DUAL SIDES OF HEALTH CARE SERVICE QUALITY: WHAT IS REALLY IMPORTANT FOR PATIENTS?

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Abstract

Marketers always try to identify those service aspects that bring the biggest customer satisfaction. As long as health care service providers began to realise that patients should be treated as customers, they face the need to understand, what service aspects are the most important to patients. There is no arguing that the most important thing for patients when talking about health care services is good health outcomes. But there are plenty of evidences, that patients do not have competence for evaluating technical quality that in health care service sector in fact means the outcomes of treatment, medical treatment, professional knowledge and skills of physicians, etc. Because of that analysis in this article concentrates only to those health care service quality aspects that could be easily evaluated by patients: service environment or tangible aspects (where the service is provided) and interpersonal aspects (how the service is provided), thus maintaining the purpose to explore the duality of the patients' view to service quality of health care organizations.

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1. Introduction

There are a number of studies on service quality from different perspectives. And of course service quality has been analysed in different service sectors. Health care service sector is the one that also requires and gets a lot of attention when analysing service quality issues. Some authors analyse health care service quality from marketing management perspective, treating patients as consumers and emphasising patient perceived service quality definition. Other studies involve service providers' point of view to health care service quality. There is also a substantial amount of literature that compares patient and health care professional views to service quality. Still, the biggest number of studies involve analysis of health care service quality as perceived by service receivers, i.e., by patients. And these studies usually employ one of two major approaches to service quality: 1) so called "Nordic school" approach with reference to technical-functional quality model (Gronroos, 1984, etc.) or 2) "American school" approach, which refers to SERVQUAL model (Parasuraman, Zeithaml & Berry, 1985, 1988). It has to be noted that the operationalization of both concepts in health care service sector generally covers functional quality aspects, because it has been found that health care recipients have difficulty in evaluating technical quality. Analysis in this article concentrates only to those health care service quality aspects that can be easily evaluated by patients: service environment or tangible aspects (where the service is provided) and interpersonal aspects (how the service is provided). As there are some empirical proves that tangible aspects are very important to patients, because environment can decrease psychological discomfort linked with fear and anxiety concerning persons' health (Rees, 1998; Lee *et al.*, 2000), and that inability to assess treatment and its outcomes lead patients to rely more on the manner how the service is provided to them (i.e., functional quality), *it should be worth to explore, which of these two aspects is more important to patients.*

Theoretical background. Since Gronroos (1984) suggested perceived service quality model

as composed of two broad dimensions: technical and functional quality, it has been used in quality research in many different service sectors, including health care. Researchers, who employed this model in health care quality studies, suggested that technical quality in health care sector is defined primary on the basis of the technical accuracy of the medical diagnoses and procedures or the conformance to professional specifications, whereas functional quality refers to the way in which health care services are delivered to patients (Lam, 1997; Yesilada & Direktor, 2010; Zarei *et al.,* 2012; etc.). But the research has shown that technical quality falls short of being a truly useful measure for describing how patients evaluate the quality of a medical service encounter (Bowers *et al.,* 1994). Because most of patients lack the required knowledge for evaluating the technical quality of services, their evaluation of quality is based on the medical care process (Zarei *et al.*, 2012). Many studies confirmed that although technical quality has high priority with patients, most patients do not have knowledge to evaluate effectively the quality of the diagnostic and therapeutic intervention process or information necessary for such evaluation is not shared with the patients. Thus, patients base their evaluation of quality on interpersonal and environmental factors, which medical professionals have always regarded as less important (Yesilada & Direktor, 2010).

