient characteristics, hospital infrastructure, staffing levels, and communication practices, can guide interventions to improve quality and equity (22). Against this backdrop, the present study provides a detailed and contextualized assessment of inpatient responsiveness in public hospitals during the COVID-19 pandemic in southern Iran.

Methods

Study design and setting

We conducted a cross-sectional telephone survey at two public COVID-19 referral hospitals located in Kerman and Fars provinces in southern Iran in 2023. These hospitals were designated treatment centers during the country's COVID-19 waves.

Participants and eligibility

The study population comprised adult patients discharged from either hospital within the 14 days preceding data collection. Eligibility criteria were: i) hospitalization at one of the two referral centers during the eighth pandemic wave; ii) discharge within the previous 14 days; iii) willingness to complete a structured telephone interview; and iv) provision of verbal informed consent.

Study instrument

We used the WHO HSR module to assess non-clinical aspects of inpatient care. The instrument evaluates eight domains—dignity, communication, autonomy, confidentiality, prompt attention, choice of provider, quality of basic amenities, and social support—using 15 items rated on a five-point Likert scale from “very bad” to “very good.” Each domain is represented by two items, except choice of provider (one item).

Briefly, prompt attention captures time to reach the hospital and waiting time for services; dignity assesses respectful treatment and privacy during examination; communication addresses clarity of information and

opportunities to ask questions; autonomy concerns participation in decisions and information on alternatives of care and treatment; confidentiality covers privacy of discussions and protection of personal information; choice of provider gauges freedom to select a provider; quality of basic amenities reflects cleanliness and adequacy of physical spaces; and social support assesses ease of maintaining contact with family and friends during hospitalization.

Validity and reliability

The HSR questionnaire, developed for the 2003 World Health Survey, has been translated from English to Persian (23). Its face and content validity, including a content validity index (CVI) of 0.91, have been reported in a previous study conducted in Iran (24). In the present study, test–retest reliability was assessed in an independent group of 40 previously hospitalized patients who completed the questionnaire twice, with a fixed 14-day interval between administrations. Intraclass correlation coefficients (ICCs) across the eight domains ranged from 0.84 to 0.94 (mean ICC=0.90), indicating excellent temporal stability. Internal consistency was acceptable across the seven multi-item domains (Cronbach's α range, 0.71–0.82); the choice of provider domain comprises a single item, so Cronbach's α is not applicable. The reliability subsample was entirely separate from, and excluded from, the main study sample.

Data collection procedures

A trained interviewer (MT) conducted structured telephone interviews using contact information obtained from hospital records. Before the interview, participants received a standardized study description and provided verbal informed consent. Interviews lasted approximately 5–7 minutes. If an initial call was unanswered, up to two additional attempts were made. The interviews took place during April and May 2023.

Sample size and sampling method

Based on prior Iranian data reporting a 69% 'good/very good' rating averaged across the eight HSR domains for hospitalized patients (23), the minimum sample size for a single proportion was calculated using the standard formula as follows:

$$n = z^2 (p * (1 - p)) / d^2$$

Where n is the required sample size, z corresponds to the 97.5th percentile of the standard normal distribution (two-sided $\alpha = 0.05$), p is the estimated response proportion (0.69), and d is the desired margin of error (set at 0.04) (23), yielding a target minimum of approximately 514 participants. Allowing 15% for non-response gave a target of approximately 591 participants. Ultimately, 573 patients completed interviews. We used proportional stratified random sampling by hospital ward: eligible discharges within the prior 14 days formed the frame, and within each ward, a sample proportional to the ward's discharge volume was selected using simple random sampling. Names and telephone numbers were extracted from hospital records.

All necessary permissions were obtained to access patient contact information, and the protocol, including verbal consent, was approved by the Ethics Committee of Kerman University of Medical Sciences (Ethical Approval Code: IR.KMU.REC.1401.55).

Study variables

Outcome variable: Overall responsiveness to non-clinical needs during the index hospitalization was coded as a binary variable: 1 if a respondent rated all 15 items as "good" or "very good"; 0 otherwise (i.e., any item rated "moderate," "poor," or "very poor").

Independent variables

Independent variables in this study were categorized into three main groups. The first group included demographic variables, including age, gender, ethnicity, nationality, religion, residence area, education level, and marital status. The second group, named job and income status, consisted of employment status and income level. The third group encompassed variables associated with COVID-19, including the number of times the individual had contracted the virus and whether they had received the COVID-19 vaccine.

Data manipulation and analysis

To account for the complex survey design, sampling weights were applied using the `svyset` command. Weighting was performed based on the age and sex distribution of the population in each of the two studied provinces, in accordance with the 2023 population estimates provided by the Statistical Center of Iran. Additional weights were applied based on the total population of each province and the proportional representation of ethnic groups within them.

