ORIGINAL ARTICLE / ОРИГИНАЛНИ РАД

Factors affecting patient satisfaction in the health care sector in Serbia

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SUMMARY
Introduction/Objective The aim of this paper was to highlight and understand factors that influence the quality of healthcare services in Serbia in private and public health institutions.
Methods The data was collected during May of 2017 and June of 2017 through an on-field questionnaire. Out of 500 questionnaires in total, 406 were completed and returned, resulting in a response rate of 81.2%.
Results The following four most influential factors for patient satisfaction in Serbia's healthcare sector were identified: admission process, doctor care, staff care, and technology tools.
Conclusion The model describes that 66.2 variance for the doctor care variable is based on three constructs: admission process, technology tools, and staff care. The hypothesis that technology tools will have a positive effect on staff care was not confirmed.
Keywords: patient satisfaction, factors; health care; Serbia

INTRODUCTION

Patient satisfaction is a way to measure the overall quality of delivered healthcare services. Understanding patients as clients and taking care of their needs is crucial for improvement of the healthcare sector in Serbia. A research study by Savić and Jakovljević [1] also confirms that a patient perspective is important for clinical decision making in Serbia. The main responsibility for defining and executing the patient satisfaction strategy is borne by health care managers. They constantly receive patient feedback about all aspects of health care, which affects customer retention and are in the position to adapt to dynamic market conditions. The healthcare sector in Serbia is comprised of the public and the private system for treating patients. The health system of Serbia employs some 130,000 workers. The largest number is employed in health institutions, primarily in the 70 state hospitals. There are approximately 1,200 private medical entities in Serbia, out of which 60 are hospitals. They employ over 3,700 doctors, accounting for about 10% of the total number of doctors in the health sector in Serbia [2]. In the past 30 years, the health system in Serbia has changed substantially. After the breakup of Yugoslavia in the 90s, all the weaknesses and strengths of the healthcare system of that time have become more visible. Knowledge of factors that influence patient satisfaction is of great importance for the system. The country has entered the period of transition, and the creators of healthcare policies have been forced to start reforming the healthcare system by addressing structural, human resources, financing, and organizational issues [3]. In a recent research study, health policy, socioeconomic transition, trends in healthcare resources, and outcomes were observed among three historical health-policy legacies in Southeastern Europe. Significant differences exist between Serbia as the representative of former Yugoslav countries, post-Semashko countries, and free market SEE economies [4].

In order to improve the healthcare system in Serbia, it is necessary to understand the opinion of patients as clients of healthcare services. However, previous research in this field has identified different factors for patient dissatisfaction. Authors from Brazil highlighted the main weaknesses as follows: lack of qualified professionals for exercising management activities, delay in implementing new information technologies and management and work organizational process deficiencies. The main reasons for dissatisfaction with the healthcare system in Serbia are similar to Brazil – unequal delivery of quality in different health services, waiting time for certain medical procedures and interventions, inefficient use of health technologies, and dissatisfaction of the healthcare system staff [5, 6]. Scholars point out that knowledge-based resource allocation still has to make roots in health policy traditions of BRICS and other emerging nations [7].

A recent study from Balkan countries including Macedonia, Bulgaria, and Serbia identified the top three indicators of patient satisfaction: trust, attention of doctors, and perceived outcome of the treatment. Long waiting time, huge administrative procedures and patient privacy protection are also issues for concern in all three countries [8].

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Patient quality perceptions have been shown to account for 17–27% of variation in a hospital's financial measures such as earnings, net revenue, and asset returns [9]. It is one of the most effective key performance indicators if healthcare institutions want to evaluate business success on the market. Today it is important to recognize the role of patient-centered care. According to Irwin and Richardson [10], patient-focused care can be thought of as a merging of patient education, self-care, and evidence-based models of medical practice: communication with patients, partnerships, health promotion, and physical care (medications and treatments). The main goal of each health care institution is to recognize the factors that will improve patient-centered care.