The heightened interest in Gronroos' 2-dimensional model evoked rise of other similar concepts. For example, Lehtinen & Lehtinen (1991) proposed three-dimensional model, consisting of physical quality, quality of interaction and corporate quality; Rust & Oliver (1994) also introduced three-dimensional model, involving such dimensions as service product, service delivery and service environment; Brady & Cronin (2001) suggested three dimensions: outcome quality, interaction quality and physical environment quality; and these are only few to mention. We need to point out one more similar concept that dominated in health care literature - Donabedian's (1980) classic differentiation of structure, process, and outcome. Structure in this conceptualization means the patient/consumer's rating of the physical environment and physical facilities in which the service occurs. Process measures address the patient's rating of interpersonal interactions with service personnel and of personnel with each other. Specific attributes include, for example, responsiveness, friendliness, empathy, courtesy, competence, and availability. Outcome-related measures or items ask about the patient's perception of the results of process, including symptom reduction or resolution, improvement in functioning, or resolution of underlying problems (Soafer & Firminger, 2005). Donabedian's categorization as well as other similar concepts has been very useful to academics and practitioners trying to understand the dimensionality of patient's perception of health care quality. But the existing empirical proves tell us that patients tend to evaluate the quality of health care services by focusing on more functional issues like physical facilities, interactions with medical staff or brochures rather than hard-to evaluate technical aspects. Moreover, most patients cannot distinguish between the caring performance and the curing performance of medical care providers (Lam, 1997). It allows concluding that consumers must rely on attitudes toward caregivers and the facility itself in order to evaluate their experiences. Even sceptics recognize that patient perceptions are important when it comes to non-medical service in health care, things like how easy it is to get an appointment or how politely patients are treated by the office staff (Sofaer & Firminger, 2005).

Inability of patients to evaluate properly technical quality called to turn to other, more operational conceptualization of service quality – SERVQUAL, proposed by Parasuraman, Zeithaml and Berry (1985, 1988), when evaluating service receiver's perception of quality. The SERVQUAL instrument distinguishes 5 service quality dimensions: reliability, assurance, tangibles, responsiveness and empathy, which generally cover functional and tangible environmental aspects of services. SERVQUAL has been widely applied in health care industry, but the empirical results rarely showed the consensus on the number of quality dimensions. Still, SERVQUAL has been recognized as highly valuable instrument for measuring service receiver's opinion about quality.

In summary, analysis of theoretical and empirical studies allow suggesting that patients perception of health care service quality actually may be really valuable when talking about service environment, that describes mostly tangible and easily assessable before-during-after process

aspects, and the interaction during the service process itself, i.e., functional aspects of service quality. Studies, employing SERVQUAL in health care sector report the importance for patients of such functional quality aspects, as reliability, empathy and responsiveness. Tangibility usually has been found to be the least important of the five SERVQUAL dimensions. Still some researchers report that tangible service environment is also important for patients, because it can decrease psychological discomfort and fear facing health problems (Rees, 1998; Lee *et al.*, 2000). *Based on this, the authors of this article suggest that it would be valuable to complement existing findings in this area and to explore, what is more important for patients – tangible or intangible aspects of service, when only these two aspects are faced.*

2. Method

The main aim of the empirical research was to identify which of two broad quality aspects – tangible or interpersonal – is more important to patients. The following tasks were formulated trying to reach the aim:

1) To test the dimensionality of the research instrument;
2) To identify the service quality dimensions that is most important to patients;
3) To determine the difference of ratings based on patients socio-demographic characteristics.

The survey method, employing the self-administered questionnaire was chosen as the most appropriate data collection method for this particular research.

Sampling. 5 hospitals in Lithuania were selected for data collection after the probability cluster sample procedures, and all of the possible respondents in these 5 hospitals (patients who were hospitalized) were intended to be questioned. The samples were divided among 5 hospitals based on proportionality to the size. The inclusion criteria comprised adult patients aged 16 years and older who were willing to participate in the survey. The aim of the survey was explained to patients and they were assured of the privacy of their information. Overall 1000 questionnaires have been distributed, and 225 properly answered questionnaires were collected with the response rate of 23 percent.

Survey instrument. The research instrument was developed covering 47 items representing health care service attributes, each of which corresponded with one of the 6 quality dimensions, picked up from the literature review. Those 6 quality dimensions were chosen according to their capability to reflect environmental (tangible) or functional (interpersonal) aspects of hospital services. The 6 dimensions, their origins, definitions and number of initial items in questionnaire, corresponding each of the dimension, can be found in Table 1. Respondents were asked to indicate the relative importance of attributes on a 5-point scale, from 1 (unimportant) to 5 (of critical importance).

