



Determinants of Public Satisfaction and Perception of National Healthcare Services Availability in Jordan: A Patient Survey

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Authors' contributions

This work was carried out in collaboration between both authors. Author MAQ designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author MA managed data collection and the analyses of the study. Both authors managed the literature searches. Both authors read and approved the final manuscript.

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ABSTRACT

Aims: This study aims to assess Jordanian public satisfaction with healthcare services.

Study Design: A descriptive cross-sectional survey design was used.

Place and Duration of Study: Data were collected from 571 Jordanian participants in the period between June 2016 and November 2016.

Methodology: Participants were Jordanians 18 or older, and visited a hospital (tertiary healthcare centres) in the last three weeks were conveniently recruited. A study questionnaire was constructed by the researcher to assess public satisfaction; it was grounded on previous literature and the author's personal experience. The satisfaction measurement consisted of 30 variables.

Results: The mean age of participants was 34.7 (SD 13.6 years) and most of them were females. Most of the participants (58.8%) were not satisfied and the mean total satisfaction score was low at 159.6 (SD 54.9). Participants who were more educated lived in the southern region, and regularly

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visited healthcare settings reported lower (not satisfied) satisfaction scores.

Conclusion: This study demonstrated that higher proportion of Jordanian patients were not satisfied with the healthcare services provided. The determinants of patients' satisfaction were not completely dependent on the actual medical or nursing care. The identified determinants of patient satisfaction should inform satisfaction indicators when developing satisfaction measurement tools, whether in clinical or research settings.

Keywords: Quality; delivery of health care; Jordan; nursing; personal satisfaction.

1. INTRODUCTION

Healthcare has developed in the last decade in response to the increasing demands of society, health needs, and advances in technology [1]. It has become patient-centred and quality provided [1-3]. Patient satisfaction is considered one of the most important healthcare outcomes and an indicator of its quality [3-5]. Measuring patient satisfaction helps in understanding their behaviours of adherence to treatment, return, and recommending healthcare settings to others [3,4]. In Jordan, our healthcare system is facing a number of challenges imposed by the unstable political situation in the Middle East. Three million or more refugees and immigrants have come to Jordan as a result of this instability [6]. This has resulted in increasing the workload on the healthcare system and demands on its limited resources. However, at the same time, the healthcare system is required to provide safe and high-quality services.

Jordan is a small country in the heart of the Middle East, with an area of 92,300 km². It is bounded by Syria on the north, Iraq and Saudi Arabia on the east and south, and Palestine on the west. Most Jordanians are Arab Muslims; Arabic is the official language. According to the Jordanian Department of Statistics, the population has reached 9,531,712 [6]. Of this number, three million (30%) are non-Jordanian (most of them refugees from Palestine, Syria, Iraq, Libya and Yemen) [6]. In comparison to the other countries in the region, Jordan has a well-developed healthcare system and services, in both the public and private sectors. The public sector, represented by the Ministry of Health, includes healthcare centres, maternity and child health centres and hospitals, distributed throughout the country. Most (40%) of the available beds are provided by hospitals affiliated with the Ministry of Health. In addition, there are the Royal Medical Services, composed of large hospitals distributed throughout the country, operated by the leadership of the armed forces. These health services are provided to soldiers

and their families, but civilians can access the services under some circumstances. The public sector includes two university hospitals, affiliated respectively to the University of Jordan and the Jordan University of Science and Technology. They are referral hospitals for complicated cases. The private clinics, healthcare centres and hospitals are concentrated in the central region, around the capital city, Amman.

Satisfaction can be defined as patients' rating of their experience during the provision of healthcare in a selected medical setting [7,8]. Hence, patients usually evaluate the services, physical setting, and the care providers. Satisfaction is subjective patients experience [7]. This makes it a concept that is hard to measure and cannot be objectively validated. Thus, healthcare provider must rely on patients report and deal with it as inherited limitation of satisfaction measurement tools. In addition, it is a multi-dimensional phenomenon that is affected by many factors [3,7,9]. These factors included but not limited to previous experience, patient's age, gender, and level of education [3,7-9]. However, measuring patients' satisfaction remain the mainstay of feedback for policy makers and care providers.

