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Factors affecting patient satisfaction in the health care sector in Serbia
Фактори који утичу на задовољство пацијената у здравственом сектору у Србији

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SUMMARY

Introduction/Objective The aim of this paper was to highlight and understand factors that influence the quality of health care services in Serbia at private and public health institutions.

Method The data was collected during May 2017 and June 2017 through an on field questionnaire. A total of 406 completed questionnaires, out of 500, were returned resulting in a response rate of 81.2%.

Results The four most influential factors for patient satisfaction in Serbia's health care sector were identified. These include: admission process, doctor care, staff care and technology tools.

Conclusion The model describes that the 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; healthcare; Serbia

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., путем анкетног упитника. Укупно је примљено 406 попуњених упитника од 500, што је одговор од 81,2 %.

Резултати Идентификоване су четири важна фактора који највише утичу на задовољство пацијената у здравственом сектору у Србији: процес пријема, лекар, особље и технолошки алати.

Закључак Модел описује да варијабла брига лекара од 66.2 базирана је на на три конструкта: процесс пријема, технолошки алати и негу особља. Хипотеза да ће техношки алати имати позитиван ефекат на бригу о особљу, није потврђена.

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

INTRODUCTION

Patient satisfaction is a way to measure the overall quality of delivered health care services. Understanding patients as clients and taking care of their needs is crucial for improvement of the health care sector in Serbia. A research study from authors [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 health care sector in Serbia is comprised of the public and 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 falling apart of Yugoslavia in the 90s, all the weaknesses and strengths of the health system of that time have become more visible. Knowledge of factors that influence patient satisfaction is of great importance for the health system. The country has entered the period of transition, and the creators of health policies have been forced to start the reforming the health 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 South-eastern Europe. Significant differences exist between Serbia

as representative of former Yugoslav countries, post-Semashko countries and free market SEE economies [4].

In order to improve the health care system in Serbia, it is necessary to understand the opinion of patients as clients of health care 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 in the health care system in Serbia are similar to Brazil [5] unequal delivery of quality in different health services, waiting time for certain medical procedures and interventions, inefficient use of health technologies and dissatisfaction of health care system staff [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 the 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].

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 health care institutions want to evaluate business success on the market. Today it is important to recognize the role of patient-centered care. According to [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. Author [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 – the 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 [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 affect 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 to 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]. Analyzing previous literature revealed there is a need to develop a model to identify 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 [18] in Serbia. The findings should encourage a shift in the attitude and relations of hospital staff with patients towards a more client/consumer oriented health care service. The main reason is that better customer satisfaction leads to better customer loyalty for health care institutions.

METHODS

The research framework

The research framework of this study was based on the study by [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 health care 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 [21] that courtesy and efficiency of admission processes in health provider institutions are significant for patient satisfaction [22] and waiting times [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 wanting to understand health treatment.

There are also some differences regarding patient satisfaction with health care 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 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 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 that technology in health care is one of the most important factors that affects patient satisfaction. Three items can describe construct technology including: connection with admission processes (health care institution ability to provide online admission processes), connection with doctors (health care institution ability to provide online doctor advice) and tracking health conditions (possibility to track health conditions using mobile applications) (Table 1).

The set of relationships is given in a form of hypotheses that our model is testing:

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 about how to care about yourself at home	SC2
Technology tools	Reflective	Health care institution ability to provide on line admission process	TT1
		Health care institution ability to provide on line doctor advice	TT2
		Possibility to track health condition using mobile application	TT3

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,

Figure 1. Initial theoretical research model.
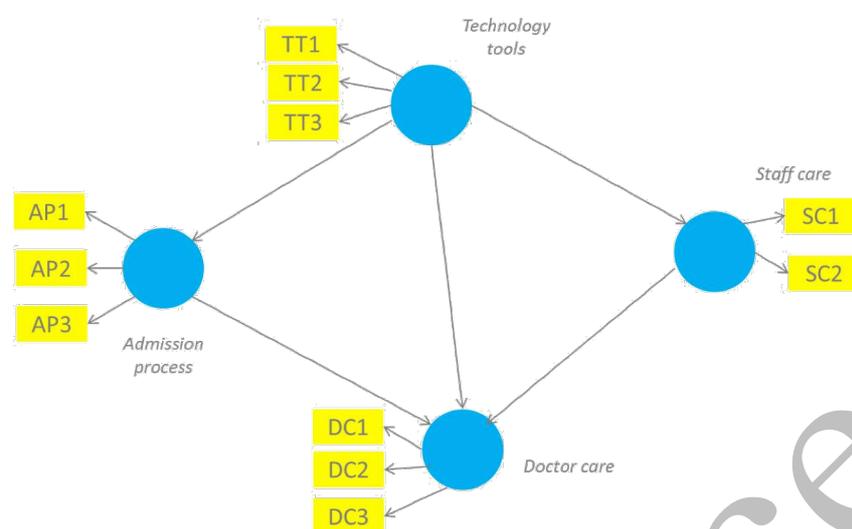
Data collection and sample size