Various research studies, which investigated factors that affect patient satisfaction, were analyzed.

The first literature stream relevant for this study is general literature on patient satisfaction. Naidu [11] conducted a systematic review of factors determining health care quality and patient satisfaction with 24 articles from international journals. A comprehensive model was made to better understand healthcare services. Healthcare services are difficult to evaluate: some authors feel patient perceptions are valuable healthcare quality indicators, others contend that health service quality should be evaluated by experts. The SERVQUAL instrument is used in many patient satisfaction studies. Dimensions that determine patient satisfaction have been identified, including: reliability – the ability to perform the promised service, dependably and accurately; assurance – employee knowledge and courtesy and their ability to convey trust and confidence; responsiveness – willingness to help customers and provide prompt services; empathy – caring, individualized attention the firm provides to its customers; and tangibles – physical facilities, equipment and appearance of the personnel. Another study written by Batbaatar et al. [12] reviewed studies of patient satisfaction between 1980 and 2014. Socio-demographic and personal-related characteristics were analyzed in the review.

The second type of study investigated the use of technology in health care and its effect on patient satisfaction. A study from Bangladesh implies medical treatment of the hospital, service of the hospital staff, hospital facilities, and technology are factors that affect patient satisfaction [13]. The population aging trends in the Next-11 nations have led to increased health care expenditures [14]. On the other hand, the millennial generation for health providers is crucial for understanding what content needs to be available at patient portals on mobile devices.

However, a recent study concerning health service in Serbia suggested the most common determinants of citizen satisfaction with health care are age, health condition, income, type of service (state or private sector), communication, politeness of staff, and the overall hospital environment [15]. Student satisfaction with the quality of service provided by student polyclinics showed that personal relationships had the most tangible impact on student satisfaction while promptness of service was also important [16]. Additionally, health managers from Serbia focus their efforts on ensuring the competence of employees while managers from health care organizations from Slovenia are more external-oriented [17]. The analysis of previous literature revealed the need to develop a model for identifying the most important factors for patient satisfaction in Serbia and their relationships.

The aim of this study is to determine factors that influence patient satisfaction, as it is an indicator of quality health care in Serbia [18]. The findings should encourage a shift in the attitude and relations of hospital staff with patients towards a more client/consumer-oriented healthcare service. The main reason is that better customer satisfaction leads to better customer loyalty for healthcare institutions.

METHODS

The research framework

The research framework of this study was based on the study by Otani et al. [19], which includes five elements for defining the initial conceptual model: admission process, doctor care, staff care, food, and room in the hospital. This study's scope did not include food and room as the research aimed to evaluate patient perceptions before they have stayed in healthcare institutions. A research study of various large hospitals in the USA investigated the relationship of doctor care and doctor environment to overall patient satisfaction. The results showed that all attributes were statistically significant and positively related to overall satisfaction [20].

Several studies have already proved that courtesy and efficiency of admission processes in health provider institutions are significant for patient satisfaction and waiting times [21, 22, 23]. The admission processes in this study consist of three elements: promptness or efficiency of the admission or registration, courtesy and helpfulness of the admission or registration, and waiting time for medical treatment.

Staff care is another important factor for determination of patient satisfaction. It should be evaluated from two sides. Firstly, staff care is about the willingness to help patients if they have questions or concerns. Secondly, staff care is about providing clear and complete explanations about how patients should practice self-care at home. Again, the emphasis is about clear communication with patients.

In the health service sector, it is crucial to ensure availability of doctors when patients need them [24]. Communication with a doctor usually develops trust with the patient and promotes patients' desire to understand health treatment.

