



## The effect of moral foundations and personality dimensions of health workers on patient satisfaction with healthcare services

### Uticaj moralnih osnova i dimenzija ličnosti zdravstvenih radnika na zadovoljstvo bolesnika zdravstvenom uslugom

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#### Abstract

**Background/Aim.** Working with people in medical practice requires knowledge of the basic principles of personality psychology. The aim of this research was to examine the influence of moral foundations and personality dimensions of health workers on patient satisfaction with health service, as well as determining the factors influencing their satisfaction. **Methods.** The research was conducted using the Big Five Inventory (BFI), the Moral Foundations Questionnaire (MFQ) and the Questionnaire of patient satisfaction with healthcare service, from October 2014 to March 2016. The survey involved 693 respondents: 329 healthcare workers (44 males and 285 females) and 364 patients (154 males and 210 females). **Results.** With the increase of the openness of healthcare professionals, the patients' satisfaction was also growing. Regarding moral foundations of healthcare workers, there was an opposite trend – with lower authoritativeness of healthcare workers, patient

satisfaction was greater. Finally, with more pronounced purity of healthcare workers there was a decrease in the level of patients' satisfaction with the received healthcare service. **Conclusion.** There is a direct association between the moral foundations and personality dimensions of health workers, and patients' satisfaction with healthcare service. Thus, any strategy for improving the quality of healthcare service should take into account personal characteristics of healthcare workers. Healthcare professionals are expected to fulfill their life and professional tasks in as a human way as possible, since preservation of the health and helping to overcome an illness, in case it develops, are the basic values of every human being. It should result in more clearly defined priorities for improvement of the quality of work of healthcare workers.

**Key words:**  
health services; health personnel; morals; patient satisfaction; surveys and questionnaires.

#### Apstrakt

**Uvod/Cilj.** Rad sa ljudima u medicinskoj praksi zahteva poznavanje osnovnih principa psihologije ličnosti. Cilj ovog istraživanja je bio sagledavanje uticaja moralnih osnova i dimenzija ličnosti zdravstvenih radnika na zadovoljstvo bolesnika zdravstvenom uslugom, kao i utvrđivanje faktora koji utiču na to. **Metode.** Istraživanje je sprovedeno primenom upitnika *Big Five Inventory* (BFI), *Moral Foundations Questionnaire* (MFQ) kao i Upitnik zadovoljstva bolesnika zdravstvenom uslugom u periodu od oktobra 2014. do marta 2016. godine. U istraživanju je učestvovalo 693 ispitanika: 329 zdravstvenih radnika (44 muškog i 285 ženskog pola) i 364 bolesnika (154 muškog i 210 ženskog pola). **Rezultati.** Sa porastom otvorenosti zdravstvenih radnika raste i zadovoljstvo bolesnika. Posmatrajući moralne osnove zdravstvenih radnika, postoji trend da što je niža autoritativnost zdravstvenih radnika, zadovoljstvo bolesnika

je veće. Konačno, izraženija čistota morala kod zdravstvenih radnika, dovodi kod bolesnika do opadanja stepena zadovoljstva dobijenom zdravstvenom uslugom. **Zaključak.** Postoji direktna veza između moralnih osnova i dimenzija ličnosti zdravstvenih radnika i zadovoljstva bolesnika zdravstvenom uslugom. Stoga se, u okviru bilo koje strategije za unapređenje kvaliteta usluga u zdravstvenim sistemima, mora voditi računa o personalnim karakteristikama zdravstvenih radnika. Od zdravstvenih radnika se očekuje da na što humaniji način ispune svoj životni i profesionalni zadatak, jer je očuvanje zdravlja, kao i pomaganje u prevazilaženju bolesti, ukoliko do nje dođe, osnovna vrednost svakog čoveka. Time se mogu jasnije definisati prioriteti za poboljšanje i unapređenje kvaliteta rada zdravstvenih radnika

**Ključne reči:**  
zdravstvene ustanove; zdravstveno osoblje; moral; bolesnik, zadovoljstvo; ankete i upitnici.

## Introduction

Assessment of users' satisfaction is one of the basic elements of improving the quality of work of healthcare institutions and a prerequisite for a quality of health care<sup>1</sup>. In order to motivate health professionals for the targeted activities it is necessary to know the basic principles of motivation psychology and mechanisms for developing internal motivation, which should be acted on all employers as well as on the level of the State. Patients' satisfaction could be used as an instrument for measuring the success of a healthcare institution and for improving the quality of health care itself<sup>2</sup>. The programs of satisfaction of the users of healthcare services are studied and applied in the health sector as instruments for achieving patients' satisfaction<sup>2</sup>. The aim of this research was to examine the influence of moral foundations and personality dimensions of healthcare professionals on patients' satisfaction with healthcare service in primary healthcare institutions.

