Healthcare workers satisfaction and patient satisfaction – where is the linkage?

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Abstract

Background: This study aims to assess at what level healthcare worker satisfaction affects patient satisfaction, as well as which elements of healthcare worker satisfaction affect health service quality and patient satisfaction.

Methods: Data was collected via questionnaire-based surveys, from 18,642 healthcare workers and 9,283 patients across 50 secondary healthcare institutions in Serbia. Data analysis was based on descriptive statistics, correlations and the I[2]-distance method.

Results: Despite the general belief that healthcare worker satisfaction has a significant impact on patient satisfaction, the research results show that the correlation factor between these two is relatively low. Despite this, the obtained value of correlation cannot be neglected, therefore it can only corroborate the fact that healthcare worker satisfaction does impact patient satisfaction. The results of the study show that the satisfaction of healthcare workers with the time they have to accomplish their assigned tasks has the greatest effect upon patient satisfaction.

Conclusion: By understanding the importance of certain elements of healthcare worker satisfaction and its effects on patient satisfaction, it is possible to make decisions about factors that need to be improved in order to raise patient satisfaction to the highest possible level. These research results are significant for the management of health care institutions and responsible state institutions which create policy and strategy for improving the quality of health care services. Hippokratia 2013, 17, 2: 157-162

Introduction

At present, hospitals not only have to contend with the dynamics of regulation and market forces but most importantly they have to deal with the issue of service quality[1]. Consumers (patients) expect more and more of healthcare providers and demand higher and higher standards of care and service[2]. Patient satisfaction has become a frequently used outcome measure of the quality of healthcare delivery. In that sense, satisfaction represents a positive appraisal of provided healthcare with respect to the client's goals and expectations[3]. Discussions on how the quality of health care should be measured include patient satisfaction as one of the important dimensions[4].

On the other hand, healthcare worker job satisfaction is a very important parameter that influences productivity as well as quality of work[5]. This complex phenomenon is an attitude towards one's job that has an impact not only on motivation, but also on career, health and relations with co-workers[6-7]. Healthcare worker job satisfaction has a great impact on quality, effectiveness, and commitment to work and at the same time on healthcare costs[8-9]. Many

different studies have shown that there is a great number of factors which can have an impact on healthcare worker job satisfaction, such as: gender, age, level of education, work experience, the way in which work is organized, working conditions, and many others[10-14].

This study researches the impact of healthcare worker satisfaction on patient satisfaction. Furthermore, the aim of the study is to assess which are the parameters with both the greatest impact on healthcare worker job satisfaction and on patient satisfaction with services. Defining these relations and factors affecting the quality of work and services will create a basis for the management of important factors which affect both: healthcare worker satisfaction and patient satisfaction too.

Methods

Data collection

Data was collected via two cross-sectional studies. The first study surveyed the job satisfaction of Serbian healthcare workers (physicians and nurses) working in

public health facilities. The second study was conducted with the aim of assessing patient satisfaction with health care services in public health facilities in Serbia.

The cross-sectional survey about job satisfaction of Serbian healthcare workers in secondary care institutions was conducted in 50 institutions in Serbia, among all employees who were present at work on 12 December, 2011[15]. The questionnaires used in this survey were part of the guidance proposed by the Ministry of Health and the Institute of Public Health of Serbia.

The second cross-sectional survey, investigating patient satisfaction with health care services in public hospitals in Serbia, was conducted during the period from 5-9 December, 2011 in secondary care institutions. This survey used questionnaires proposed by the WHO that assess availability, use, coordination and comprehensiveness of health care in the 2009 survey[16].

We examined the data from both surveys, for the same institutions: general hospitals, clinical centers and hospital clinical centers (number of institutions N=50), with the aim of evaluating the relationship between healthcare worker job satisfaction and patient satisfaction with health services.

The questionnaire about patient satisfaction with healthcare services in public hospitals in Serbia, in addition to general questions (gender, age, level of education and financial status), included questions about the level of satisfaction with hospital procedures and regulations and nursing, physician and other services in hospitals. Five response levels were offered (from highly satisfied to highly dissatisfied) for all of the questions concerning the level of satisfaction.