Descriptive statistics were presented as means and standard deviations for continuous variables, and frequencies and percentages for categorical variables. For analysis, univariate logistic regression models were initially conducted to examine the relationship between each independent variable and the binary outcome variable. Variables with a p -value less than 0.2 were considered for inclusion in the multivariable logistic regression model. A backward elimination approach was then applied in the multivariable model, retaining only variables with a significance level of $P < 0.05$. Adjusted odds ratios (ORs) with 95% confidence intervals (CIs) were reported for all significant predictors. The goodness-of-fit of the logistic regression models was evaluated using the Hosmer-Lemeshow test. A non-significant p -value was interpreted as evidence of an adequate model fit. All data management and analyses were performed using STATA version 17.

Results

Demographic characteristics

A total of 573 individuals participated in the study (response rate: 96.9%), of whom 328 (57.2%) were male. Among the participants, 168 individuals (29.37%) were 60 years old

or more. Most respondents (552 participants, 96.3%) held Iranian nationality, and 503 (87.8%) identified as Persian ethnicity. A majority of participants, 528 individuals (92.1%), were Shia Muslims, while the remaining were Sunni. In terms of residence, 405 participants (70.7%) lived in urban areas, and 168 (29.3%) resided in rural areas. Additionally, 364 individuals (63.5%) were married. Regarding education, 103 participants (18%) were illiterate, while 100 individuals (17.5%) had university-level education.

Job and Income Status

A total of 286 participants, approximately half of the sample, were employed. Only 75 participants (about 13%) were under the support of welfare organizations. Additionally, 103 participants (18%) were retired, and 109 individuals (19%) were engaged in other types of occupations. Among the respondents, 73 individuals (12.7%) reported having no income, while 100 participants (17.5%) reported a monthly income exceeding 100 million Rials (approximately 10 million Tomans).

COVID-19 related factors

A total of 426 participants (74.3%) had received the COVID-19 vaccine. Moreover, 362 individuals (63.2%) reported having contracted COVID-19 once, while the remaining participants had been infected at least twice (Table 1).

Inpatient setting responsiveness

The overall mean score of the questionnaire was 3.53 with a standard deviation of 0.71. The dimensions of dignity, prompt attention, social support, and confidentiality had the highest mean scores among all components, with mean values of 3.75, 3.71, 3.64, and 3.59, respectively. For these dimensions, over 60% of participants rated the quality of services as “good” or “very good,” reflecting a generally favorable assessment of these key aspects of care.

In the communication domain, the mean score was below 3.5. Specifically, regarding the clarity of physicians’ explanations, approximately one-third of the responses were rated as “average.” In the autonomy dimension, which reflects the extent of patient involvement in decision-making and receiving information about treatment options, a mean score of 3.35 was recorded. While more than half of the respondents rated this dimension as “good” or “very good,” about one-third evaluated it as “average,” and over 10% rated it as “poor” or “very poor.”

The choice dimension, which consisted of a single item, received the lowest mean score among all components, with a value of 3.29. Fewer than half of the participants rated this aspect as “good” or “very good.” Regarding the environmental quality dimension, although it had a mean score of approximately 3.38, around 55% of the respondents considered the quality of these services to be “good” or “very good” (Table 2).

Each dimension of responsiveness was transformed into a binary variable to assess its desirability. Specifically, if

Table 1. A summary of general characteristics of study participants

Category	Variable	Number (%)
Demographic characteristics	Age (years)	
	<30	104 (18.18)
	30-44	166 (29.02)
	45-59	134 (23.43)
	≥60	168 (29.37)
	Gender	
	Female	245 (42.8)
	Male	328 (57.2)
	Ethnicity	
	Persian	503 (87.8)
	Others	70 (12.2)
	Nationality	
	Iranian	552 (96.3)
	Other	21 (3.7)
	Religion	
	Shia	536 (93.5)
	Sunni	37 (6.5)
Job and Income status	Residence area	
	Urban	405 (70.7)
	Rural	168 (29.3)
	Education level	
	Illiterate	103 (18.0)
	Under diploma	185 (32.3)
	Diploma	119 (20.8)
	Academic	166 (29.0)
	Marital status	
	Married	364 (63.5)
	Widowed/divorced	105 (18.3)
	Single	104 (18.2)
	Employment status	
	Employed	286 (49.91)
	Retirement	103 (17.98)
	Welfare-supported	75 (13.09)
	Other	109 (19.02)
Covid-19 related factors	Income level (by Toman)	
	No income	73 (12.74)
	≤10 million	400 (69.81)
	>10 million	100 (17.45)
	COVID-19 Vaccination	
	No	147 (25.7)
	Yes	426 (74.3)
	Number of COVID-19 Infections	
	1	362 (63.2)
	2	182 (31.8)
	≥3	29 (5.1)

a respondent selected either “good” or “very good” for both items related to a given dimension, that dimension was classified as demonstrating desirable responsiveness. Conversely, if the respondent chose “average,” “poor,” or “very poor” for either item, the dimension was classified as undesirable. From the participants’ perspective, the highest levels of desirable responsiveness were reported in the dimensions of prompt attention (69.28%), social support (69.11%), dignity (65.45%), and confidentiality (63.0%). The quality of basic amenities dimension ranked next, with 54.1% of participants rating it as desirable. Less than half of the respondents reported desirable responsiveness in the dimensions of choice (48.34%), autonomy (48.18%), and communication (42.93%).