In accordance with the above stated and taking into account the existing literature, the influence of following personality dimensions (tested by the Big Five Inventory – BFI) and moral foundations (tested by the Moral Foundation Questionnaire – MFQ) on patients' satisfaction with healthcare service were determined: the extraversion dimension (BFI1), the neuroticism dimension (BFI2), the openness dimension (BFI3), the agreeableness dimension (BFI4), the conscientiousness dimension (BFI5), and care (MFQ1), fairness (MFQ2), loyalty (MFQ3), authoritativeness (MFQ4) and purity (MFQ5), respectively.

Results of the research should form the basis for planning activities that would improve the quality of work of healthcare professionals and patients' satisfaction as the main output.

## Methods

The research was conducted as a survey, by distributing questionnaires with a prior consent of the Ethics Committees of the health centers "Novi Sad", "Kula" and "Dr. Đorđe Lazić". The Health Center "Novi Sad", the largest health center in the region, with the largest number of employees (1,465), with 33 facilities (some of which are in urban and some in suburban settlements), and the largest number of services provided (8,835,567 in 2016) and the most intensive patient turnout (of all ages – from the youngest, to the working age and pensioners), was taken as a representative one. In Novi Sad, there is no general hospital as a secondary-level healthcare institution, except the Military Hospital in Petrovaradin; for that reason the Health Center "Novi Sad" plays a major role in bridging the gap between the primary and tertiary level of health care.

## Research instruments

Three instruments were selected in accordance with the research objectives and based on the theoretical and empirical backgrounds<sup>13</sup>. The first one was the Big Five Inventory, one of personality testing questionnaires,

developed by Italian authors Caprara et al.<sup>4</sup>. It consists of 44 statements, to which a respondent answers on the Likert scale ranging from 1 to 5 (Cronbach alpha = 0.857 in this research). The second one was the Moral Foundations Questionnaire, which consists of 32 statements, divided into two groups (Cronbach alpha = 0.893 in this research), and the answers were given in the Likert scale format in the range of 1 (not very relevant) to 5 (strongly relevant), and ranging from 1 (disagree strongly) to 5 (agree strongly). The third instrument was the Patient satisfaction questionnaire, and an *ad hoc* questionnaire constructed only for the purposes of this research, which consisted of 25 questions, (Cronbach alpha = 0.752 in this research) with answers offered in the Likert scale format, ranging from 1 (not at all relevant) to 5 (extremely relevant). According to the Cronbach alpha coefficients we could say that instruments we used in this research were reliable.

One independent study panel consisted of health workers from the three medical institutions, while the other panel included patients treated in these institutions<sup>5</sup>. Firstly, it was necessary to translate and culturally adapt the selected instruments. Two translators, whose mother tongue was Serbian and who were familiar with the research, independently translated both questionnaires from English into Serbian. The two versions were compared, and after back-translation and final correction and validation by a university professor in psychology and management, the versions were finally accepted. The questionnaires were anonymously filled in order to obtain as sincere responses as possible.

## Study sample

The survey was conducted in the period from October 2014 to March 2016. A total of 1,000 questionnaires were distributed, 758 were returned, of which 693 were valid. Of these, 329 respondents were health workers (154 doctors and 175 nurses, 44 were male and 285 female), and 364 were patients (154 were male and 210 female). In order to confirm or reject the research hypotheses, the obtained results were subjected to the structural equation modeling (SEM) analysis. The analysis was performed in the WARPLS 4.0 program because it allows determining also non-linear relationships between variables included in the structural model.

## Results

Data obtained from patients are shown in Table 1. Out of the total number of 364 patients treated in the studied healthcare centers, the largest number stated that they were the most satisfied when a doctor was well organized (4.64), then spontaneous (4.50), attentive and open (4.41). While patients reportedly disagreed with the statement that medical staff had violated their national or social rights (2.10), they were not satisfied with the length of time they spent on examinations (2.32), and they did not agree with the statement that healthcare services were equally accessible to all (2.76).

**Table 1**

<b>Factors of patients' satisfaction with healthcare service</b>	
Factors of satisfaction	Average score
I appreciate when the doctor is well organized	4.64
I appreciate when the doctor is spontaneous	4.50
I appreciate when the doctor is attentive and open	4.41
I would characterize myself as a communicative patient	4.31
I appreciate more when the doctor is committed than distanced	4.16
The doctor listens to me carefully during the examination	3.95
With a nurse I feel there is willingness to help	3.93
I would characterize myself as a responsible patient	3.90
There is a lot of corruption in the medical profession	3.84
I am satisfied with the maintenance of personal data	3.68
Your doctor is making effort to gain your trust	3.63
With a doctor I feel empathy and understanding because of the illness	3.48
You get immediate service with emergency health problems	3.36
You wait for a long time in the waiting room regardless of the appointment	3.33
I am satisfied with the costs of some medical examinations	3.04
I am satisfied with home treatment services	3.01
I am satisfied with the availability of the Protector of patients' rights	2.89
I am satisfied with the organization of preventive examinations in some departments	2.88
Health is equally accessible to all	2.76
How long does averagely the examination take at the doctor's office	2.32
Medical staff has once violated your national or social rights	2.10