Data analysis. Data was analysed using descriptive statistics, Exploratory Factor Analysis, Kruskal-Wallis and Man-Whitney nonparametric statistical tests. The reliability of the scales was statistically verified using Cronbach's alpha coefficient, with the indexes higher than $\alpha = 0.6$.

Table 1. Nature and description of health care quality dimensions as perceived by patients

	Quality dimension	Description	Number of items	Authors
Environmental (tangible) aspects	Tangibles	Physical evidence of service: facilities, number and appearance of personnel, tools or equipment used to provide service.	11	Parasuraman *et al.*, 1988; Haywood-Farmer & Stuart, 1988; Brown & Swartz, 1989; Walbridge & Delene, 1993; Lee *et al.*, 2000; Lim, Tang & Jackson, 1999; etc.
	Accessibility	Ease of contact, waiting time, convenient location, etc. Ease with which health care services are reached. Access can be physical, financial and psychological.	11	Parasuraman *et al.*, 1985; Koch, 1991; Ware *et al.*, 1983; Maxwell, 1984, 1992; Bowers *et al.*, 1994; Mittal & Baldasare, 1996; Jun *et al.*, 1998; Rees, 1998; O'Brien, 1991; JCAHO, 1997.

	Quality dimension	Description	Number of items	Authors
Interpersonal (functional) aspects	Responsiveness	The degree to which patient is brought to the centre of health care service providing. Willingness of service providers to provide prompt service. It also involves the timeliness of service.	5	WHO, 2000; PZB, 1985, 1988.
	Communication	Keeping patients informed in language they can understand, listening to them, education, etc.	6	PZB, 1985; Arnetz & Arnetz, 1996; Raper, 1996.
	Reliability	The degree to which a promised service is performed dependably and accurately.	6	PZB, 1985; 1988;
	Respect and Caring	Respect for patient values, preferences and needs. The degree to which the patient is involved in the decision-making process and to which services are provided with care and respect for his values and expectations.	8	Rees, 1998; JCAHO, 1997.

3. Results

Patients' characteristics. Table 2 shows the socio-demographic findings of the patients. The subjects in patient's sample ranged in age from 16 to 82 years, with a mean age of 43 years (SD=8.49). Almost 25 per cent of respondents in this sample had a high (university) education; more than a half (54 per cent) of them had higher than secondary formal education. During the survey we reached respondents from 18 different hospital departments, and the majority were taking cure from diseases that could be attributed to internal medicine.

Table 2. Sample profile

Variables	Attributes	%
Gender:	Male	35,0
	Female	65,0
Age:	to 35 years	35,6
	36-50 years	37,0
	over 50 years	27,4
Education	Without high education	75,2
	High education	24,8
Hospital unit (where patients were taking treatment):	Surgery	17,5
	Obstetrics-gynaecology	20,9
	Internal medicine	48,3
	Trauma – rehabilitation	6,6
	Neurology	6,6
		N - 225

Construct validity and reliability. The construct validity was determined using Exploratory Factor Analysis (EFA) (principal component analysis with Varimax rotation method). The sample adequacy for extraction of the factors was confirmed through Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity. The Bartlett's test result was significant ($p < 0.001$), and the KMO value (0.864) showed that using exploratory EFA was suitable.