The questions used to determine patient satisfaction were as follows:

1. To what extent are you satisfied with the courtesy of healthcare workers during admission to or discharge from hospital?
2. To what extent are you satisfied with your nursing care during your stay in hospital?
3. To what extent are you satisfied with the results of your medical treatment during your stay in hospital?
4. To what extent are you satisfied with the services provided by physicians during your stay in hospital?
5. To what extent are you satisfied with diagnosis and therapy services during your stay in hospital?

The questionnaire about healthcare worker job satisfaction included questions about professional and financial satisfaction, and satisfaction with interpersonal relations in the workplace. There were five possible answers, graded on a scale from 1 to 5.

The questions used to determine healthcare worker satisfaction were as follows:

To what extent are you satisfied with:

1. the adequacy of the equipment needed for work in the department?
2. interpersonal relations?
3. the opportunities for professional improvement at your current place of work?
4. the time available for accomplishment of your tasks?

5. your salary?
6. opportunities for continuous professional education?
7. the clarity of the instructions you receive regarding the expectations you need to meet at your workplace?

Good internal consistency defined by Cronbach's alpha coefficient=0.829 has been determined for the 5 variables from the questionnaire about patient satisfaction with health services in secondary care institutions. For the 7 variables from the questionnaire about job satisfaction in health care delivery workers, Cronbach's alpha coefficient =0.856 revealed good internal consistency[17].

Data analysis

I^2-distance is a metric distance in an n-dimensional space[18]. This method has been proposed and defined in various publications that have appeared since 1963 by B. Ivanovic. Ivanovic created this method to rank countries according to their level of development on the basis of several indicators. Many socio-economic development indicators have been considered in the use of this method and the problem has been how to use all of them in order to calculate a single synthetic indicator which will represent a rank[19].

A key argument for applying the I^2-distance method is that this approach is capable of synthesizing a number of variables into one numerical value. This I^2-distance method has proven useful in overcoming differences in measures[20-26].

In order to rank 50 secondary health care institutions in 29 districts in Serbia, the I^2-distance method was used and statistical analysis conducted using SPSS software (version 20, IBM SPSS Inc, Chicago, IL, USA).

The assessment of the relationship between healthcare worker and patient satisfaction was carried out via the following steps:

- application of the I^2-distance method to the seven variables of healthcare worker satisfaction and ranking of secondary care institutions based on these results (18,642 healthcare workers completed the questionnaire).
- application of the I^2-distance method to the five variables of patient satisfaction and ranking of secondary care institutions based on these results (9,283 patients completed the questionnaire).
- the method of linear correlation was applied in order to determine the relationship between these rankings.

Defining, monitoring and improving the quality of a healthcare service is a complex task. The large number of users of the service, with their broad and varied needs, which depend on their geographical location, age, gender, race, economic status, etc, all have to be taken into account. Healthcare organizations must continually improve their services in order to provide the highest quality at the most favorable cost. Pressures to increase the quality and decrease the cost of healthcare come from accreditation boards, the media, and from comparisons with other facilities. The existing quality of healthcare

must be examined and improved. Improved quality inherently lowers costs as it gives rise to better services. Quality is without doubt one of the essential elements of these services. Poor healthcare quality is costly; it leads to loss of lives, loss of time, and loss of public confidence, low staff morale and also results in wastage of our limited resources[27].

The literature on the quality of care in health systems is very extensive and at the same time difficult to systematize. Depending on the disciplinary paradigm, quality can be understood in diverse ways, using different terms, labels and models. A large number of authors and institutions have been involved in defining and measuring the quality of health care patient satisfaction[28-37].

Based on the above, the conclusion can be drawn that a large number of authors have studied the quality of health care services and factors that affect patient satisfaction. However, comparatively few authors have analyzed the impact of healthcare worker satisfaction on patient satisfaction, leaving something of a gap in the scientific results. This research needs to provide answers to several essential questions:

1. Do satisfied healthcare workers (physicians and nurses) contribute to patient satisfaction?
2. Can patient satisfaction be achieved when employees are dissatisfied?
3. Which are the criteria that most affect the ranking of institutions in terms of employee and patient satisfaction?