**Table 2**

<b>Health workers' personality dimensions in relation to professional position</b>					
Healthcare workers	Personality dimensions of healthcare workers				
	Extroversion (BFI1)	Neuroticism (BFI2)	Openness (BFI3)	Agreeableness (BFI4)	Conscientiousness (BFI5)
Doctors (n = 154)	5.02	3.96	5.05	4.64	5.66
Nurses (n = 175)	5.11	3.96	5.07	4.66	5.66
Total (n = 329)	5.07	3.96	5.06	4.66	5.66

**BFI – Big Five Inventory**

As shown in Table 2, both doctors and nurses score was highest on the dimension of conscientiousness (5.66) and lowest one on the dimension of neuroticism (3.96).

As shown in Table 3, healthcare workers have the most prominent dimension of empathy for patients (29.32 for doctors and 29.29 for nurses), and the least significant

**Table 3**

<b>Moral foundations of healthcare workers in relation to their position</b>					
Healthcare workers	Personality dimensions of healthcare workers				
	Care (MFQ1)	Fairness (MFQ2)	Loyalty (MFQ3)	Authority (MFQ4)	Purity (MFQ5)
Doctors (n = 154)	29.32	28.77	28.16	28.13	28.58
Nurses (n = 175)	29.29	28.89	28.25	28.13	28.58
Total (n = 329)	29.31	28.84	28.21	28.13	28.58

**MFQ – Moral Foundation Questionnaire**

**Table 4**

<b>Basic parameters of structural equation modeling (SEM) analyses</b>	
Model fit and quality indices	<i>p</i>
Average path coefficient (APC) = 0.083	0.027
Average R-squared (ARS) = 0.062	0.058
Average adjusted R-squared (AARS) = 0.035	0.124
Average block VIF (AVIF) = 1.167, acceptable if $\leq 5$ , ideally $\leq 3.3$	
Average full collinearity VIF (AFVIF) = 1.727, acceptable if $\leq 5$ , ideally $\leq 3.3$	
Tenenhaus GoF (GoF) = 0.243, small $\geq 0.1$ , medium $\geq 0.25$ , large $\geq 0.36$	
Sympson's paradox ratio (SPR) = 0.700, acceptable if $\geq 0.7$ , ideally = 1	
R-squared contribution ratio (RSCR) = 0.871, acceptable if $\geq 0.9$ , ideally = 1	
Statistical suppression ratio (SSR) = 0.900, acceptable if $\geq 0.7$	
Nonlinear bivariate causality direction ratio (NLBCDR) = 0.800, acceptable if $\geq 0.7$	

**Source: WARPLS 4.0 program.**

**Table 5**

<b>Results of structural equation modeling (SEM) analysis</b>											
Parameters	BFI1	BFI2	BFI3	BFI4	BFI5	MFQ1	MFQ2	MFQ3	MFQ4	MFQ5	
Path coefficient	0.01	0.058	-0.145	0.068	-0.064	-0.024	-0.070	0.007	0.154	0.137	
<i>p</i>	0.021	0.132	0.003	0.095	0.110	0.321	0.090	0.445	0.001	0.004	

**BFI – Big Five Inventory (for explanation see Table 2);**

**MFQ – Moral Foundation Questionnaire (for explanation see Table 3).**

dimension of authoritativeness (28.13 for doctors and 28.13 for nurses).

The basic parameters of the SEM analysis presented in Table 4 show that the suggested model was statistically significant and that all relevant parameters suggesting significance of the analysis were within the limits that make the model acceptable.

The obtained results indicated that openness ( $p = 0.14$ ,  $p < 0.01$ ), as well as authoritativeness ( $p = 0.15$ ,  $p < 0.01$ ) and purity ( $p = 0.14$ ,  $p < 0.01$ ) of health workers significantly affected patients' satisfaction with the quality of healthcare services (Table 5). Other personality dimensions and moral foundations of health workers did not show statistical significance.

## Discussion

The healthcare service quality can be defined as the degree to which the healthcare service for an individual and a population increases the likelihood of the desired health outcomes, although it is consistent with the current professional knowledge<sup>6</sup>. The categories of healthcare quality indicators such as equipment, facilities, human resources and qualifications were originally developed by Donabedian<sup>7</sup>, while Lohr and Schroeder<sup>6</sup> spent many years devising and expanding this scheme. It is important to keep in mind that researchers suggested that these variables are not a direct measure of quality. Instead, resources are there only to help us determine whether the quality is good or not.