In this analysis, the factors with eigenvalues equal or higher than 1 were considered significant and chosen for interpretation. By EFA, 12 factors were extracted, explaining 67% of the total variance. All factor loadings were higher than 0.4, indicating that they were statistically

significant and higher than the recommended level. Almost each of the factors, except of one, was easily interpretable. One item that loaded on unexpected factor was removed from analysis, and other two were attributed to other factors, based on their loading weight and possibility of meaningful interpretation. Analysis suggested splitting the dimension "Tangibles" into three, namely "Clean & attractive environment", "Physical facilities" and "Medical infrastructure". Dimension "Accessibility" diverged into "Physician accessibility" and "Accessibility". The part of dimension "Communication" was seen as a separate factor "Information" by respondents. Dimension "Respect & Caring" was distributed among 2 factors: "Patient centeredness" and "Courtesy". So, finally the EFA results specified 11 patient perceived dimensions of hospital service quality (see Table 3). To evaluate the reliability of these 11 dimensions, the internal consistency analysis was performed. The Cronbach alpha coefficient ranged from 0.519 (only one factor that consisted only of 2 items had the value lower than 0.6) to 0.877, showing that the instrument is sufficiently reliable.

Table 3. 11 hospital service quality dimensions extracted by EFA

Factor	Description	No. of items	Cronbach α
1. Clean & Attractive environment	Cleanliness, comfort and attractiveness of hospital and its environment.	6	0.860
2. Communication	Open communication and information flow; explaining complex technical information clearly.	6	0.877
3. Patient centeredness	Having patient physical and emotional needs met; receiving individualized care; involving patient in decision-making about his care.	5	0.837
4. Reliability	Ability to perform the promised service dependable and accurately, including physician and hospital reputation.	4	0.784
5. Physician accessibility	Having doctors and staff who make themselves available and accessible to patient.	4	0.726
6. Courtesy	Courtesy, politeness and respect of medical personnel showed to patients.	3	0.728
7. Information	Education to facilitate patient autonomy, self-care and health promotion; provision of any kind of information.	3	0.714
8. Accessibility	Patients' ability to obtain the health care, including affordability, convenient places and times for visits, ease of contact and equity.	6	0.708
9. Responsiveness	Willingness to provide prompt service, reaction of health care providers to patients' needs.	4	0.761
10. Physical facilities	Hospital facilities that makes the stay at hospital more comfortable, involving food, conditions for visitors, etc.	3	0.660
11. Medical infrastructure	Infrastructure necessary for delivering health care services, involving medical equipment and number of medical personnel of different specializations.	2	0.519

In order to test the duality of perception of health care quality, as we proposed at the beginning of the article, the second EFA was performed, this time with the 11 factors extracted. The purpose of using the second EFA was to establish if we really can speak about 2 distinct areas of service characteristics, namely – service environment (or tangible aspects) and service delivery (or interpersonal aspects).

The KMO value (0.900) and Bartlett's test result ($p < 0.001$) confirmed the suitability of EFA. By the second EFA 2 factors were extracted, explaining almost 58% of the total variance. All factor loadings were higher than 0.5. The factor loading of each item has been listed in Table 4. The

results specified two dimensions: 1) Factor 1 included 6 items, which explained 33.9% of the total variance and was labelled as "Interpersonal aspects"; 2) Factor 2 included 5 items, which explained 23.8% of the total variance and was named "Tangible aspects". The Cronbach alpha coefficients for those two factors were higher than 0.7, showing the sufficient reliability (see Table 4).

Table 4. 2 service quality dimensions extracted by 2nd EFA

11 Primary factors	Factor loading	New Factor	Cronbach α
Communication	0.806	Interpersonal aspects	0.870
Responsiveness	0.746		
Reliability	0.774		
Information	0.731		
Patient centeredness	0.715		
Courtesy	0.703		
Clean & Attractive Environment	0.773	Tangible aspects	0.769
Medical infrastructure	0.761		
Physical facilities	0.696		
Accessibility	0.602		
Physician accessibility	0.542		

Descriptive statistics. In order to define the importance of different service aspects for patients, further in this article we present the findings of descriptive analysis. Patients' ratings of 11 health care service quality dimensions are presented in Table 5.

