

STAFF ATTRIBUTES AND THE QUALITY OF HOSPITAL SERVICES

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Purpose: Improving the quality of medical services is one of the key focus areas of hospital management. The search for opportunities for improvement, addressing real problems and meeting the needs of customers becomes particularly important in the face of such challenges as technological, especially the development of digitization and e-medicine, demographic changes, including, among others, aging societies, political and financial. The study was conducted to identify and analyze staff attributes that determine the achievement of a level of patient satisfaction with the quality of hospital services.

Design/methodology/approach: Based on desk research and interviews with patients of a sample hospital, six key staff attributes important for achieving satisfaction with the quality of hospital services were identified. These attributes were subjected to empirical studies conducted in accordance with the methodology of the Kano model (first stage) and the survey method (second stage). The results of the studies made it possible to identify gaps between the highest desired degree of satisfaction and the level resulting from the patients' actual evaluation. Subsequently, the authors formulated their own recommendations for strengthening human capital for increasing the quality of hospital services.

Findings: Based on the research, the map of key staff attributes affecting patient satisfaction with the quality of hospital services was developed. The attributes with the greatest importance and strength of influence on the quality of services, characteristic of the three professional groups studied, were then identified. Among them were: professionalism, kindness and politeness towards the patient and his family members, individualized approach to the patient. Recognizing the opinions of patients of a particular hospital, the attributes that were important but at the same time rated lowest were identified. On this basis, gaps between the expected and actual state were identified, and suggestions were made for improvement in the areas of knowledge, communication and cooperation.

Research limitations/implications: Some limitations were recognized in the research process, primarily due to the size of the research sample and the scope and scale of empirical research. It seems desirable to expand the research field to include the international environment. Conclusions made against the background of other cultural or systemic conditions of health care in a given country could enrich the conducted comparative analysis with interesting insights. In addition, the study of correlations between an expanded set of factors influencing the quality of hospital services and the level of patient satisfaction could provide a direction for further research.

Practical implications: The results of the study may be of interest to stakeholders in the health care industry. Identifying the key personnel attributes of greatest importance and power to influence service quality seems important for designing changes that strengthen a hospital's human capital. The presented suggestions for improvement in the areas of knowledge, communication and cooperation based on the results of patient satisfaction surveys of a specific hospital have application value.

Social implications: Implementation of changes designed on the basis of the research results presented and suggestions for improvement in the areas of knowledge, communication and cooperation can realistically improve patient satisfaction with the quality of hospital services. In addition, hospitals' interest in improving the quality of services in response to patients' needs and expectations demonstrates social responsibility.

Originality/value: The paper identifies key staff attributes important for achieving patient satisfaction with the quality of hospital services. It also provides practical recommendations for improvement in the areas of knowledge, communication and cooperation. The article is dedicated to academic and healthcare professionals, including hospital managers, as well as local government administration.

Keywords: hospital services, quality of hospital services, staff attributes, patient satisfaction, Kano method.

Category of the paper: research paper.

1. Introduction

The quality of hospital services is an interesting area of theoretical and empirical research undertaken in the social sciences. Especially in the face of such challenges as: technological, especially the development of digitalization and e-medicine, demographic changes, including, among others, aging societies, political and financial in the form of constant social pressure to increase the healthcare budget. It is also a very important aspect of hospital management in the context of recognizing opportunities for improvement, solving real problems and meeting customer needs. Although it may seem that achieving high quality services is determined primarily by technical, organizational or economic factors, human factors are also important. Staff attributes become more and more important during hospitalization, when building relationships with the patient based on mutual trust and understanding, as well as developing a sense of security, can have a real impact on the treatment process.