Data were collected with a structured questionnaire on field from different hospitals located in Serbia. We covered all regions in Serbia including: Vojvodina (102), Belgrade (126), Sumadija with West Serbia (94) and South and East Serbia (84). The data was collected during May 2017 and June 2017. A total of 406 completed questionnaires, out of 500, were returned resulting in a response rate of 81.2 percent. Distribution of the background characteristics of the patients are regarding gender, 45.32 percent (184) were males, while 54.67 percent (222) were females. The majority of patients were young. The age groups of 18-29 and 30-39 comprised 51.23 percent (208) and 31.53 percent (128) of the total sample surveyed, respectively. Those 50 years old and above constituted only 17.24 percent (70) of the total sample. The responses for the patient satisfaction indicators were presented over five points Likert scale ranging from highly unsatisfied to highly satisfied. After expiration of the surveying period and acquisition of the satisfactory number of completed surveys, results were coded and inserted in the SPSS 22.0 software. Following good practice, prior to data analysis, error screening and data cleaning was 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 health care institution.

Data analysis

The model was constructed and analysed using the SmartPLS 3. 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 effects doctor care. In the second relationship, interaction with technological tools, patients report that positively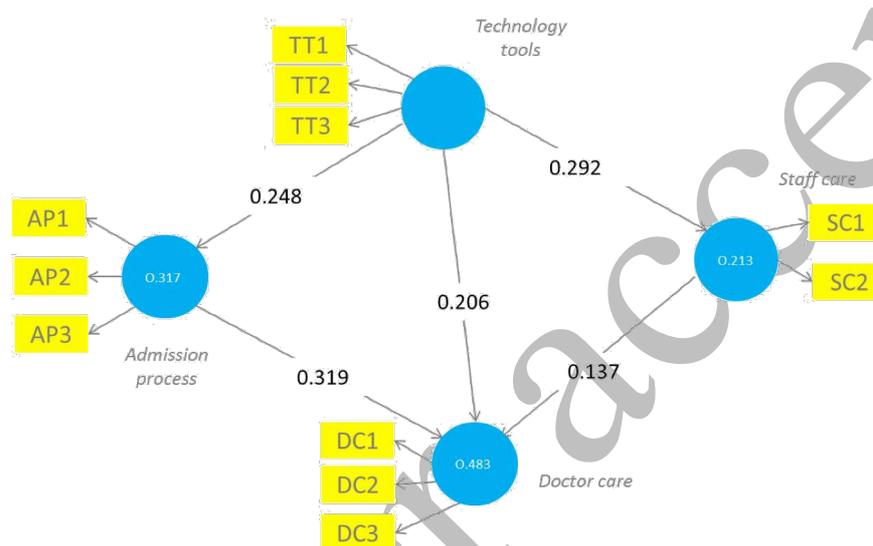 influenced admission process and they want to book, track and receive advice online about health care conditions. In the third relationship, the impacts of interaction with staff care, patients report that doctor care were statistically significant. Finally, in the fourth relationship, technology tools and doctor care, these significantly influ-

Figure 2. Model of factors affecting patient satisfaction.

enced 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 health care system.

The model describes that 66.2 variance for 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 emphasises health process quality. It encloses the items: service is performed quickly; staff are willing to help patients with appointments and staff try 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.

Also, the model explains that 42.9 variance for staff care variable is based on two constructs: technology tools (0.292) and doctor care (0.137). Patients agree 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 investigated a 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 (Table 2).

Table 2. Hypotheses testing results.

Hypotheses	Decision
H1: The quality of the admission process will have a positive effect on the doctor care.	Confirmed at 1% confidence level
H2: The technology tools will have a positive effect on the admission process.	Confirmed at 1% confidence level
H3: The staff care will have a positive effect on the doctor care.	Confirmed at 1% confidence level
H4: The technology tools will have a positive effect on the doctor care.	Confirmed at 1% confidence level
H5: The 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 findings 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 health care institutions.

The first hypothesis confirmed the quality of the admission process will 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 also 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 in Japan. Items that described process quality: the service speed and the quality of patient-provider interaction seem to be greatly valued by Japanese patients [26].

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 health applications usage is growing rapidly in the United States 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 one of the 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 a 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 health care 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 Eastern European and Balkans region. It is necessary to develop better healthcare planning practice for a more systematic policy approach in the future [32].

The third hypothesis is confirmed that staff care will have a positive effect on doctor care. It is important that staff are 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 mix technological tools with the personal relationship.

This study has certain limitations. Further research about Serbian health system satisfaction would require: extending the research population, comprised from health services specialists, so that it would be representative for 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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