**Table 5.** Importance ratings on 11 health care service quality dimensions

Dimension	Mean	Std. Deviation
Medical infrastructure	4,111	0,728
Physician accessibility	4,110	0,590
Courtesy	4,099	0,633
Reliability	3,997	0,683
Communication	3,980	0,666
Responsiveness	3,818	0,629
Information	3,796	0,667
Accessibility	3,592	0,579
Physical facilities	3,547	0,699
Clean & Attractive Environment	3,515	0,724
Patient centeredness	3,408	0,733

"Medical infrastructure" and "Physician accessibility" were rated highest in relative importance by the respondents. "Courtesy" and 'Reliability" were rated third and fourth, respectively, indicating the ratings higher than 4 ("very important" on 5-point scale). It's worth to mention that four first quality dimensions that had the highest rating of importance equally represent tangible and interpersonal aspects of quality, according to the results of our 2nd EFA. In this respect, "Reliability" and "Courtesy" represent interpersonal aspects of quality, whereas "Medical infrastructure" and "Physician accessibility" represent tangible aspects. The two relatively least important dimensions for patients were "Clean & Attractive environment" and "Patient centeredness" that also stand for both tangible and interpersonal aspects, respectively. The mean scores of importance on two broad dimensions "Interpersonal aspects" and "Tangible aspects" did not show any noticeable difference for patients (see Table 6). The results allow to state that both tangible and interpersonal aspects of services are almost equally important when evaluating quality of hospital services.

Table 6. Importance ratings on 2 health care service quality dimensions

Dimension	Mean	SD
Interpersonal Aspects	3,8497	0,520
Tangible Aspects	3,7750	0,480

In order to see, which of quality dimensions ratings have statistically significant difference from the population mean, standardized z-values were calculated. A z-value (or z-score) quantifies the original score in terms of the number of standard deviations that score is from the mean of the distribution. Statistically significant differences in evaluations are shown in Figure 1. Columns that are beyond the confidence interval (marked with vertical lines) show the significant difference from the mean.
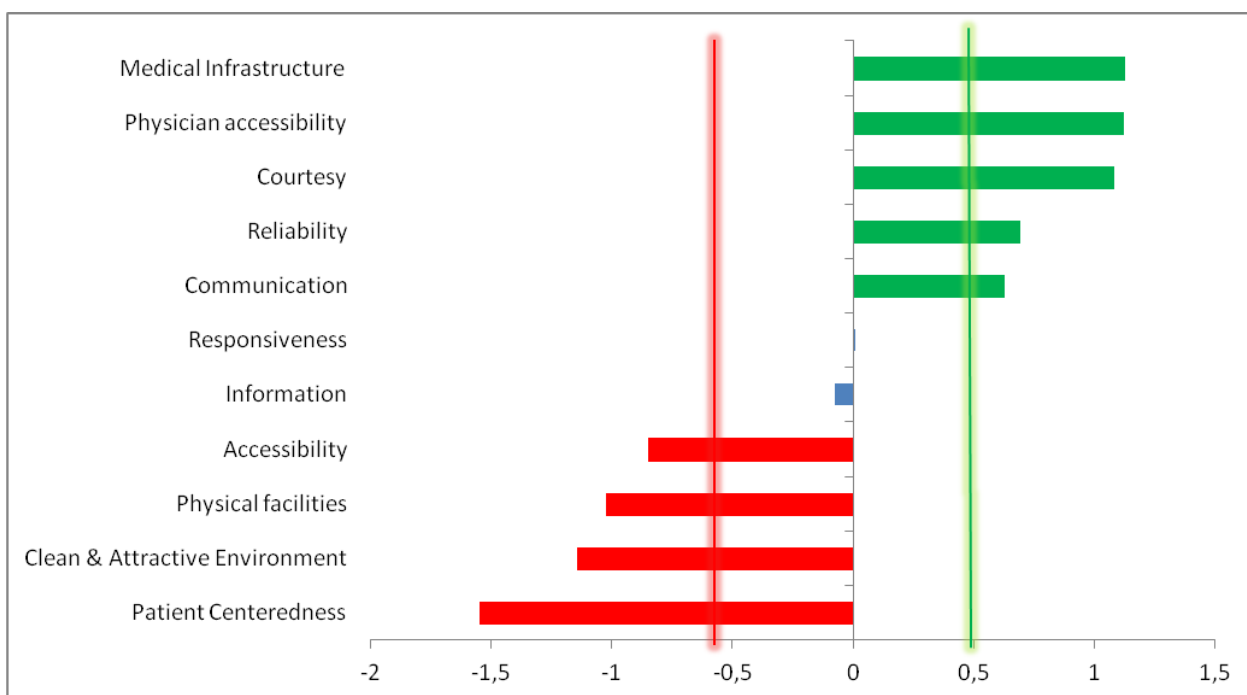
Figure 1. Importance of quality dimensions for patients on z-score scale