The theoretical and empirical considerations undertaken in the article were aimed at interpreting the issue of the quality of hospital services from the point of view of achieving patient satisfaction. The analysis was based on the attributes of medical staff. The aim of the study is to identify the attributes that most determine the level of patient satisfaction with the quality of hospital services. Taking into account the current challenges facing health care systems, an attempt to identify the factors of greatest importance from the perspective of influencing the level of satisfaction seems even more necessary. An interesting research field is determined by the pursuit of a state where the patient's needs and expectations are met and

the values co-created by patients and medical staff translate into the quality of hospital services. To put it very simply, patient satisfaction is a subjective and variable state related to individual perception.

2. The status of research on the quality of medical industry services

The literature on the subject indicates that the issue of quality assurance in the broadly understood sphere of health care is an extremely complex issue. The analysis most often requires the use of an interdisciplinary approach in the area of not only the basic interpretation of the quality of services but also the planning and organization of activities necessary to meet the quality requirements of the final therapeutic effect. Hence, the basis of special interest is usually the context of the quality of the process and the quality of the achieved result (Vandamme, Leunis, 1993). Many authors (Anderson et al., 2013; Jaakkola, Alexander, 2014; McColl-Kennedy et al., 2017; Kim, 2019; et al.) point out that the quality of medical services is the result of co-creation of value by patients and medical staff.

The quality of medical care in a hospital can be expressed by, among others: availability of services and medical staff, waiting time for hospitalization, therapeutic procedures and diagnostic tests, etc. (Boomija, 2019; Rourke, 1991). Other authors define the quality of health care through the factor of accessibility and effectiveness, i.e. "whether individuals can access the health structures and processes of care which they need and whether the care received is effective" (Campbell et al., 2000, p. 1614). The effectiveness of clinical methods, techniques and therapies and the effectiveness of medical procedures are also important (Cheng, 2005; Ivanková et al., 2020).

In terms of ensuring and improving the quality of medical care, it is important to use the latest achievements in technology to increase the effectiveness of treatment processes (Cohen, 2002). As well as continuous learning and improvement of procedures and processes through accreditation and certification (Marzban et al., 2017; Hoseinpourfard et al., 2012). It is worth noting, however, that some studies indicate that the quality of medical services should be considered mainly in relation to the technical aspects of health care and interpersonal relations of patients and medical staff (Andaleeb, 2001; Babakus, Mangold, 1992; Zeithaml, Bitner, 2000).

The literature on the subject emphasizes the importance of organizational culture, the involvement of medical staff and management processes in the development of the quality of health care in hospitals (Lega et al., 2013). Referring to research conducted in Finland, it can be concluded that it is necessary to use the patient-centered approach and strengthen leadership as a condition for improving the quality of management of health care facilities and the medical services provided (Pihlainen et al., 2019). The patient centered health care system

is increasingly recognized as a key approach in improving the quality of hospital services in the perception of patients (Sofaer, Firminger, 2005).

The issue of the quality of services provided by a hospital is also discussed in the context of achieving patient satisfaction (McConnell et al., 2016; Wang et al., 2022; Zhao et al., 2023). In this regard, it is emphasized, among others, the importance of lasting relationships with patients and effective communication. Satisfaction with the quality of services is achieved through, among others: increasing the level of treatment, care and internal service processes (Akthar et al., 2023; Alibrandi et al., 2023; Meesala, Paul, 2018; Wang et al., 2021). Particular importance is attached to medical activities and health services, care during and after hospitalization, internal services, including cleaning, storage and provision of hospital clothing and underwear, etc.

Since patient satisfaction with the quality of hospital services is recognized as a holistic phenomenon (Naidu, 2009), looking from the perspective of treatment effectiveness, it is difficult not to see the need to describe the factors determining its level. All the more so because patient satisfaction is treated as a cumulative construct, which implies the possibility of recognizing a rich set of factors characterizing the diverse and heterogeneous organizational environment of hospitals. These factors most often describe technical and functional aspects, infrastructure, interaction and atmosphere variables (Zineldin, 2006, p. 61). The factors determining patient satisfaction with the quality of hospital services include: professionalism and competence of medical staff, maintaining cleanliness in and around the hospital, or access to parking lots (Alibrandi et al., 2023). As a complement, the reliability of treatment processes and the speed of response of medical staff can be indicated (Meesala, Paul, 2018).