The univariate logistic regression analysis revealed that several factors were significantly associated with the perceived responsiveness of hospitals to patients’ needs. These included gender, place of residence, education level, marital status, employment status, and income level ($P < 0.01$). After adjusting for variables in the multiple

Table 2. Frequency and mean responses of participants to questionnaire items based on different dimensions of hospital responsiveness

Construct Statements/Items	Very Good	Good	Moderate	Bad	Very bad	Mean (SD)
N (%)						
Prompt attention						3.71(0.84)
Traveling time	63 (11.0)	361 (63.0)	83 (14.5)	28 (4.9)	38 (6.6)	3.67 (0.97)
Time waited	66 (11.5)	379 (66.1)	72 (12.6)	26 (4.5)	30 (5.2)	3.74 (0.91)
Dignity						3.75(0.79)
Being greeted and talked to respectfully	115 (20.1)	343 (59.9)	65 (11.3)	29 (5.1)	21 (3.7)	3.88 (0.92)
Privacy during physical examinations and treatments	35 (6.1)	356 (62.1)	133 (23.2)	30(5.2)	19 (3.3)	3.62 (0.81)
Communication						3.46(0.79)
Clarity of providers explanations	18 (3.1)	272 (47.5)	189 (33.0)	71 (12.4)	23 (4.0)	3.33 (0.88)
Time to ask questions about health problem/treatment	58 (10.1)	322(56.2)	116 (20.2)	54 (9.4)	23 (4.0)	3.59 (0.94)
Autonomy						3.35(0.86)
Getting information about other types of treatments/tests	19 (3.3)	284 (49.6)	181 (31.6)	67 (11.7)	22 (3.8)	3.37 (0.87)
Being involved in making decisions about care	21 (3.7)	267 (46.6)	188 (32.8)	74 (12.9)	23 (4.0)	3.33 (0.89)
Confidentiality						3.59(0.81)
Talk privately to health care providers	29 (5.1)	349 (60.9)	144 (25.1)	31 (5.4)	20 (3.5)	3.59 (0.81)
Confidentiality of personal information	35 (6.1)	339 (59.2)	144 (25.1)	36 (6.3)	19 (3.3)	3.58 (0.83)
Choice						
Freedom to choose health care provider	21 (3.7)	256 (44.7)	187 (32.6)	85 (14.8)	24 (4.2)	3.29 (0.91)
Quality of basic amenities						3.38(0.93)
Cleanliness of the rooms inside, including toilets	23 (4.0)	315 (55.0)	125 (21.8)	79 (13.8)	31 (5.4)	3.38 (0.96)
space in the waiting & examination rooms	24 (4.2)	315 (55.0)	126 (22.0)	74 (12.9)	34 (5.9)	3.39 (0.97)
Social support						3.64(0.82)
The ease of having family & friends visiting	30 (5.2)	379 (66.1)	103 (18.0)	37 (6.5)	24 (4.2)	3.62 (0.85)
Staying in contact with the outside	43 (7.5)	374 (65.3)	95 (16.6)	41 (7.2)	20 (3.5)	3.66 (0.85)

logistic regression model, the results indicated a significant relationship between gender, place of residence, and income level with perceived responsiveness in the hospital settings studied. Males were 1.77 (OR = 1.77, 95% CI: [1.10, 2.90]) times more likely than women to report favorable responsiveness to patient needs. In contrast, individuals residing in rural areas were 75% (OR = 0.25, 95% CI: [0.14, 0.46]) less likely to evaluate hospital responsiveness as satisfactory compared to those living in urban areas. Income was a strong predictor of perceived hospital responsiveness. Participants with no income had approximately 78% lower odds (OR = 0.22, 95% CI: [0.09, 0.50]), and those earning less than 10 million Toman had about 49% lower odds (OR = 0.51, 95% CI: [0.28, 0.93]) of perceiving hospital responsiveness as desirable compared to individuals with higher income levels (Table 3).

Discussion

This study sought to assess how public hospitals in Iran responded to non-clinical patient expectations during the COVID-19 pandemic, needs that encompass communication, autonomy, dignity, social support, confidentiality, choice, prompt attention, and environmental quality. Although clinical outcomes were at the forefront of health system priorities during the pandemic, non-clinical dimensions critically influence patient experience and satisfaction (25). Yet, these aspects remain under-researched, particularly in low- and middle-income countries (LMICs) where public hospitals often serve as the primary locus of care (26). This study aimed to address this gap by providing empirical evidence on patients' perceptions of non-clinical responsiveness during hospitalization for COVID-19, a major and distressing health event.