Patient satisfaction has been extensively explored but there is still a wealth of interest in this field [1,4,5,8,10-12]. For example, a study was conducted in Qatar to assess public satisfaction with healthcare services [10], with data collected from 4,083 respondents (Qatari and non-Qatari). The results show high satisfaction rates among participants, about 70% of whom were satisfied or very satisfied with the overall services [10]. They also reported that Qatari participants were less satisfied than were non-Qatari participants, and that females were more satisfied than males [10]. Finally, it was found that many factors were associated with higher satisfaction, including close location of the healthcare settings, low-cost services, good reputation, past experience and being covered by medical insurance [10]. In contrast is a study

conducted to evaluate the level of inpatients' satisfaction with healthcare services in Pakistan [5]. A total of 710 patients were surveyed using the authors' own self-administered questionnaire [5]. Patients were relatively satisfied with hospital staff and physicians communication but they were not satisfied with hospital environment and quality of care. For example, 70% reported that they found bugs in their beds [5]. A study aimed to identify determinants of satisfaction with healthcare services, used data from the World Health Survey [8] collected from 21 European countries using face-to-face interviews, except for one country where phone interviews were used. It was found that all respondents were highly satisfied in most of the countries surveyed [8]. Positive patient experience with staff communication, hospital environment and services, and preserving dignity, were found to predict a high satisfaction level [8]. Other factors can contribute to overall satisfaction [9]; for instance patients treated in tertiary healthcare settings were found to be significantly ($P < .05$) more satisfied than patients treated in secondary healthcare settings [1]. Hassali et al. [4] concluded that waiting time, length of consultation time, and quality of the admission and registration process in hospitals were strongly associated with the levels of patient satisfaction.

In Jordan, the political instability in the region, increased numbers of refugees, and constraints on limited financial resources, without doubt will have an impact on the quality of medical care services provided to the nation's inhabitants. However, no recent study has evaluated public satisfaction with the current healthcare services. Continuous evaluation of satisfaction is considered an important indicator of quality. Hence, the purpose of this study is to assess Jordanian public satisfaction with healthcare services.

2. MATERIALS AND METHODS

2.1 Design

A descriptive cross-sectional survey was used.

2.2 Sample and Sample Size

Participants were Jordanians 18 years and above, visited a hospital (tertiary healthcare centres) in the last three weeks and willing to take part in this study. All participants were conveniently recruited. The required sample size depended critically on the percentage of

responses to the satisfaction questionnaire. For a percentage of 50%, knowing that there are some six million Jordanians [6], complete data from 385 participants was needed. From <http://www.raosoft.com/samplesize.html>, this would allow the percentage of correct answers to be estimated with a 95% confidence interval and margin-of-error of at most $\pm 2\%$. Thus, 571 participants were thought to be adequate (see Fig. 1).

2.3 Instrumentation

A study questionnaire was constructed by the researcher to assess public satisfaction; it was grounded on previous literature and the author's personal experience. The satisfaction measurement consisted of 30 variables (numerical rating scales). Respondents were asked to rate their satisfaction with each variable on an 11-point scale ranging from 0 (not satisfied at all) to 10 (very satisfied). The possible total score ranged from 0 to 300, a score of six on each single variable or total score of 180 required to consider the participant as "satisfied". Questionnaire variables asked about satisfaction with medical and nursing services, communication, information provision, the administrative process (admission and discharge), and hospital amenities and services. Another six generic (Yes / No) questions were asked as follows: "Do you think the nursing care that you received was adequate?", "Have you received adequate pain management?", "Have you received adequate information about your health status?", "Do you think that communication with the hospital staff (medical and administrative) was kind and pleasant?", "Do you think the hospital infrastructure and tidiness are acceptable?", and "Was the care cost reasonable?". Socio-demographic data was also collected (i.e. age, gender, educational level, area of residence, type of health institution, type of hospital visit, and frequency of institutional visits).