Researching satisfaction with the quality of hospital services in connection with the characteristics of the staff and the specificity of patients' perception of the hospital as a place of stay and treatment is a very complex research and practical challenge (Elbeck, 1987). The problem results, among other things, from the very essence of the services provided, as well as the characteristics of medical care. The basic features include intangibility, heterogeneity and simultaneity, which de facto characterizes an intangible product. Intangibility, understood as "cannot physically be touched, felt, viewed, counted, or measured" (Mosadeghrad, 2014, p. 78) becomes crucial in this respect.

Attention should be paid to the difficulties in identifying and distinguishing satisfaction and quality of services in health care settings. The literature on the subject indicates difficulties of a conceptual and operational nature (Taylor, Cronin, 1994, p. 34). Conceptual difficulties usually concern the process of naming and defining, while operational difficulties - developing procedures and establishing rules enabling the characterization and identification of significant features. Therefore, it is difficult to disagree with the belief that "quality of care can only be understood within the overall context in which health care is provided" (Campbell et al., 2000, p. 1617).

In research on the quality of medical services in connection with the characteristics of staff, three main categories are distinguished (Mosadeghrad, 2014):

- patient related factors,
- provider related factors,
- environmental factors.

Each category is described by analyzing subsequent properties. The category: patient related factors is defined by explaining such issues as patient socio-demographic variables, patient cooperation and type of patient illness. In the group: provider related factors, analysis is carried out taking into account provider socio-demographic variables, provider competence and provider motivation and satisfaction. In turn, the third group of factors includes: healthcare system, resources and facilities, leadership and management, collaboration and partnership development (Mosadeghrad, 2014).

When considering satisfaction in connection with staff characteristics, it is worth paying attention to research on the gap between patients' expectations regarding the quality of medical services and the beliefs of service providers, i.e. medical care units. The research conducted leads to very interesting conclusions. Firstly, service providers believe that patients have lower expectations regarding the quality of services than in reality. Secondly, both patients and service providers consider attributes such as explanations, level of knowledge and attention dispensed by health professionals to be equally important (Cammpos et al., 2017).

The first conclusion may seem quite surprising. Especially with the increasing awareness of patient rights, including: to comprehensive and understandable information about your health, access to medical records, and to raise objections and assert your rights. However, from a researcher's perspective, recognizing patients' expectations and identifying factors contributing to satisfaction and those causing dissatisfaction, supplemented by a broad information campaign among medical staff, opens new interesting fields for empirical exploration. Taking into account the importance of factors such as explanations, level of knowledge and attention dispensed by health professionals, it seems justified to attempt to explore the phenomenon of satisfaction with the quality of hospital services in connection with the characteristics of the staff.

3. Material and methods

Empirical research was conducted in accordance with the following research procedure:

- adopting the research assumption and formulating the research problem,
- indication of the research purpose and research question,
- formulating research hypotheses,

- development of a research project,
- determination of the research sample, selection of the research method and development of the research tool,
- conducting the actual examination.

For the purposes of the study, the following assumption was made: it is possible to improve the quality of hospital services by strengthening human capital. The research problem concerned the search for staff attributes in the context of achieving patient satisfaction with the quality of hospital services.

The aim of the research was to identify the staff attributes that most determine patient satisfaction. The following research question was asked: how can human capital be strengthened to increase the quality of hospital services? The search for an answer to this question set the direction of the research procedure. The research hypotheses were formulated as follows:

- H0: professionalism is the most important staff attribute determining patient satisfaction with the quality of hospital services,
- H1: it is possible to identify gaps between the staff attributes of the greatest importance and impact on achieving the level of satisfaction with the quality of hospital services and the level resulting from the actual assessment of satisfaction of patients hospitalized in the hospital,
- H2: it is possible to indicate ways of strengthening human capital to increase the quality of services provided in the hospital.