Figure 1 visually shows that the biggest statistically significant negative shift is on dimension "Patient centeredness". Among all 11 dimensions this one is the least important to patients. Such results are a little bit unexpected, taking into account the number of empirical evidences that the manner patients are treated as clients, with individual attention to their needs and requirements, is the point on which the patients rely when evaluating health care service quality. Ratings of dimensions "Clean & attractive environment", "Physical facilities" and "Accessibility" are at the end of the importance scale as well.

The moderate importance could be noticed on ratings of dimensions "Responsiveness" and "Information".

The statistically significant positive shift is on ratings of dimensions "Medical infrastructure", "Physician accessibility", "Courtesy", "Reliability" and "Communication". These dimensions among all others could be treated as the most important for patients.

Investigating the difference between the patients' importance ratings based on the socio-demographic variables regarding hospital service quality showed that there is a statistically significant difference between patients' importance rating scores based on age, education level and hospital unit, where patients were taking treatment. The results showed no differences in ratings based on gender. The summarised findings are provided in Table 7.

Table 7. Statistically significant differences in ratings based on socio-demographic variables

Quality Dimension	Age (Kruskal-Wallis Test)	Education (Mann-Whitney U Test)	Unit (Kruskal-Wallis Test)
1. Clean & Attractive environment		p=0.046	
2. Communication	p=0.000	p=0.000	p=0.008
3. Patient centeredness	p=0.009		
4. Reliability			
5. Physician accessibility	p=0.000		p=0.019
6. Courtesy			
7. Information		p=0.002	p=0.019
8. Accessibility		p=0.002	
9. Responsiveness	p=0.019	p=0.001	
10. Physical facilities			
11. Medical infrastructure		p=0.005	
1. Interpersonal aspects		p=0.012	
2. Tangible aspects		p=0.009	

The results of the Kruskal-Wallis test showed that there are differences in ratings based on age on such dimensions as "Communication", "Patient centeredness", "Physician accessibility" and "Responsiveness". Further analysis showed that younger respondents (under 35 years) tend to give higher ratings of importance for dimensions "Communication" and "Physician accessibility" than do older patients (aged 35-50 years and more than 50 years). Meanwhile respondents aged 50 years and more tend to rate "Patient centeredness" and "Responsiveness" as more important. This allows suggesting that younger patients (under 35 years) in judging hospital service quality would pay more attention to communication and physician accessibility, showing more concern with explanation of treatment and ability to get medical care available when they need it, while older patients (aged 50 years and more) would be more satisfied if they feel treated like individuals, politely, carefully and respectfully.

Analysis of differences based on education showed that education has a strong influence on evaluations. Statistically significant differences were found on 6 quality dimensions ratings out of 11. There were also differences indicated on 2 broad quality dimensions "Interpersonal aspects" and "Tangible aspects". Respondents with high education tend to give higher ratings of importance on everything. These findings lead to conclusion that for patients with high education most aspects of hospital services would be more important while evaluating quality, in comparison with patients without high education.

Analysis of differences based on hospital unit showed the statistically significant differences on 3 dimensions – "Communication", "Physician accessibility" and "Information". Further analysis allowed to identify that opinion of patients who were treated at the Obstetrics-gynaecology unit was significantly different from others. Taking in mind that the patients from this unit mostly were future mothers, such results are understandable. Results suggest that it is very important to take into account the reason for being in hospital (health status, hospital department/unit, duration) when evaluating hospital service quality from patients' perspective, because it can determine the service aspects that would be the most important to patients, and at the same time, to lead to patient satisfaction/dissatisfaction.