The results showed that five specific domains of non-clinical responsiveness were rated relatively well by patients: Prompt attention, social support, dignity, confidentiality, and the quality of basic amenities. These results are consistent with a study conducted at two public and private hospitals in Tehran during the early phase of the COVID-19 pandemic (27).

First, prompt attention, the perception that hospitals quickly responded to patients' needs, was widely appreciated, reflecting an operational strength during a time of unprecedented pressure. Regarding the time taken to reach the hospital, it is worth noting that during the COVID-19 pandemic, pre-hospital emergency services played a crucial role in ensuring timely access to care, which may have influenced perceptions of prompt attention. This finding is consistent with studies from Ethiopia and Mexico, where emergency responsiveness improved through centralized triage systems during the pandemic (28, 29). This finding was similar in terms of scores and average ratings to two studies conducted in different provinces, including Sistan and Baluchestan and Mashhad, during various years of the COVID-19 pandemic (30, 31).

Second, social support was rated positively, likely owing to the efforts of staff to facilitate contact with family members and friends, given the restrictions on hospital visitations. A study conducted in Pakistan highlights social support as one of the most influential factors in enhancing healthcare delivery, promoting disease prevention, and advancing health promotion, particularly in low-income settings and among non-English-speaking populations (32). The studies conducted in Iran during COVID-19 show that social support received a moderate to adequate level of satisfaction (30, 31). This contrasts with the findings from several European countries, where patients

Table 3. Univariate and multiple logistic regression analyses of factors associated with hospital responsiveness to patients' needs

Variables	Univariate logistic regression		Multiple logistic regression	
	P-value	Odds Ratio (95%CI)	P-value	Odds Ratio (95%CI)
Age (years)				
≥60		Ref		
45-69	0.78	0.91 (0.49, 1.72)	-	-
30-44	0.57	0.85 (0.48, 1.50)	-	-
<30	0.053	0.52 (0.27, 1.01)	-	-
Gender				
Female		Ref		Ref
Male	0.005	2.06 (1.24, 3.40)	0.02	1.77 (1.10, 2.9)
Ethnicity				
Persian		Ref	-	-
Others	0.85	1.08 (0.50, 2.33)	-	-
Nationality				
Iranian		Ref	-	-
Other	0.37	1.62 (0.56, 4.73)	-	-
Religion				
Shia		Ref	-	-
Sunni	0.43	0.65(0.23, 1.87)	-	-
Residence area				
Urban		Ref		Ref
Rural	<0.001	0.26 (0.14, 0.48)	<0.001	0.25 (0.14, 0.46)
Education level				
Academic		Ref	-	-
Diploma	0.45	0.79 (0.43, 1.46)	-	-
Under diploma	0.15	0.64 (0.35, 1.17)	-	-
Illiterate	0.004	0.28 (0.12, 0.67)	-	-
Marital status				
Married		Ref		
Widowed/divorced	0.02	0.46 (0.25, 0.87)	-	-
Single	0.02	0.49 (0.26, 0.89)	-	-
Employment status				
Employed		Ref		
Retirement	0.44	0.75 (0.37, 1.54)	-	-
Welfare-supported	0.01	0.42 (0.22, 0.81)	-	-
Other	0.004	0.39 (0.20, 0.74)	-	-
Income level (by Toman)				
> 10 million		Ref		Ref
≤10 million	0.001	0.39 (0.22, 0.68)	0.03	0.51(0.28, 0.93)
No income	<0.001	0.19 (0.09, 0.44)	<0.001	0.22(0.09, 0.50)
COVID-19 vaccination				
No		Ref	-	-
Yes	0.7	1.10 (0.67, 1.83)	-	-
Number of COVID-19 Infections				
1		Ref	-	-
2	0.95	1.02 (0.58, 1.77)	-	-
≥3	0.65	1.33 (0.38, 4.59)	-	-

reported severe emotional distress due to isolation policies, suggesting that Iranian hospitals may have adopted more culturally sensitive approaches to emotional and family support (33).

Third, respect for dignity and privacy received favorable assessments, aligning with existing literature that highlights the moral emphasis placed on respect for patients in Islamic medical ethics. Fourth, confidentiality of personal information stood out as the highest-rated domain, with 63% of participants acknowledging that their data were adequately protected. This may reflect standardized practices for record-keeping and a heightened awareness around privacy concerns during the pandemic. Finally, the physical environment of hospitals, relating to cleanliness, comfort, and safety, was positively rated by 54.1% of patients. Despite resource constraints, hospitals may have prioritized visible hygiene protocols and spatial distancing, reinforcing patients' perception of a safe environment, a

trend also observed in studies from Nigeria and Malaysia (34, 35).