The originality of this research lays in establishing direct connections between moral foundations and personality dimensions of healthcare workers and patient satisfaction with primary healthcare service. By analyzing the data, we noticed that if the healthcare worker is more

open, the patient is more satisfied. The characteristic of openness is defined by attention to inner feelings, preferences of diversity, enthusiasm, originality, broad interests, and if these characteristics are more pronounced among health workers, patients are more satisfied. Analyzing the authoritativeness factor, which was distinguished by the SEM analysis, it could be noticed that with lower authoritativeness of healthcare workers, patients' satisfaction increases. This moral foundation is formed on the basis of the long history of primates and hierarchical social interactions, based on the virtues of leadership, including respect for the rule of laws and respect for tradition<sup>8</sup>. Healthcare workers who tend to violate strict rules and norms, and oblige patients have more satisfied patients, as opposed to those who act strictly according to the rules and do not oblige patients. Frequently, strictness of healthcare workers leads themselves to an undesirable situation, when while respecting the rules they cannot meet every patient's expectations. Analyzing the factor of purity of healthcare workers, it was found that the trait of purity was in a negative correlation with patients' satisfaction. This moral foundation is based on the psychology of disgust and contamination. These are basically religious concepts which lead us to aim to live in a sublime, less physical and kinder world. It advocates the idea that the body is a temple that can be desecrated by immoral activities<sup>8</sup>. Purity primarily refers to the respect of the Hippocratic Oath, which implies that health workers should help everyone who asks for help, regardless of religious, gender and national affiliations. Healthcare workers who work according to established standards and norms, without undue concessions, cause less patients' satisfaction. Healthcare workers who work outside established standards, who want to grant sick leave although they consider it unnecessary and who are prone to corruption, cause more satisfaction with patients. Although

this is in disagreement with literature data, the practice has shown a positive correlation between these phenomena. All this is due to the fact that many patients do not visit a doctor because they are really sick, but for the reasons of getting a sick leave, obtaining documents for going to a disability pension, or getting medical records for the need of collecting medical insurance. Moral psychology is a rapidly growing field, yet progress is limited by the quality and availability of existing measures. The effects of emotion and cognition on moral judgment or investigating the neurological basis of moral judgment demands a validated, standardized stimuli set that covers the moral domain<sup>9</sup>.

Similar results were published by Huseinspahić<sup>10</sup>, who investigated the effect of quality of health care as a prerequisite for patients' satisfaction. He also partially confirmed that the level of patients' (dis)satisfaction is a result of the overall perception of the quality of healthcare services, i.e. confirmation or non-assertion of preferences in terms of the technical and functional dimensions of the quality of healthcare services<sup>10</sup>. Also, results published by Shan et al.<sup>11</sup> show that patients' satisfaction with health care is low in Heilongjiang in China. The fundamental problem of the poor satisfaction of patients is the lack of trust. In addition, inequality of a protector of patients' rights, and perceived poor quality of services also contribute to patients' dissatisfaction with health care. Therefore, reforming the current medical insurance system, as well as enhancing healthcare service quality will be key to address the problems of distrust<sup>11, 12</sup>. From the results of this research, as well as from the research in the region and on the other continents, it is clearly seen that there is a problem in the healthcare system, which should be improved by the state in order to make it better, and patients more satisfied. The medical standard generates conflict zones and ethical dilemmas, while the freedom of choice over the type of medical procedure preferred makes a reference to the manner of understanding, acceptance

and application of the new<sup>13</sup>. Ethics comes with the message of the concept of health from a personal issue, limited to patients' satisfaction or dissatisfaction<sup>14</sup>.

#### *Limitations and directions for further research*

The research should be carried out on a larger sample with respondents from the whole the Republic of Serbia and by using other instruments, as well as it should be extended to the secondary and tertiary levels of health care.

On the basis of the mentioned limitations, proposals for further research are suggested: to examine the motivation and emotional status of healthcare workers; to examine how the emotional characteristics of the service providers affect the quality of services in the health systems and to use other questionnaires for this purpose; to conduct a research in which receivers of healthcare services would assess the expertise of health providers; to conduct a survey in which healthcare workers would report their satisfaction with their work and correlate the findings with patients' satisfaction; to examine the ethics of healthcare workers in cases of patients' taking sick leave.

#### **Conclusion**

There is a direct association between the moral foundations (authority and purity) and personality dimensions (openness) of healthcare workers, and patients' satisfaction with healthcare service. Thus, any strategy for improving the quality of healthcare services should take into account moral and personal characteristics of healthcare workers. The research put emphasis on interpersonal relationships, since humanity is one of the main prerequisites of a good healthcare system and quality of health care.

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