4. Discussion

"As calls are made for a more patient-centred health care system, it becomes critical to define and measure patient perceptions of health care quality and to understand more fully what drives

those perceptions" (Soafer & Firminger, 2005, p.513). Numerous studies devoted to patient-perceived health care quality analysis suggest that although the core service of health care – medical treatment and its outcomes – is the most important for patients, practically only their perceptions about tangible and interpersonal aspects of quality could provide some valuable information, because most of patients lack the required knowledge for evaluating the technical quality of professional services. For that reason, the authors of this article decided to concentrate the research only to those health care service quality aspects that could be easily evaluated by patients, seeking to enrich and complement the existing findings about what is more important for patients – tangible or intangible aspects of service.

The factor analysis confirmed that we can talk about two-dimensional structure of hospital service quality as perceived by patients. Our study showed that these two sides of health care services are of almost similar importance to patients. So, we may conclude that the broad categorical terms, used for describing service quality, do not provide us with very clear results and call us to turn to more detailed measurement. According to our findings, these two broad dimensions that we named "tangible aspects" and "interpersonal aspects" further could be analysed as being composed of 11 sub-dimensions. The results of factor analysis showed that dimension "Tangible aspects" could be described by 5 sub-dimensions: "Clean & attractive environment", "Medical infrastructure", "Physical facilities", "Accessibility" and "Physician accessibility", whereas dimension "Interpersonal aspects" consists of 6 sub-dimensions: "Communication", "Responsiveness", "Reliability", "Information", "Patient-centeredness" and "Courtesy".

Analysis of importance showed, that the most important dimensions for patients are "medical infrastructure" and "physician accessibility" both representing the "Tangible aspects" of service quality. As previous research reported tangibles as the least important (Yesilada & Direktor, 2012), our results show that there are some tangible aspects, which importance for patients is paramount. The service environment embraces many different aspects, some of which, like "clean & attractive environment", "physical facilities" or "accessibility" in terms of convenience of getting services, are not so important to patients, and some of which, reflecting medical infrastructure that is necessary for good medical service delivery, or ability to reach the doctor or medicine at any time (physician accessibility in our research), are even more important than the way the care is provided. That allows us to make a suggestion that in evaluating tangible aspects of health care quality from patients' perspective, the more detailed (in terms of dimensions or sub-dimensions) the research instrument is, the more accurate information we get.

Other dimensions, which importance for patients were significantly bigger comparing with others, were "courtesy", "reliability" and "communication", and such results to some extent confirm the findings of previous studies. Still, there is a unique finding in this research concerning the importance of "patient-centeredness". This dimension was rated as least important. It seems like individualized care and sincere attention to patients' needs is not so important for patients as explanation of medical treatment (communication) or respect for patient as a person (courtesy). Such results were unexpected and require looking for possible reasons. First, it may happen due to the wording in items covering dimension "patient-centeredness" (see the appendix 1). Expressions like "Having patients' best interest at heart", „Sincere interest of personnel in solving patients' problems", etc., might be seen as too abstract and unrealistic by patients. Second, it could be that respondents treated service characteristics covered by „patient-centeredness" as additional (like an added-value), that would bring more satisfaction, but are not necessary in order to get good service. Anyway, this aspect requires more thorough investigation in the future.

Analysis of difference between ratings based on socio-demographic characteristics of patients showed that the importance of environmental (tangible) and interpersonal aspects for patients differs based on age, education level and hospital unit where patients were taking treatment. The findings allow suggesting that younger patients (under 35 years) would show more concern with explanation of treatment and ability to make a contact with their doctor anytime they need it, whereas older patients (50 years and more) needs to feel they are treated politely, carefully and respectfully. Our findings correlate with other research results, showing that the age is related with

quality ratings and expectations (Soafer & Firminger, 2005). At the same time, the findings clearly suggest that patients with high education tend to treat many aspects of health care services as more important than patients without high education do, thus showing that education is positively related with higher expectations. The results also allow us to confirm that the patients' health status or the reason for being in hospital should be taken into account when analysing patients' perceived health care service quality, because it predetermines the importance of different service aspects for patients and can lead to completely different results of quality evaluation. The results showed no differences in ratings based on gender thus supporting existing findings (Cleary et al., 2000) that gender differences might exist, but if so, they are not particularly large.