The measurement tool was developed in Arabic, and then subjected to review by a panel of experts. The panel consisted of three PhD holders, two of them working as chief nurse officers and the third as head of an education and training department. They had vast clinical and academic experience and also worked as quality assurance surveyors. The questionnaire initially consisted of 25 variables. After the experts' review, two variables were removed (duplication) and eight were added. Also, some wording was revised. The survey was then

piloted on 20 participants. Minor modifications were suggested by participants, although the tool was found to be generally easy to comprehend and to complete, needing only 5 to 8 minutes on average. Thus, the instrument face and content validity was established. However, conducting other type of validity testing was not conducted because of the lack of gold standard satisfaction measurement instrument. Then, it was evaluated for internal consistency using Cronbach's Coefficient Alpha estimate, which was high at .97.

2.4 Setting and Data Collection

This is a national study that covered all regions of the country: centre, north and south.

Participants were recruited from public places such as city centre markets and large malls. The research team obtained ethical approval from the principal investigator's university ethics committee. Research assistants distributed the questionnaire, with a letter explaining the study's aims and the participants' role in the survey. All participants were instructed to call the research assistant to collect the completed questionnaire on the same day. All participants were informed of their right not to participate, to provide no identification data, and to withdraw from the study at any time they wished. All participants signed the study consent form before completing the study questionnaire.