Results and discussion

Out of 9,283 patients, 3,984 (42.9%) were male, and 5,101 (54.9%) were female, while 198 respondents (2.1%) did not state their gender. Regarding education level, results showed that 844 respondents (9.1%) had not completed elementary school education, 2,257 (24.3%) had completed only elementary school, 4,485 respondents (48.3%) were secondary school graduates, while 1,569 (16.9%) had graduated from college or university. 128 (1.4%) respondents did not answer the question about their education. Regarding the financial situation of the observed patients' households, 295 (3.2%) were found to be in an extremely poor financial situation, 872 (9.4%) were found to be in a slightly better, however still poor financial situation and 4,498 (48.5%) of them could be qualified as patients with average financial means. The financial situation of 3,074 (33.1%) was fairly good, while 398 (4.3%) were in a very good financial situation and 146 (1.6%) of respondents did not answer this question. Regarding patient age, 8,793 (94.7%) answered this question, which allowed us to calculate that the average age of all the patients was 52.9. The respondents ranged between 15 and 96 years of age.

All the institutions were ranked according to the criteria given in the questionnaires for determining employee satisfaction and patient satisfaction, applying the I^2-distance method. Each institution was assigned a defined pair (x,y), $x \in (1,50)$, $y \in (1,50)$, where x indicated the rank determined from the questions about employee satisfaction contained in the questionnaire, while y indicated the rank determined from the questions about patient satisfaction contained in the same questionnaire. A conclusion about the existence of correlation between the satisfaction of employees and the satisfaction of patients can be drawn on the basis of simple analysis and determination of the correlation between x and y, i.e. of the existence of the $y=f(x)$ function.

Table 1 shows the values of I^2-distance that denote the degree of employee satisfaction as well as the values of this distance in regard to patient satisfaction. On the basis of these values, a rank is awarded to each health care institution under consideration. In ideal conditions, presuming that patient satisfaction depended fully on healthcare workers' satisfaction, the values for rank difference would be zero. This means that institutions ranked at the top in terms of employee satisfaction should be ranked top in terms of patient satisfaction as well. However, as the following table shows, this is not the case (Table 1 shows only the top ten ranked institutions as an example).

The results of the I^2-distance analysis indicated that there is a low but statistically significant correlation (r=0.351;

Table 1: Health care institution rank based on the I^2-distance value of healthcare workers and patients.

Hospital #	I^2-distance Healthcare workers	Rank Healthcare workers	I^2-distance Patient	Rank Patient	Rank difference
Hospital 1.	49.02	1	31.27	5	-4
Hospital 2.	47.195	2	33.12	4	-2
Hospital 3.	25.818	3	22.93	14	-11
Hospital 4.	24.1	4	20.6	19	-15
Hospital 5.	21.693	5	18.8	21	-16
Hospital 6.	17.485	6	6.26	45	-39
Hospital 7.	16.337	7	30.39	6	1
Hospital 8.	15.612	8	1	49	-41
Hospital 9.	15.221	9	10.68	35	-26
Hospital 10.	12.244	10	25.52	10	0

p=0.012) between employee satisfaction and patient satisfaction. The cause of such low correlation can be found in the phenomenon that certain health care institutions are rather differently ranked depending on the degree of employee satisfaction and the degree of patient satisfaction. For example, the institution ranked 30th in terms of employee satisfaction is ranked first in terms of patient satisfaction, whereas the institution ranked 50th in terms of employee satisfaction is ranked 26th in terms of patient satisfaction.

The correlation between healthcare worker satisfaction indicators and the value of I^2-distance for healthcare workers was analyzed, as well as the correlation between the indicators of patient satisfaction and the I^2-distance value for patients. The indicators having the highest level of correlation with their distances are the indicators having the greatest impact on the measured level of satisfaction. Results are presented in Tables 2 and 3.

Furthermore, results showed that the institution's rank is mostly affected by patient opinion of nursing services and the services of its physicians ($r=0.935$; $p<0.01$).

On the other hand, as regards the institution's rank based on employee satisfaction, the results demonstrate that this rank is mostly affected by employee opinion regarding their receiving clear instructions about the expectations they need to meet at their workplace ($r=0.948$; $p<0.01$), the opportunities for professional development at their current workplace ($r=0.888$; $p<0.01$) and interpersonal relations ($r=0.876$; $p<0.01$).