Limitations and further research. The research provided in this article is limited to health care quality perceptions of patients only in one setting – state hospitals. Studies in other settings, like private hospitals, primary care, should be conducted in order to get more generalizable and reliable understanding. Another limitation is the geographical isolation – the research performed only in one country - Lithuania. Cultural, social and economical peculiarities of different countries might also have an influence on health care quality perceptions. Therefore, similar studies have to be repeated in several different cultural contexts. This research has an exploratory character, so the extent to which the results can be generalised is limited. As patient understanding of health care service quality, with no doubts, will continue to be a relevant topic, different empirical and theoretical studies in this field are needed.

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Appendix 1. Hospital quality dimensions and items describing them, as extracted by EFA

Dimensions	Items	Previous place
1. Clean & attractive environment	1. Modern hospital buildings	Tangibles (T)
	2. Clean and comfortable environment of the hospital	T
	3. Visually attractive environment of the hospital	T
	4. Neat and well-dressed medical personnel	T
	5. Clean wards and toilets	T
	6. Visually attractive and comfortable wards	T
2. Communication	7. Complete and clear explanation about health problem	Communication (C)
	8. Complete and clear explanation about diagnostics and treatment	C
	9. Explanation about sides effects of prescribed medicines and treatment	C
	10. Information about possible alternatives of treatment	C
	11. Accurate medical records	Reliability (R)
	12. Assurance of patient privacy during physical examination	Accessibility (A)
3. Patient-centeredness	13. Sincere interest of personnel in solving patients' problems	Respect& Caring (RC)
	14. Individual attention to patient, remembering of faces and names	RC
	15. Having patients' best interest at heart	RC
	16. Understanding specific needs of patients	RC
	17. Patient and/or family members allowed to take part in decisions about patient care	RC
4. Reliability	18. Accuracy in billing (if the patient pays by himself)	R
	19. Reputation of doctors	R
	20. Reputation of hospital	R
	21. Carrying out the services right at the first time	R
5. Physician accessibility	22. Ability to get urgent medical help at any time	A
	23. Ability to contact to the responsible doctor by telephone	A
	24. Accessibility of doctor at not-working hours in urgent case	A
	25. Availability of medicines and other things needed for treatment at hospital	A
6. Empathy/ Courtesy	26. Doctors and other personnel are empathetic and courteous to patients	Responsiveness (Res)
	27. Polite and friendly dealing of personnel with patients	RC
	28. Respect for patient	RC
7. Information	29. Education how to behave in order to improve or maintain the health status	C
	30. Doctors' consulting time appointed for patient	C
	31. Information of patient if the appointed procedures are postponed	R
8. Accessibility	32. Easily understandable, informative and visually attractive service material (visit notes, brochures, directions, other documentation, etc.)	T
	33. Appropriate parking facilities	A
	34. Affordable prices (if the patient pays by himself)	A

Dimensions	Items	Previous place
	35. Ease of contact with hospital by telephone, internet or personal contact	A
	36. Waiting time from appointment to hospitalization	A
	37. Equal conditions for different patients	A
9. Responsiveness	38. Providing services at appointed time	Res
	39. Prompt reaction of doctors and other staff to patients' requests, complaints and questions	Res
	40. Willingness of doctors and other staff to help patients	Res
	41. Waiting time for appointed medical procedures	Res
10. Physical facilities	42. Food in hospital	T
	43. Appropriate conditions for visiting the patient	T
	44. Easily accessible place of hospital	A
11. Medical infrastructure	45. Modern and up-to-date medical equipment	T
	46. Number of different types of medical staff	T