There are also some differences regarding patient satisfaction with healthcare providers based on age. Taking a look at the health habits of the millennial, baby-boomer, and X generations, health institutions can better understand how to provide personal relationships and integrate health IT tools into the care process to create the best

Table 1. Factors of the initial conceptual model

Construct	Construct type	Items (given on a 1 to 5 Likert scale)	Variable name
Admission process	Reflective	Promptness of the efficiency of the admission or registration	AP1
		Courtesy and helpfulness of the admission or registration	AP2
		Waiting time for medical treatment is short	AP3
Doctor (physician) care	Reflective	Availability of your doctor when needed	DC1
		Doctor ability to communicate with you	DC2
		Doctor ability to provide adequate instructions or explanation of your treatment or test	DC3
Staff care	Reflective	Staff willingness to help if you have question or concern	SC1
		Clear and complete explanation provided by the staff on how to care about yourself at home	SC2
Technology tools	Reflective	Healthcare institution ability to provide on line admission process	TT1
		Health care institution ability to provide online doctor advice	TT2
		Possibility to track health condition using mobile application	TT3

patient outcomes. A large portion of this study's sample were millennial patients (51%) and the main results from previous studies refer that they prefer a strong doctor connection, adequate time for discussion, and verbal communication of recommendations. Younger generations abroad have unique preferences when they discuss health technology (tele-health, mobile health applications). This is supported by a previous research study from Bangladesh, according to which technology in health care is one of the most important factors that affects patient satisfaction. Three items can describe construct technology including a connection with admission processes (healthcare institution's ability to provide online admission processes), a connection with doctors (healthcare institution's ability to provide online doctor advice), and tracking health conditions (the possibility to track health conditions using mobile applications), see Table 1.

The set of relationships is given in a form of hypotheses that our model is testing (Figure 1):

H1: The quality of the admission process will have a positive effect on doctor care;

H2: The technology tools will have a positive effect on the admission process;

H3: The staff care will have a positive effect on doctor care;

H4: The technology tools will have a positive effect on doctor care;

H5: The technology tools will have a positive effect on staff care.

Data collection and sample size

Data were collected with a structured on-field questionnaire from different hospitals located in Serbia. We covered all regions in Serbia including Vojvodina (102), Belgrade (126), Šumadija and Western Serbia (94), and Southern and Eastern Serbia (84). The data was collected during May of 2017 and June of 2017. Out of 500 questionnaires in total, 406 were completed and returned, resulting in a response rate of 81.2%. Distribution of the background characteristics of the patients are regarding gender – 45.32% (184) were males, while 54.67% (222) were females. The majority of patients were young. The
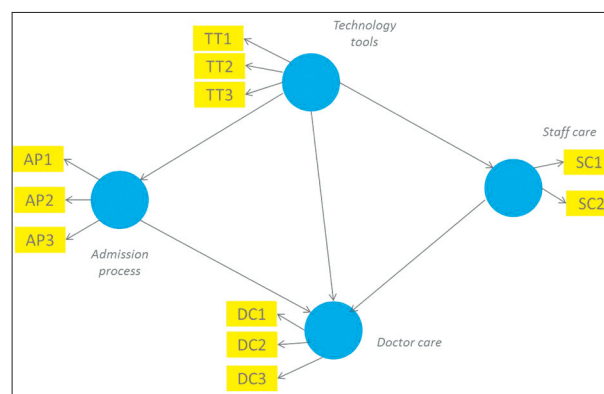
Figure 1. Initial theoretical research model

age groups of 18–29 years and 30–39 years comprised 51.23% (208) and 31.53% (128) of the total sample surveyed, respectively. Those 50 years old and above constituted only 17.24% (70) of the total sample. The responses for the patient satisfaction indicators were presented over the five-point Likert scale, ranging from highly unsatisfied to highly satisfied. After expiration of the surveying period and acquisition of the satisfactory number of completed surveys, the results were coded and entered into the IBM SPSS Statistics Version 22.0 (IBM Corp., Armonk, NY, USA). Following good practice, prior to data analysis, error screening and data cleaning were undertaken. After ensuring that there are no missing values or values that fall outside of defined ranges, data analysis proceeded. The following statistical tools were used: descriptive statistics (means, frequencies) for capturing average values on the examined issues, and factor analysis for analyzing patient perception of health care factors in choosing a healthcare institution.