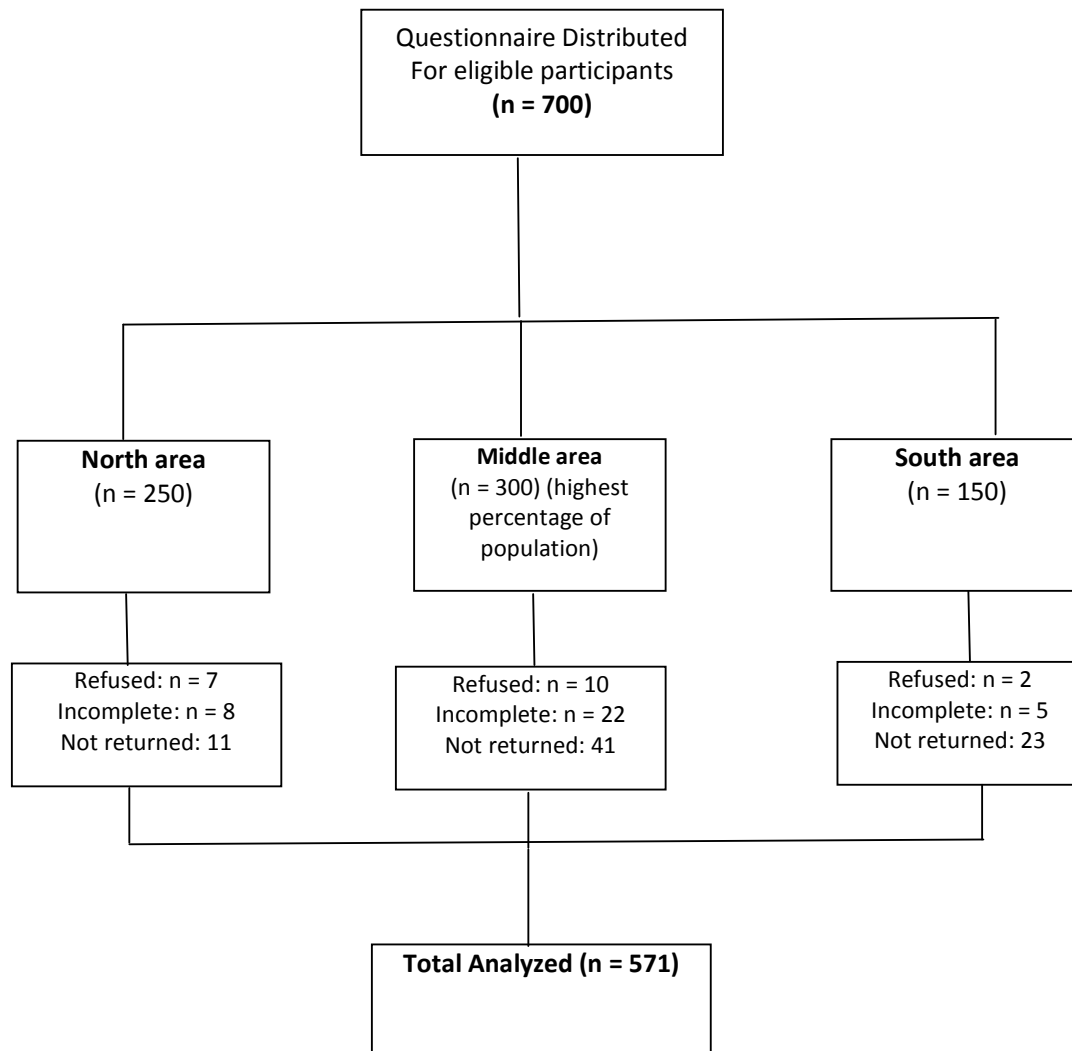


Fig. 1. Diagram showing the flow of participants during data collection

2.5 Analysis

Data entry and analysis were conducted using Statistical Package for Social Science (SPSS) version 21. Simple descriptive statistics such as means, frequencies and standard deviation (SD) were used to describe participants' characteristics. To compare the mean total satisfaction score between two-group and three-group variables, independent t-test and ANOVA were used. Finally, the predictors of satisfaction with healthcare service were examined using a multiple linear regression analysis.

3. RESULTS AND DISCUSSION

3.1 Results

A total of 571 completed questionnaires out of 750 were returned and analyzed (response rate = 76%). The mean age of participants was 34.7 (SD 13.6 years) and most of them (53.6%) were females. Data on respondents' demographics are presented in Table 1.

Table 1. Sample demographics (n=571)

Variable	Frequency (%)
Gender	
Male	265 (46.4)
Female	306 (53.6)
Living region	
Middle	227 (39.8)
Northern	224 (39.2)
Southern	120 (21.0)
Education level	
Secondary and below	128 (22.4)
Diploma	73 (12.8)
Bachelors	323 (56.6)
Masters or PhD	47 (63.5)
The used healthcare Sector	
Ministry of Health	319 (55.9)
Royal Medical Services	138 (24.2)
University Hospital	48 (8.4)
Private Healthcare	66 (11.6)
Visit Frequency	
Regular	311 (54.5)
Intermittent	260 (45.5)
Visit type	
Inpatient	151 (26.4)
Outpatient	420 (73.6)

3.1.1 Satisfaction ratings

The results show that most of the participants (58.8%) were not satisfied with the healthcare services provided. The mean total satisfaction score was low at 159.6 (SD 54.9) out of the maximum 300. Ratings for each variables of the satisfaction questionnaire are presented in Table 2. As shown in Table 2, participants were largely dissatisfied with the following: the practice of meeting and discussing their healthcare status with the family (Mean= 4.49 SD 3.0), the information about possible side effects (Mean= 4.56 SD 2.8), information provision including family in direct-patient care process (Mean= 4.65 SD 2.9), communication with administrative workers (Mean= 4.93 SD 2.7), and the time they given to them by the physicians (Mean= 4.98 SD 2.8). On the other hand, participants were moderately satisfied with the availability of nurses (Mean= 6.01 SD 2.8), medical apparatus (Mean= 5.68 SD 2.6), and the referral process (Mean= 5.7 SD 2.8). Overall, all the variables in the questionnaire received a satisfaction score ≤ 6 .