The intention of the conducted research and analyzes is to verify the above statements.

When designing the study, a finite set of 41 factors determining the quality of hospital services were taken into account, including those describing the material infrastructure, organization of hospital services, quality of medical services, quality of additional services and staff. Six attributes characterize hospital staff (Table 1).

Table 1.

Attributes related to the staff

No.	Attribute
1	professionalism understood as the ability to make fast and correct diagnoses and select appropriate treatment
2	inspiring trust and a sense of safety among patients
3	kindness and politeness towards the patient and his family members
4	individualized approach to the patient as openness and responsiveness to their problems and needs
5	communicativeness i.e. adaptation of the way of communicating information to the needs of the patient and his family members
6	professional appearance adapted to the role, function and responsibilities

Source: Own study based on theoretical and empirical research.

The set of 41 factors was selected as a result of a review of the subject literature and interviews conducted with patients of the selected hospital. Literature research was aimed at identifying the state of knowledge about the quality factors of hospital services (based on: Alibrandi et al., 2023; Andaleeb, 2001; Asiamah et al., 2022; Akthar et al., 2023; Alibrandi et al., 2023; Babakus, Mangold, 1992; Boomija, 2019; Cheng, 2005; Cohen, 2002; Hoseinpouarfard et al., 2012; Ivanková et al., 2020; Luna-Aleixos et al., 2023; Marzban et al., 2017; Meesala, Paul, 2018; Mosadeghrad, 2014; Rourke, 1991; Salomon, 1999; Shuv Ami, Shalom, 2020; Teng et al., 2007; van Loenen et al., 2014; Wang et al., 2021; Zeithaml, Bitner, 2000, p. 61; et al.).

An interview based on a free dialogue with 10 patients of the Internal Medicine Department of the Blessed Virgin Mary Provincial Specialist Hospital in Częstochowa (Poland) was carried out on February 6, 2023. The selection of the research sample was random. The sample was diverse in terms of gender and age. Free dialogue with patients mirrored the course of an informal conversation, giving the subjects the opportunity to freely express their opinions and share their own thoughts. The research material obtained reflected the respondents' spontaneous statements.

The features distinguished in Table 1 served to characterize three professional groups, i.e.:

- doctors (D),
- nurses, midwives and medical lifeguards (NM),
- other medical staff (laboratory diagnosticians, physiotherapists, nutritionists, etc. (OMS)).

The empirical research project included two stages. The first one involved distinguishing attributes and classifying them into classes with different impact on the quality of hospital services. In this regard, the correlation between a given attribute and patient satisfaction was examined using satisfaction and dissatisfaction coefficients. Distinguishing the attributes with the greatest impact on the level of satisfaction and those determining the dissatisfaction of potential patients is the result of the first stage. In turn, in the second one, six staff attributes were assessed by patients of the selected hospital. The assessment of satisfaction resulting from the hospital stay is the basis for analyzing the factors determining the quality of hospital services. An attempt to identify gaps between the highest desired level of satisfaction and the level resulting from the actual assessment of patients will be the starting point for formulating recommendations regarding strengthening human capital to increase the quality of hospital services.

Empirical research was conducted at the national level (first stage) and among patients of the Blessed Virgin Mary Provincial Specialist Hospital in Częstochowa (second stage). In the first stage, the research sample consisted of 212 respondents, and in the second – 149. The characteristics of the research samples by age and gender are presented in Figure 1 (where "KANO respondents" refers to the first stage of the research and "patients" - the second). It should be noted that the research method used as well as the method of obtaining the results

influenced the collected research material. The use of the CAWI method (the first stage of the research) obligatorily imposed the requirement to answer each question included in the questionnaire. In turn, completing the questionnaires in paper form (during the second stage) resulted in missing answers to some questions.