In contrast, three critical domains, autonomy, choice, and communication, were less favorably evaluated. Only 48.2% of participants felt that their autonomy was respected, suggesting that patients had limited input into decisions regarding their care. In high-pressure settings like those seen during the COVID-19 crisis, paternalistic decision-making often resurfaces, sidelining patient agency (36). This issue is mirrored in reports from India and Northern Palestine (37, 38), where patients in public hospitals experienced diminished decision-making capacity during their treatment. Similarly, choice of provider, reported as satisfactory by 48.3% of participants, likely suffered due to both the clinical severity of COVID-19 and the centralized referral and triage systems that removed options for provider or ward selection (39). Other studies conducted in Iran (27, 30) also concluded that choice of provider and

autonomy is a challenging issue in Iranian hospitals, as patients often have limited options when selecting their healthcare providers and are rarely involved in decisions about their own care. Structural constraints within the health system, such as centralized referral pathways, workforce shortages, and limited awareness or emphasis on patient-centered care, contribute to these challenges. These findings highlight the need for policy interventions aimed at enhancing patient empowerment and promoting shared decision-making in hospital settings.

Finally, clarity of communication was the weakest domain, with only 42.9% of patients reporting satisfactory experiences. This result contrasts with other studies conducted in Iran, which have generally shown that the communication dimension receives relatively high scores (27, 30). This discrepancy may be attributed to several factors. First, the studies were conducted during different phases of the COVID-19 pandemic, each of which posed unique challenges for the healthcare system. In the early stages, there was significant uncertainty, high patient volumes, and limited protective equipment, which may have hindered effective communication between healthcare providers and patients. Additionally, the need for physical distancing and the use of personal protective equipment, such as masks and face shields, could have created barriers to clear and empathetic communication. Finally, variations in hospital preparedness, training of staff, and regional health system capacities may also account for the differences in communication scores observed across studies. Ineffective communication in our study may be attributed to overburdened staff, limited time, and heightened infection-control protocols such as mask-wearing, which impaired verbal and non-verbal interactions (40). Prior research underscores that during health emergencies, rushed and unclear communication is a common patient complaint, often fueling confusion and distress (41).

The study also explored socio-demographic factors that influenced patients' assessments of hospital responsiveness. Gender emerged as a significant predictor: male patients were 1.77 times more likely than female patients to perceive hospitals as responsive to their non-clinical needs. This may reflect systemic gender disparities in healthcare interactions, where women often face dismissive or rushed communication, especially in busy, male-dominated clinical environments (42). Alternatively, it may indicate differing expectations between genders regarding care processes, with men potentially reporting more satisfaction with procedural or operational aspects, while women emphasized more on emotional and interpersonal dimensions (43).

Place of residence was another significant factor: Rural residents were 75% less likely than urban patients to assess hospitals positively. This urban-rural gap may reflect deeper structural inequities in health service delivery. Rural patients might face cultural barriers, language mismatches, or discrimination in urban hospitals, where the staff may be less attuned to their social and communicative

expectations. The challenge of navigating unfamiliar and hierarchical hospital environments could also diminish rural patients' perceptions of inclusion and respect (44).

Finally, household income significantly influenced responsiveness assessments. Patients with no income or with monthly incomes below 10 million IRR were significantly less likely to rate hospitals favorably compared to those with higher incomes. These findings are in line with global research indicating that low-income patients frequently encounter more bureaucratic obstacles, receive less attention, or feel less empowered to express dissatisfaction. The intersection of economic disadvantage and illness can exacerbate feelings of vulnerability and neglect in hospital settings, suggesting that socioeconomic status is not only a structural determinant of health but also of care experience (45).

This study also had several limitations. First, the study was conducted in only two large referral public hospitals for COVID-19, which may limit the generalizability of findings to other geographic areas or hospital types. While public hospitals were the primary sites for COVID-19 admissions and are governed by largely centralized policies, variation in regional capacities and resource allocation may still influence patient experiences.

Second, data collection occurred two weeks after patient discharge, which introduces the risk of recall bias. Patients may either overstate or understate their experiences due to emotional recovery or fading memory. That said, hospitalization, especially for a life-threatening illness like COVID-19, is typically a salient experience, and the risk of significant recall decay is less pronounced compared to outpatient encounters.

Third, the study focused exclusively on public hospitals, omitting private and charitable hospital settings that may operate under different administrative cultures and resource environments. Although public hospitals served as the principal centers for COVID-19 admissions, inclusion of other hospital types could provide a fuller picture of system-wide responsiveness.

This study provides important insights into non-clinical care dimensions within the understudied setting of Iranian public hospitals during the COVID-19 pandemic. Its strengths include a relatively large sample size and the use of a comprehensive framework to assess multiple aspects of responsiveness.