3.1.2 Association between total satisfaction score and participants' characteristics

The comparisons of mean total satisfaction score and gender, education level, visit type (in- or out-patient), and visit frequency (regular or intermittent) were significant ($P < .05$) (see Table 3). The results of unpaired t-tests show that that less educated participants (low: diploma or less; and high: bachelor or more), who were treated as in-patients, and who visited healthcare settings intermittently, had significantly higher mean satisfaction scores (see Table 3). However, there was no significant difference in the mean satisfaction score in regard to participants' gender ($P > .05$).

In regard to the variables with three categories or more, ANOVA tests showed a significant difference in the mean total satisfaction score ($P < .05$) in regard to participants' geographic region ($F(2, 568) = 12.8, P = <.001$) and the type of healthcare service providers ($F(3, 567) = 22.6, P = <.001$). Post-hoc analysis showed that participants living in the southern and northern regions had significantly lower mean scores for satisfaction than participants from the central region ($P < .001$); to avoid inflating type1 error, the P value divided on the number of conducted post-hoc t-tests. Further, the private sector got significantly higher total mean satisfaction scores than other healthcare service providers, followed by university hospitals.

Table 2. Participants' satisfaction mean score of the questionnaire variables

Variables	Minimum	Maximum	Mean (SD)
The Nursing Care	0	10	5.68 (2.44)
Pain reduction and management	0	10	5.67(2.4)
Information provided to you about side effects	0	10	4.56(2.8)
Referral to specialized physician	0	10	5.70(2.8)
Information provided about your health status and prognosis	0	10	5.58(2.7)
Availability of beds	0	10	5.42(2.8)
Meeting and discussing your health status with family	0	10	4.49(3.0)
Speed with which your symptoms were treated	0	10	5.05(2.7)
Physicians attention to your description of the symptoms	0	10	5.25(2.6)
The way with which tests and treatment were performed	0	10	5.44(2.6)
Availability of physicians	0	10	5.55(2.7)
Availability of Nurses	0	10	6.01(2.5)
Coordination of your medical care	0	10	5.27(2.6)
Time needed to make diagnosis	0	10	4.88(2.6)
Information provided about how to manage your pain	0	10	5.18(2.7)
Information given to family and including them in your care	0	10	4.65(2.9)
Information given to you about Lab tests and treatment	0	10	5.06(2.6)
How thoroughly the physician assessed your symptoms	0	10	5.63(2.7)
The way your tests and treatment followed-up by your physician	0	10	5.55(2.7)
Availability of medical equipment and machines	0	10	5.68(2.6)
Communication with healthcare workers	0	10	5.52(2.7)
Communication with administrative workers	0	10	4.93(2.7)
Institution infrastructure	0	10	5.23(2.8)
Commitment to the appointments	0	10	5.26(2.9)
Time designated to you by the physician	0	10	4.98(2.8)
Healthcare institution tidiness	0	10	5.40(2.9)
Cost of medical care	0	10	5.70(2.8)
Availability of medications	0	10	5.54(2.6)
Quality of internal pharmacy services	0	10	5.52(2.7)
Easiness of administrative process (e.g. admission, discharge)	0	10	5.16(2.8)
Total score	0	291	159.64(54.9)

Table 3. Independent t-test results analysing the difference in mean total satisfaction score between two groups

Variable	t	df	p	95% CI of the difference	Mean (SD)
Gender	-0.17	569	.860	-9.88 to 8.25	
Male					159.2 (51.9)
Female					160.0 (58.3)
Education level	4.0	567	<.001	9.93 to 28.64	
Low (Diploma or less)					172.2 (54.4)
High (Bachelor or above)					152.9 (54.2)
Visit type	-2.31	569	.021	- 22.2 to -1.80	
Outpatient					156.4 (54.2)
Inpatient					168.4 (56.1)
Visit frequency	3.94	569	<.001	9.04 to 26.96	
Regular					151.4 (53.2)
Intermittent					169.4 (55.1)