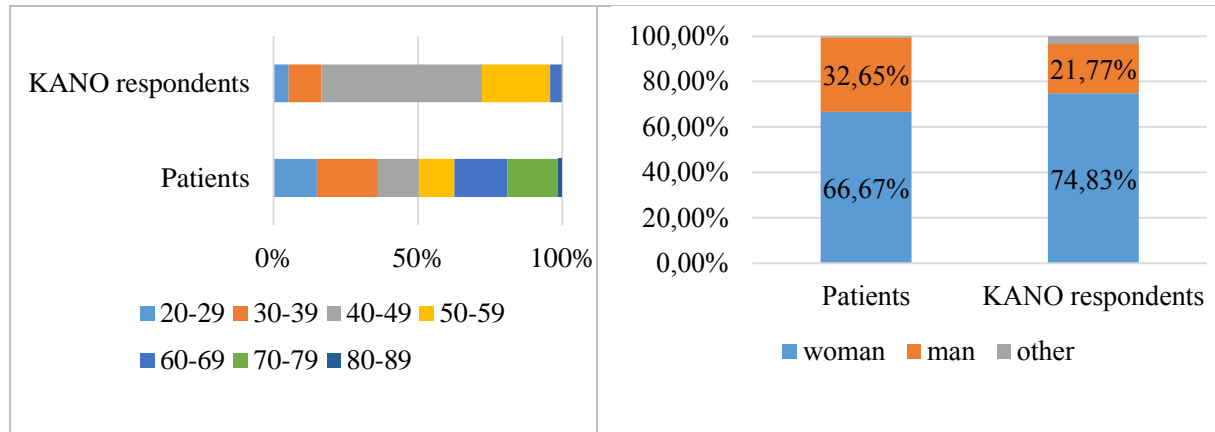


Figure 1. Age and gender of respondents.

Source: Own study based on empirical research.

The first stage of the research was carried out in July and August 2023 using the CAWI (Computer-Assisted Web Interview) electronic survey questionnaire in accordance with the Kano model construction methodology. In the area of quality management, this model is intended to identify and classify customer expectations towards products and services. In this case, patients' expectations towards the hospitalization process. Although the description of the Kano model is well-established in the literature on the subject (Mikulic, 2006; Lee, Newcomb, 1996; Jonsson Kvist, Klefsjo, 2006; Schvenefeldt et al., 1991; Nilsson-Witell, Fundin, 2005), this methodology is still insufficiently used in the practice of empirical research (Parasuraman, 1986). Which, in a sense, may indicate the use of an innovative research approach.

Table 2.

An example question related to attribute D1

D1. professionalism				
understood as the ability to make fast and correct diagnoses and select appropriate treatment				
a. What if it is the case? (functional form of the question)				
like it	expect it	don't care	live with it	dislike it
b. What if it is not the case? (dysfunctional form of the question)				
like it	expect it	don't care	live with it	dislike it

Source: Own study based on Kano's Methods.

The electronic survey questionnaire included a total of 41 factors determining the quality of hospitalization services, of which 6 of them directly concerned hospital staff. Two questions were asked for each attribute: the first one identifying the occurrence of a given feature, the second one identifying its absence. The set of answers included the following phrases: absolutely essential, expect it, don't care either way, can tolerate it, unacceptable (Matzler, Hinterhuber, 1998; Santhoshkumar et al., 2022). Table 2, for example, presents questions

(functional: what if this is the case? and dysfunctional: what if this is not the case?) for the selected attribute doctors: professionalism understood as the ability to make fast and correct diagnoses and select appropriate treatment (marked with the symbol D1 in the survey questionnaire). Then, compiling the obtained answers, the attributes were classified, assigning each of them to a given class: questionable (QE), attractive (AE), reverse (RE), indifferent (IT), one-dimensional (OD) and must-be (ME) - Table 3.