Conclusion

In conclusion, the study highlights both strengths and gaps in how public hospitals in Iran responded to the non-clinical needs of patients during the COVID-19 pandemic. While the system demonstrated strong performance in areas like confidentiality, dignity, and environmental hygiene, significant deficiencies persisted in communication, autonomy, and patient choice. These shortcomings were further shaped by socio-demographic disparities, particularly in relation to gender, residence, and income. Addressing these gaps requires institutional reforms, including enhanced training for staff, patient-

centered communication models, and strategies to reduce urban-rural and economic inequities in care delivery. Future studies should consider comparative analyses across hospital types and incorporate qualitative data to deepen our understanding of patient experiences during health emergencies.

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Competing Interests

The authors declare that they have no conflicts of interest.

Data Availability Statement

All necessary data will be available from the corresponding author upon reasonable request.

Ethical Approval

The proposal for the present study was approved by the Ethics Committee of Kerman University of Medical Sciences, Kerman, Iran (reference 401000619). The Ethical approval code is IR.KMU.REC.1401.553.

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References

- Murray CJ, Frenk J. A framework for assessing the performance of health systems. *Bull World Health Organ* 2000;78(6):717-31.
- Nord E. Fairness in evaluating health systems. In: *Summary Measures of Population Health: Concepts, Ethics, Measurement and Applications*. Geneva: World Health Organization; 2002. p. 707-15.
- Rice N, Robone S, Smith PC. The Measurement and Comparison of Health System Responsiveness. HEDG Working Paper 08/05. University of York; 2008. Available from: https://www.york.ac.uk/media/economics/documents/herc/wp/08_05.pdf.
- Rockers PC, Kruk ME, Laugesen MJ. Perceptions of the health system and public trust in government in low- and middle-income countries: evidence from the World Health Surveys. *J Health Polit Policy Law* 2012;37(3):405-37. doi:10.1215/03616878-1573076
- Sen D. Treatment engagement. In: Hadler A, Sutton S, Osterberg L, eds. *The Wiley Handbook of Healthcare Treatment Engagement*. John Wiley & Sons; 2020. p. 503-14. doi:10.1002/9781119129530.ch26
- Lahariya C. Send a 'good camel' to the tent: health system responsiveness to advance universal health coverage. *J Postgrad Med* 2020;66(3):125-7. doi:10.4103/jpgm.JPGM_600_20
- Ererdi C, Nurgabdeshev A, Kozhakhmet S, Rofcanin Y, Demirbag M. International HRM in the context of uncertainty and crisis: a systematic review of literature (2000-2018). *Int J Hum Resour Manag* 2022;33(12):2503-40. doi:10.1080/09585192.2020.1863247
- Gopichandran V. Clinical ethics during the COVID-19 pandemic: missing the trees for the forest. *Indian J Med Ethics* 2020;5(3):182-7. doi:10.20529/ijme.2020.053
- Webb E, Hernández-Quevedo C, Williams G, Scarpetti G, Reed S, Panteli D. Providing health services effectively during the first wave of COVID-19: a cross-country comparison on planning services, managing cases, and maintaining essential services. *Health Policy* 2022;126(5):382-90. doi:10.1016/j.healthpol.2021.04.016
- Akbarialiabad H, Rastegar A, Bastani B. How sanctions have impacted Iranian healthcare sector: a brief review. *Arch Iran Med* 2021;24(1):58-63. doi:10.34172/aim.2021.09
- Hajebi A, Abbasinejad M, Zafar M, Hajebi A, Tareman F. Mental health, burnout, and job stressors among healthcare workers during the COVID-19 pandemic in Iran: a cross-sectional survey. *Front Psychiatry* 2022;13:891430. doi:10.3389/fpsy.2022.891430
- Jacobs EA, Ogedegbe O, Fihn SD. Elective care and health services research in the COVID-19 era. *JAMA Netw Open* 2020;3(11): e2025731. doi:10.1001/jamanetworkopen.2020.25731
- Aljuaid TH, Alqahtani KM, Altwaijri SA, Bokhamsin TH, Alshaghrou SM, Alrashed MA, et al. The role of public hospitals in providing free healthcare services: enhancing accessibility and promoting positive health outcomes for communities. *Int J Health Sci* 2021;5(S1):1545-65. doi:10.53730/ijhs.v5nS1.15433
- Buonaccorso L, De Panfilis L, Chochinov HM, Martucci G, Massari M, Cocchi M, et al. The meaning of dignity in care during the COVID-19 pandemic: a qualitative study in acute and intensive care. *BMC Palliat Care* 2023;22(1):192. doi:10.1186/s12904-023-01311-4
- Mirzoev T, Cronin de Chavez A, Manzano A, Agyepong IA, Ashinyo ME, Danso-Appiah A, et al. Protocol for a realist synthesis of health systems responsiveness in low-income and middle-income countries. *BMJ Open* 2021;11(6): e046992. doi:10.1136/bmjopen-2020-046992
- Fazaeli S, Yousefi M, Ebrahimipour H, Banikazemi H, Khorsand Vakilzadeh A. Responsiveness of the health system in outpatient services in low- and high-income areas of Mashhad. *J Paramed Sci Rehabil* 2016;5(2):58-66. doi:10.22038/jpsr.2016.6912
- Alessandrini E, Varadarajan K, Alpern ER, Gorelick MH, Shaw K, Ruddy RM, et al. Emergency department quality: an analysis of existing pediatric measures. *Acad Emerg Med* 2011;18(5):519-26. doi:10.1111/j.1553-2712.2011.01057.x
- Ahmadpour S, Amirzadeh Iranag J, Yusefzadeh H, Nabilou B. Health system responsiveness in the primary health in a developing country: expectations and experiences of clients. *Open Public Health J* 2023;16(1): e18749445265436. doi:10.2174/0118749445265436231012103040
- Kovacs Burns K, George M. Understanding and managing fragmented transitions in care: learning from and guided by patient, family, health care provider and system-level experiences before, during and follow-up to COVID-19. *Int J Integr Care* 2023;23(S1):163. doi:10.5334/ijic.ICIC23059
- Ahmadi Kashkoli S, Zarei E, Daneshkohan A, Khodakarim S. Hospital responsiveness and its effect on overall patient satisfaction. *Int J Health Care Qual Assur* 2017;30(8):728-36.