In the final phase of the research, mutual influence of employee satisfaction indicators and patient satisfaction indicators was analyzed. Statistically significant correlations are presented in Table 4. Since it has been proven that there was a low degree of correlation between employee satisfaction and patient satisfaction, it was expected that there would be a low degree of correlation between the indicators of employee satisfaction and the indicators of patient satisfaction. The analysis of correlation has shown that there is a slight but statistically significant correlation between healthcare worker satisfaction with the time available to them to accomplish their tasks and patient satisfaction with the results of treatment and their general satisfaction with services provided by the physicians. Significant correlation coefficients are shown in the table below.

A large number of studies have shown that doctor's available time is a significant factor impacting patient

Table 2: The correlation between the I^2-distance and the initial input indicators for patient satisfaction.

Indicator	I^2-distance
General satisfaction regarding nursing care	0.935**
General satisfaction regarding physicians' services	0.899**
Satisfaction regarding results of medical treatment	0.851**
Satisfaction regarding courtesy of healthcare workers	0.850**
General satisfaction regarding diagnostics services during the hospital stay	0.778**

** $p< 0.01$

Table 3: The correlation between the I^2-distance and the initial input indicators for healthcare worker satisfaction.

Indicator	I^2-distance
Satisfaction withhaving received clear instructions on the expectations they need to meet at their workplace	0.948**
Satisfaction with opportunities for professional development at their current workplace	0.888**
Satisfaction withinterpersonal relations	0.876**
Satisfaction with salary	0.839**
Satisfaction with adequacy of work equipment	0.834**
Satisfaction with time for accomplishment of tasks	0.782**
Satisfaction with opportunities offered for continuous education	0.754**

** $p< 0.01$

Table 4: Most important correlations between employee satisfaction indicators and patient satisfaction indicators.

		Satisfaction with results of medical treatment	General satisfaction with services of physicians
Satisfaction with time available for accomplishment of task	Pearson Correlation	0.370	0.388
	p	0.008	0.005

satisfaction with healthcare services. In a study involving 1,314 adult patients of both genders who were users of healthcare services at the General Medicine Department of the Valjevo Health Centre in Serbia, items related to the time that the personal general practitioner devoted to patients were key in generating contextual dissatisfaction in patients[38]. Gabott and Hogg also reported six factors that affect consumer satisfaction, including responsiveness (time spent with physician)[39]. Alhashem, Alquraini and Chowdhury conducted a study in order to identify factors affecting patient satisfaction at primary health care clinics[40]. Questionnaires were distributed in primary healthcare clinics representing all health care regions in Kuwait. The majority (87%) of patients responded that the time for communication between physician and patient was not sufficient. One study aimed to identify which attributes of the primary healthcare experience have the most impact on patient satisfaction as well as which aspects of each attribute are most significant in patients' response to the services they receive[41]. One of the most influential attributes was "length of time spent with the doctor or physician assistant". This influential aspect implied that within the timeframe of the visit, the doctor did everything for the patient that was needed and that the patient had time to ask questions and express concerns; thus, the patient would be led to believe that the diagnosis and treatment must be correct. This aspect of care should receive careful attention in efforts to improve patient satisfaction.

Conclusion

The results presented have shown that, based on the I²-distance method, most significant for patient satisfaction is employee satisfaction with the time available to accomplish their tasks. Therefore, this indicator should be improved in order to achieve greater patient satisfaction. Recently, the standardization of the work of physicians and salaries based on the number of examinations performed has been introduced in health care institutions in Serbia. The results of this research show this practice to be wrong. Indeed, the longer the time available to accomplish tasks, the greater the patient satisfaction. This is not compatible with the standardization of the time allowedto perform examinations.

On the basis of the study results, it is evident that employee satisfaction with,for example, salaries, has almost no impact on patient satisfaction. This aligns with the basic principle that healthcare quality management should always place care for human beings first, and that salary, costs and efficiency should come second. The best results can be achieved by increasing the time available to accomplish tasks in order to improve the quality of life of the population. It is a moral obligation,going hand in hand with the commitment of healthcare workers to serve humanity to the best of their ability and judgment, regardless of salary, their satisfaction with interpersonal relations, satisfaction with professional development opportunities, satisfaction with educational opportunities or

satisfaction in having received clear instructions about the expectations they have to meet at their workplace. The results of the research could be significant for further research to determine other important factors affecting patient satisfaction, in addition to the factors analyzed in this study. Identification of the factors affecting the quality of health care services should serve as the basis for their management.

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