Data analysis

The model was constructed and analyzed using the SmartPLS 3 (SmartPLS GmbH, Bönningstedt, Germany). SmartPLS 3 supports work with covariance-based structural equation models, and is particularly useful when working with small samples such as the sample evident in this study (n = 406). PLS analysis is a two-stage process [25].

Following the analytical procedures, the measurement model was examined first, followed by the structural model. The test of the measurement model includes an estimation of internal consistency (composite and indicator reliability), convergent validity, and discriminate validity. The second stage of PLS modelling is an assessment of the structural model. The rationale of this two-step approach is to ensure that the conclusion on structural relationships is drawn from a set of measurement instruments with suitable properties. PLS path modelling does not provide any global goodness-of-fit criterion.

RESULTS

The results of the final model based on the initial research model are presented in Figure 2. At the significant level of 5%, according to the results, the study found that the quality of the admission process was a significant factor and positively affects doctor care. In the second relationship, interaction with technological tools, patients report positively influenced admission process, and they want to book, track, and receive advice online about health care conditions. In the third relationship, the impacts of interaction with staff care, patients report that doctor care was statistically significant. Finally, in the fourth relationship, technology tools and doctor care, these significantly influenced patient satisfaction. The remaining hypothesis technology tools do not significantly affect staff care. The reason for this could align with age differences and the time to adapt to using technology in the healthcare system.
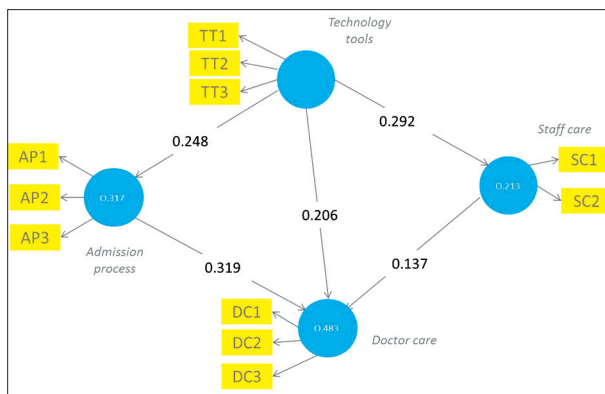

Figure 2. Model of factors affecting patient satisfaction

The model describes that 66.2 variance for the doctor care variable is based on three constructs: admission process (0.319), staff care (0.137), and technology tools (0.206). The first factor, admission process, emphasizes health process quality. It envelopes the following items: service is performed quickly; staff is willing to help patients with appointments; and staff tries to respond to patient requests. Score of latent variable doctor care is 4.20/5.00, which means that patients are mostly satisfied with doctor care.

In addition, the model explains that 42.9 variance for the staff care variable is based on two constructs: technology tools (0.292) and doctor care (0.137). Patients agree

that using modern technology tools with staff care may increase patients' satisfaction. For the older population, it is crucial for hospital staff to provide clear instructions about health treatment at home.

Additionally, 56.7 variance for the admission process variable is based on only one construct: technology tools (0.248). It will be important in the future to investigate what other factors can explain the constructs in the model. This study found that health service from early stages is a service aimed at building relationships with patients. On the other hand, services provided after the transaction is a service that will always be remembered by the patient.

DISCUSSION

Given all indicators discussed, the model has good performance given its parsimony. The findings showed that the four hypotheses are confirmed (see Table 2).