- doi:[10.1108/ijhcqa-07-2016-0098](https://doi.org/10.1108/ijhcqa-07-2016-0098)
21. Shaqura II, Jaafariipooyan E, Hosseini M, Shagora A, Sari AA. Nurses' perspectives on inpatient care responsiveness at the Gazan public hospitals. *Ethiop J Health Sci* 2021;31(4):847-56. doi:[10.4314/ejhs.v31i4.20](https://doi.org/10.4314/ejhs.v31i4.20)
 22. Fiorentini G, Robone S, Verzulli R. How do hospital-specialty characteristics influence health system responsiveness? An empirical evaluation of in-patient care in the Italian region of Emilia-Romagna. *Health Econ* 2018;27(2):266-81. doi:[10.1002/hec.3540](https://doi.org/10.1002/hec.3540)
 23. Rashidian A, Kavosi Z, Majdzadeh R, Pourreza A, Pourmalek F, Arab M, et al. Assessing health system responsiveness: a household survey in 17th district of Tehran. *Iran Red Crescent Med J* 2011;13(5):302-8.
 24. Fathi F, Khezri A, Khanjani MS, Hosseinzadeh S, Abdi K. Comparison of responsiveness status of rehabilitation services organization from the perspective of services recipients. *Arch Rehabil* 2019;20(3):270-85. doi:[10.32598/rj.20.3.270](https://doi.org/10.32598/rj.20.3.270)
 25. Fernández-Pérez Á, Sánchez Á. Non-clinical factors and citizens' satisfaction: a way to improve the quality of health systems. *Int J Healthc Manag* 2025;18(1):54-62. doi:[10.1080/20479700.2023.2265685](https://doi.org/10.1080/20479700.2023.2265685)
 26. Valentine N, Darby C, Bonsel GJ. Which aspects of non-clinical quality of care are most important? Results from WHO's general population surveys of "health systems responsiveness" in 41 countries. *Soc Sci Med* 2008;66(9):1939-50. doi:[10.1016/j.socscimed.2007.12.002](https://doi.org/10.1016/j.socscimed.2007.12.002)
 27. Setareh Forouzan A, Mirabzadeh A, Falahat K, Banazadeh Z, Baradaran Eftekhari M. Healthcare system responsiveness in Covid-19: an experience from capital city of IR of Iran. *Int J Prev Med* 2023;14:34. doi:[10.4103/ijpvm.ijpvm_14_22](https://doi.org/10.4103/ijpvm.ijpvm_14_22)
 28. Girma G, Tamire A, Edessa GJ, Dechasa M, Tefasa OK, Negash A, et al. Process evaluation of health system responsiveness level and associated factors among mothers gave birth at obstetric ward in a tertiary hospital, southwest of Ethiopia: mixed study methods. *J Multidiscip Healthc* 2023;16:2291-308. doi:[10.2147/jmdh.S397735](https://doi.org/10.2147/jmdh.S397735)
 29. Aranda Z, Caamal V, Montaña M, Bernal D, Meneses S. Exploring how non-clinical factors in childbirth care shape users' experiences in public health facilities in rural Chiapas, Mexico: a qualitative study using the WHO health systems responsiveness framework. *BMC Pregnancy Childbirth* 2024;24(1):173. doi:[10.1186/s12884-024-06357-7](https://doi.org/10.1186/s12884-024-06357-7)
 30. Khammarnia M, Barfar E, Jafari Nezhad J. Evaluating the healthcare system responsiveness for COVID-19 care in southeast Iran. *Health Scope* 2024;13(3): e147904. doi:[10.5812/healthscope-147904](https://doi.org/10.5812/healthscope-147904)
 31. Teymori E, Tabatabaee SS, Akhlaghi S, Delavarinejad A, Kokabisaghi F. The assessment of health system responsiveness from the viewpoints of COVID-19 patients. *BMC Health Serv Res* 2023;23(1):909. doi:[10.1186/s12913-023-09806-9](https://doi.org/10.1186/s12913-023-09806-9)
 32. Faiola A, Kamel Boulos MN, Bin Naeem S, Ur-Rehman A. Integrating social and family support as a measure of health outcomes: validity implications from the integrated model of health literacy. *Int J Environ Res Public Health* 2022;20(1):729. doi:[10.3390/ijerph20010729](https://doi.org/10.3390/ijerph20010729)