3.1.3 Determinants of public satisfaction with healthcare services

To identify the factors that predict public satisfaction with healthcare services, multiple linear regression analysis was conducted with the total satisfaction score as the outcome variable (see Table 4). Education level, participant’s geographic region, visit frequency, and type of healthcare service provider significantly affect patients’ satisfaction with the quality of healthcare. Participants who were more educated lived in the southern region, and regularly visited healthcare settings reported lower (not satisfied) satisfaction scores. The results also revealed that being a client in the private sector, university hospital or Royal Medical Services could predict a better satisfaction score when compared to Ministry of Health patients (reference value). In addition, adequate nursing care, pain management, information provision, kind communication with patients and institution tidiness predicted better satisfaction scores (see Table 4). However, age, gender and visit type were not found to significantly predict the total satisfaction score ($P > 0.5$). Each of these variables was entered separately into the regression model and they exerted no effect on the fitted model (B, Beta, and P values slightly changed). The adjusted $R^2 = 0.78$, this means that 78% of the variance in the satisfaction score explained by the factors included in this model.

3.2 Discussion

The results of the current study demonstrated that, overall, more than half (58.8%) of the

participated Jordanians were not satisfied with the healthcare services provided. The mean total satisfaction score was low, consistent with the results of studies conducted in middle- and low-income countries [5,11,13]. However, higher levels of satisfaction with healthcare services were found in rich countries such as Germany [7], Qatar [10], Malaysia [4], Cyprus [3], United States and 12 European countries [14]. Most of these studies used a non-random sampling technique, self-reported questionnaire, relatively small sample size and non-validated satisfaction measurement tools which might compromise the conclusion to the larger population. However, the results of this study can be explained by the fact that countries like Jordan with economic difficulties have very limited financial resources available to establish and support high-quality healthcare services. For example, poor and low-income countries may not enjoy the availability of drugs in medical settings, and have no resources to maintain low-cost, easily accessible and high-quality care. In this context, a systematic literature review was conducted to examine and evaluate any difference in the quality of care and patient satisfaction between the public and private sectors in low- and middle-income countries [13]. It was a comprehensive and well-conducted review. Although the private sector did better than public sector in regard to drug supply and responsiveness, there was no significant difference in regard to patient satisfaction with healthcare services. Also, it was concluded that the quality of the care provided was poor in both sectors, consistent with the results of this study [13]. To improve patient satisfaction, implementing the concept of healthcare quality aims to provide excellent,

Table 4. Multiple linear regression analysis of the factors influencing public satisfaction with healthcare services

	B	Std. error	Beta	P	95.0% CI for B	
(Constant)	79.85	3.21		<.001	73.53	86.17
Education level	-4.93	2.37	-.043	.038	-9.59	-.26
Visits Frequency	-5.40	2.28	-.049	.018	-9.88	-.92
Treated in Royal medical services hospitals	8.45	2.69	.066	.002	3.16	13.73
Treated in University Hospital	12.47	4.07	.063	.002	4.46	20.48
Treated in Private Hospital	19.59	3.65	.114	<.001	12.42	26.77
Adequate Nursing care	12.51	2.80	.110	<.001	7.00	18.01
Adequate Pain Management	21.44	2.77	.188	<.001	16.00	26.88
Information provision	23.85	2.78	.211	<.001	18.39	29.32
Communication with staff	16.86	3.06	.150	<.001	10.85	22.87
Institution infrastructure and tidiness	21.32	2.71	.193	<.001	15.98	26.66
Care cost	17.24	2.40	.153	<.001	12.52	21.95
R² = 0.78						

standardized, and high-performance services through applying medical science and technology to achieve the best possible quality of care without increasing risks [13]. Previous studies found a positive impact and improvement in patient satisfaction in settings where the healthcare quality standards were applied [12, 15].