Table 3.

Kano evaluation table

Requirements		Dysfunctional				
		Like it	Expect it	Don't care	Live with it	Dislike it
Functional	Like it	QE	AE	AE	AE	OD
	Expect it	RE	IT	IT	IT	ME
	Don't care	RE	IT	IT	IT	ME
	Live with it	RE	IT	IT	IT	ME
	Dislike it	RE	RE	RE	RE	QE

Source: Own study based on Kano's Methods.

In the study of the correlation between a given staff attribute and patient satisfaction with the quality of hospital services, the following coefficients were used: satisfaction - CC (1) and dissatisfaction DC (2) (Berger et al., 1993). The CC value ranges from zero to one, and the closer it is to one, the greater the impact on patient satisfaction. In turn, in the case of the DC coefficient, the value remains close to one and patient dissatisfaction affects a given quality feature (Matzler, Hinterhuber, 1998).

$$CC = (AE + OD) / (AE + OD + ME + IT) \quad (1)$$

$$DC = (OD + ME) / (AE + OD + ME + IT) \quad (2)$$

In the second stage of the research, patient satisfaction with respect to the distinguished attributes of the quality of hospital services was assessed, including six attributes characterizing hospital staff, based on a paper survey questionnaire. Unlike the Kano methodology, in this case the assessment was carried out on a five-point scale, where the value of 5 meant patient satisfaction and 1 - dissatisfaction. The study was carried out in July and August 2023 with the participation of patients hospitalized in a selected hospital. Participation in the study was voluntary.

4. Results

The research material obtained in the first stage of the research allowed for the classification of staff attributes in accordance with the Kano model methodology. The study was divided into three professional groups, hence the results obtained were the basis for distinguishing key attributes for: doctors (D), nurses, midwives and medical lifeguards (NM) and other medical staff (OMS). The summary of the answers obtained along with the interpretation of the satisfaction (CC) and dissatisfaction (DC) coefficients of patients with the quality of hospital services were reflected in the categorization of attributes in individual professional groups of staff.

Among doctor's attributes, four out of six are considered attractive (Table 4). These included such features as: professionalism ((D1), inspiring trust and a sense of safety among patients (D2), kindness and politeness towards the patient and his family members (D3) and individualized approach to the patient (D4). For the distinguished features, the satisfaction coefficient (CC) is at a very similar level and only slightly exceeds the value of 0.5. This means that these attributes indeed influence the achievement of satisfaction by patients, however, which seems quite surprising, none of them reached the level close to unity. This is particularly puzzling in the case of professionalism understood as the ability to make fast and correct diagnoses and select appropriate treatment, where intuitively we can expect a much greater impact on patients' satisfaction with the quality of hospital services.

Table 4.

Set of response statistics from respondents according to the Kano methodology for attributes D1-D6

Attribut	ME	OD	AE	IT	CLASS	CC	DC
D1	18.40%	26.89%	31.13%	23.58%	AE	0.58	0.45
D2	18.40%	25.00%	31.13%	25.47%	AE	0.56	0.43
D3	18.40%	25.00%	31.13%	25.47%	AE	0.56	0.43
D4	18.40%	23.11%	35.85%	22.64%	AE	0.59	0.42
D5	18.40%	17.92%	26.89%	36.79%	IT	0.45	0.36
D6	8.49%	5.66%	22.17%	63.68%	IT	0.28	0.14

D – doctors.

Source: Own study based on empirical research.

Taking into account nurses, midwives and medical lifeguards, professionalism (NM1) is included in the attractive class, but with a slightly higher (0.03) level of satisfaction coefficient compared to doctors (Table 5). In the case of this professional group, two attributes: NM2 - inspiring trust and a sense of safety among patients and NM6 - professional appearance adapted to the role, function and responsibilities reach the IT class, i.e. a neutral state. This means that these attributes will not affect patients' feeling of satisfaction or dissatisfaction. This is confirmed by the indications of satisfaction coefficients (CC), where the value of 0.51 and 0.32 was obtained for this set of attributes, respectively.