 33. Kim HH, Jung JH. Social isolation and psychological distress during the COVID-19 pandemic: a cross-national analysis. *Gerontologist* 2021;61(1):103-13. doi:[10.1093/geront/gnaa168](https://doi.org/10.1093/geront/gnaa168)
 34. Erundu OF, Ogolodom MP, Mbaba AN, Nonyelum A. Patients' perceptions of hospital care in a COVID-19 pandemic population. *Int J Trop Dis Health* 2021;42(19):27-34. doi:[10.9734/IJTDH/2021/v42i1930540](https://doi.org/10.9734/IJTDH/2021/v42i1930540)
 35. Rahim AI, Ibrahim MI, Musa KI, Chua SL, Yaacob NM. Patient satisfaction and hospital quality of care evaluation in Malaysia using SERVQUAL and Facebook. *Healthcare (Basel)* 2021;9(10):1369. doi:[10.3390/healthcare9101369](https://doi.org/10.3390/healthcare9101369)
 36. Law RW, Choong KA. COVID-19: refracting decision-making through the prism of resource allocation. *Med Leg J* 2020;88(2):97-101. doi:[10.1177/0025817220935752](https://doi.org/10.1177/0025817220935752)
 37. Idhrees M, Padmanabhan C, Jagadeesan K, Velayudhan B. An Indian study: impact of COVID-19 on clinical decision-making and consensus in cardiac surgery practice across the country. *Indian J Thorac Cardiovasc Surg* 2020;36(5):451-63. doi:[10.1007/s12055-020-01022-y](https://doi.org/10.1007/s12055-020-01022-y)
 38. Odeh A, Khayat N, Abuzahra S, Shaheen A, Nazzal Z. Exploring patients' rights awareness and implementations amongst hospitalized patients in Northern Palestine: insights from a local perspective. *BMC Med Ethics* 2024;25(1):139. doi:[10.1186/s12910-024-01139-4](https://doi.org/10.1186/s12910-024-01139-4)
 39. Fins JJ. Resuscitating patient rights during the pandemic: COVID-19 and the risk of resurgent paternalism. *Camb Q Healthc Ethics* 2021;30(2):215-21. doi:[10.1017/s0963180120000535](https://doi.org/10.1017/s0963180120000535)
 40. Digby R, Manias E, Haines KJ, Orosz J, Ihle J, Bucknall TK. Staff experiences, perceptions of care, and communication in the intensive care unit during the COVID-19 pandemic in Australia. *Aust Crit Care* 2023;36(1):66-76. doi:[10.1016/j.aucc.2022.10.004](https://doi.org/10.1016/j.aucc.2022.10.004)
 41. Hermann RM, Long E, Trotta RL. Improving patients' experiences communicating with nurses and providers in the emergency department. *J Emerg Nurs* 2019;45(5):523-30. doi:[10.1016/j.jen.2018.12.001](https://doi.org/10.1016/j.jen.2018.12.001)
 42. Hildenbrand GM, Perrault EK, Rnoch RH. Patients' perceptions of health care providers' dismissive communication. *Health Promot Pract* 2022;23(5):777-84. doi:[10.1177/15248399211027540](https://doi.org/10.1177/15248399211027540)
 43. Elliott MN, Lehrman WG, Beckett MK, Goldstein E, Hambarsoomian K, Giordano LA. Gender differences in patients' perceptions of inpatient care. *Health Serv Res* 2012;47(4):1482-501. doi:[10.1111/j.1475-6773.2012.01389.x](https://doi.org/10.1111/j.1475-6773.2012.01389.x)
 44. Aquino J, Marshall AP, Ranse K, Mills K. The urban hospitalisation experience of rural people: a scoping review. *J Adv Nurs* 2025;81(7):3545-63. doi:[10.1111/jan.16675](https://doi.org/10.1111/jan.16675)
 45. Hill J, Rodriguez DX, McDaniel PN. Immigration status as a health care barrier in the USA during COVID-19. *J Migr Health* 2021;4:100036. doi:[10.1016/j.jmh.2021.100036](https://doi.org/10.1016/j.jmh.2021.100036)