Table 2. Hypotheses testing results

Hypotheses	Decision
H_1: The quality of the admission process will have a positive effect on the doctor care	Confirmed at 1% confidence level
H_2: Technology tools will have a positive effect on the admission process	Confirmed at 1% confidence level
H_3: Staff care will have a positive effect on the doctor care	Confirmed at 1% confidence level
H_4: Technology tools will have a positive effect on the doctor care	Confirmed at 1% confidence level
H_5: Technology tools will have a positive effect on the staff care	Not confirmed

The research hypotheses were tested using the questionnaire survey responses from 406 patients from Serbia from public and private health institutions. The main finding of this research is that patient satisfaction is determined by different factors – professional (doctor) care and staff care. Also, two important factors are the admission process and technology tools for healthcare institutions.

The first hypothesis confirmed the quality of the admission process would have a positive effect on doctor care. Promptness of the efficiency of the admission or registration, courtesy and helpfulness of the admission or registration, and short waiting time for medical treatment are important factors that affect patient opinion and have strong correlation with doctor care: ability to communicate with patients and provide adequate instructions or explanation of patients' treatment or test. Similar results are also confirmed in a similar study undertaken in Japan [26]. Items that described process quality – the service speed and the quality of the patient–provider interaction – seem to be greatly valued by Japanese patients.

The research model also explains that technological tools have a positive effect on the doctor, staff, and admission process. This finding is similar to results from other studies, which showed using mobile apps for patient health needs improved satisfaction [27, 28]. Mobile devices and the use of health-related applications is growing rapidly in the USA and provides many benefits for health providers

– increased access to point-of-care tools, which has been shown to support better clinical decision-making and improved patient outcomes [29]. Diagnosaurus is an example of a popular low-cost mobile differential diagnosis app for patients, presented on iPhone, iPad, and iTouch [30]. The influence of technology on a doctor's role is also an important relationship for future investigation. Regardless of doctors' technical competence, their ability to deal with patients and influence their behaviour will depend more on their personality and attitude [31]. Leadership skills are playing an important role in doctor care development. Our results highlight the importance of developing more technology tools in the healthcare sector in Serbia and providing education for patients, doctors, and staff for using these tools. Furthermore, resource constraints are influencing the quality of medical care in the Eastern European region and the Balkans. It is necessary to develop better healthcare planning practice for a more systematic policy approach in the future [32].

The third hypothesis that staff care would have a positive effect on doctor care is confirmed. It is important for the staff to be willing to help with patient questions and concerns such as doctor availability. Additionally, a professional approach is important for developing patient trust.

CONCLUSION

Public and private healthcare providers need well-planned marketing strategies to strengthen health service quality that improves patient perceptions. Findings suggest that healthcare providers in Serbia should encourage their doctors to assign more time to their patients if they wish to improve overall satisfaction of their patients with the delivered services. Another important remark is that a marketing strategy should be adapted to different target populations. For the older population in Serbia, doctors should focus more on developing a personal relationship while for the younger generation they should use technological tools along with personal relationships.

This study has certain limitations. Further research on Serbian health system satisfaction would require extending the research population, composed of health service specialists, so that it would be representative of the whole country, by consulting healthcare managers and including additional variables in the research. It would seem, therefore, that further empirical research is needed in order to determine an adequate marketing strategy for the millennial generation in order to find the right balance between the use of technology and personal relationship development.

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Фактори који утичу на задовољство болесника у здравственом сектору у Србији

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САЖЕТАК

Увод/Циљ Циљ овог рада је да истакне факторе који утичу на квалитет здравствених услуга у приватним и јавним здравственим установама у Србији.

Методе Подаци су прикупљени маја и јуна 2017. године путем анкетног упитника. Укупно је примљено 406 попуњених упитника од 500, што је 81,2% одговора.

Резултати Идентификована су четири важна фактора која највише утичу на задовољство болесника у здравственом сектору у Србији: процес пријема, лекар, особље и технолошки алати.

Закључак Модел описује да је варијабла брига лекара од 66,2 базирана на процесу пријема, технолошким алатима и нези особља. Хипотеза да ће технолошки алати имати позитиван ефекат на бригу о особљу није потврђена.

Кључне речи: задовољство болесника, фактори; здравствена заштита; Србија