Table 5.

Set of response statistics from respondents according to the Kano methodology for attributes NM1-NM6

Attribut	ME	OD	AE	IT	CLASS	CC	DC
NM1	13.21%	29.25%	31.60%	25.94%	AE	0.61	0.42
NM2	17.92%	21.70%	29.72%	30.66%	IT	0.51	0.40
NM3	17.92%	22.64%	31.60%	27.83%	AE	0.54	0.41
NM4	25.96%	17.31%	30.29%	26.44%	AE	0.48	0.43
NM5	22.64%	15.09%	32.55%	29.72%	AE	0.48	0.38
NM6	8.02%	5.66%	25.94%	60.38%	IT	0.32	0.14

NM - nurses, midwives and medical lifeguards

Source: Own study based on empirical research.

A similar distribution of satisfaction coefficients (CC) values was obtained for other medical staff (Table 6). In the case of this professional group, only one of the attributes, i.e. OMS6 - professional appearance adapted to the role, function and responsibilities, does not affect the level of patient satisfaction (IT class, i.e. a neutral state). This means that respondents participating in the study do not attribute the importance of this attribute to the quality of hospital services, which is reflected in the low value of the CC coefficient (0.29). In turn, all other attributes were classified as AE, i.e. attractive, with a slightly higher level of CC for the OMS1 attribute - professionalism understood as the ability to make fast and correct diagnoses and select appropriate treatment (as in the case of nurses, midwives and medical lifeguards).

Table 6.

Set of response statistics from respondents according to the Kano methodology for attributes OMS1-OMS6

Attribut	ME	OD	AE	IT	CLASS	CC	DC
OMS1	15.57%	26.89%	33.96%	23.58%	AE	0.61	0.42
OMS2	15.57%	21.23%	36.79%	26.42%	AE	0.58	0.37
OMS3	17.92%	19.81%	38.68%	23.58%	AE	0.58	0.38
OMS4	15.57%	19.81%	34.91%	29.72%	AE	0.55	0.35
OMS5	17.92%	17.92%	34.91%	29.25%	AE	0.53	0.36
OMS6	12,74%	5.66%	23.58%	58.02%	IT	0.29	0.18

OMS - other medical staff.

Source: Own study based on empirical research.

The second stage of the survey concerned the assessment of satisfaction of patients hospitalized in the selected hospital. Six staff attributes were assessed, of which four were extended to include another professional group - nonmedical staff. This was a purposeful procedure to compare the results obtained for medical and non-medical staff.

Table 7.*Basic statistics for staff attribute: professionalism (1) es in the patient satisfaction study*

		doctors	nurses, midwives and medical lifeguards	other medical staff	nonmedical staff
N	Valid	145	146	146	146
	Lack of data	2	1	1	1
Mean		4.68	4.71	4.68	4.77
Standard error		.052	.050	.048	.041
Median		5.00	5.00	5.00	5.00
Dominant		5	5	5	5
Standard deviation		.620	.601	.584	.495
Variance		.385	.361	.341	.245
Skewness		-1.789	-1.903	-1.705	-2.144
Standard deviation		.201	.201	.201	.201
Kurtosis		1.931	2.406	1.856	3.885
Standard deviation		.400	.399	.399	.399
Gap		2	2	2	2
Minimum		3	3	3	3
Maksimum		5	5	5	5
Percentiles	25	5.00	5.00	4.00	5.00
	50	5.00	5.00	5.00	5.00
	75	5.00	5.00	5.00	5.00

Source: Own study based on empirical research.

The assessment of patients' satisfaction with staff professionalism divided into four professional groups is similar and oscillates around the average value of approximately 4.7 (Table 7). The data show little variability, as confirmed by the low standard deviation values. Despite the noticeable slight skewness to the left and slightly higher kurtosis, the distribution of grades seems close to a normal distribution.