With regard to the determinants of satisfaction with healthcare services, the results of the current study showed that being more educated and a regular visitor to the healthcare setting predicts a low mean satisfaction score. This might be because more educated people are aware of their rights as a patient and demand high-quality care if they are to be satisfied. In addition, patients who regularly visit the healthcare institution usually deal with too many different types of staff (administrative and medical) with different personalities, and a considerable number of departments over a long period. This may downgrade their satisfaction rating and make them a difficult to satisfy cohort.

On the other hand, being treated in any hospital other than a government hospital, the variables perceiving certain factors as adequate predicted better total satisfaction scores. These factors include: pain management, nursing care, information provision, communication skills, and care cost. Thus, it is recommended that hospital staff should be aware of these determinants and consider them in enriching their daily clinical practice. For example, it is reported that patients frequently receive inadequate pain management [16], so improving pain management practice through training the healthcare providers (i.e. physicians and nurses) would increase patients' satisfaction with healthcare. Also, recent studies recommended introducing advanced nursing roles such as Clinical Nurse Specialist and Nurse Practitioner into clinical practice, as this was found to enhance the quality of the provided care and increase patient satisfaction, while maintaining low-cost services [17-19]. This intervention was tested in one setting, on group of patients visiting primary healthcare center and used convenience sampling technique. Thus, replicating such study with a robust methodology (i.e. clinical randomized trail) is recommended.

Communication was one of the vital factors found to contribute to patient satisfaction [12]. Communication includes information provision about the disease, diagnostic tests, treatment options and their pros and cos. In this context, a

recent study conducted to examine cancer patients' information needs in Jordan found that they demanded information about their disease from healthcare providers, and were not satisfied with the amount and quality of the information they were currently given [20]. The results of previous work [21-22] found that friendly and adequate communication increased patients' satisfaction, agreeing with our study. Therefore, it is recommended that a communication skills workshop be included in the medical institution's general orientation programmes for employees. Also, regular education sessions on communication are needed. Developing and implementing an information provision policy is highly recommended.

Perceiving care cost as adequate was found to predict better satisfaction and this result was consistent with previous reports [10,23]. However, patients were not satisfied with the quality of care provided by Ministry of Health hospitals, even though theirs was the lowest cost. This can be explained as in this study patients were asked to categorize their perception of the cost as adequate or not adequate. It seems that if patients were given good-quality care, they would perceive the cost as adequate whether it was expensive or not. Prospective researchers are recommended to take this into consideration when exploring determinants of patient satisfaction with the quality of care.

There are limitations that need to be acknowledged. First, this survey represents the opinions of patients who participated in the study; non-respondents may have different opinions. Second, for practical reasons random sampling was not possible, and hence the generalizability of the results might be compromised. Third, because of the variation in satisfaction measurement tools, we developed our own tool; it was not systematically validated, which may threaten the internal and external validity of our results. Thus, a prospective study to test and evaluate psychometric characteristics is highly recommended. Finally, the variation in measurements used limited our ability to compare and discuss the results of the current study in the light of regional and international studies.

4. CONCLUSIONS

It is evident that higher proportion Jordanian patients were not satisfied with the healthcare

services provided. The determinants of patients' satisfaction were not completely dependent on the actual medical or nursing care. Thus, our results are of importance at both clinical and policy-making levels, and nationally and internationally. First, healthcare providers should be aware and well-oriented to the factors that can affect patient satisfaction. Positive factors should be enhanced and negative factors minimized or reduced. Second, policy makers should take these determinants into consideration when developing hospital policy in general and quality of care-related policy in particular. Also, the identified determinants of patient satisfaction should inform satisfaction indicators when developing satisfaction measurement tools, whether in clinical or research settings. Measuring patient satisfaction should be a routine practice in healthcare settings. Finally, friendly communication with patients seems to be a standard requirement for healthcare practice and a value to aim for.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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