Table 8.*Basic statistics for staff attribute: inspiring trust and a sense of safety among patients (2) es in the patient satisfaction study*

		doctors	nurses, midwives and medical lifeguards	other medical staff
N	Valid	146	145	145
	Lack of data	1	2	2
Mean		4.51	4.74	4.68
Standard error		.065	.046	.052
Median		5.00	5.00	5.00
Dominant		5	5	5
Standard deviation		.781	.553	.620
Variance		.610	.306	.385
Skewness		-1.454	-2.030	-1.966
Standard deviation		.201	.201	.201
Kurtosis		1.116	3.132	3.319
Standard deviation		.399	.400	.400
Gap		3	2	3
Minimum		2	3	2
Maksimum		5	5	5
Percentiles	25	4.00	5.00	5.00
	50	5.00	5.00	5.00
	75	5.00	5.00	5.00

Source: Own study based on empirical research.

In view of inspiring trust and a sense of safety among patients, the results of patient satisfaction assessment indicate little variation in individual professional groups (Table 8). A slightly lower average was obtained for doctors compared to nurses, midwives and medical lifeguards (4.51 and 4.74, respectively) and other medical staff (4.68). The greatest variance and therefore greater variability of ratings concerns nurses, midwives and medical lifeguards. For this professional group and for other medical staff, a higher kurtosis was achieved, which means that the distribution of scores in this case is flatter than in the normal distribution. The skewness is negative for all surveyed professional groups (slightly to the left), which means that most of the satisfaction scores obtained are higher. The range varies between 2 and 3, i.e. there is limited variability between the ratings of this attribute.

Table 9.

Basic statistics for staff attribute: kindness and politeness towards the patient and his family members (3) es in the patient satisfaction study

		doctors	nurses, midwives and medical lifeguards	other medical staff	nonmedical staff
N	Valid	145	145	145	145
	Lack of data	2	2	2	2
Mean		4.58	4.70	4.77	4.74
Standard error		.068	.053	.042	.049
Median		5.00	5.00	5.00	5.00
Dominant		5	5	5	5
Standard deviation		.822	.636	.510	.589
Variance		.676	.405	.260	.348
Skewness		-1.968	-2.283	-2.528	-2.545
Standard deviation		.201	.201	.201	.201
Kurtosis		2.921	4.911	7.356	6.833
Standard deviation		.400	.400	.400	.400
Gap		3	3	3	3
Minimum		2	2	2	2
Maksimum		5	5	5	5
Percentiles	25	4.00	5.00	5.00	5.00
	50	5.00	5.00	5.00	5.00
	75	5.00	5.00	5.00	5.00

Source: Own study based on empirical research.

Similarly, slight differences in the assessment of the degree of patient satisfaction were noted for the next attribute, i.e. kindness and politeness towards the patient and his family members (Table 9). Although the ratings in this case are still quite high, some differences in individual professional groups are noticeable. In the case of doctors, nurses, midwives and medical lifeguards, the average satisfaction score is 4.58 and 4.70, while in the case of other medical and nonmedical staff, higher values were obtained (4.77 and 4.74, respectively). The standard deviation is relatively high, i.e. greater variability of assessments occurs in each professional group examined. Skewness is negative for all groups (slightly to the left) and the distributions of scores are concentrated more around higher values.

Table 10.

Basic statistics for staff attribute: individualized approach to the patient (4) es in the patient satisfaction study

		doctors	nurses, midwives and medical lifeguards	other medical staff	nonmedical staff
N	Valid	145	145	145	145
	Lack of data	2	2	2	2
Mean		4.51	4.70	4.70	4.74
Standard error		.071	.051	.049	.047
Median		5.00	5.00	5.00	5.00
Dominant		5	5	5	5
Standard deviation		.859	.614	.591	.562
Variance		.738	.377	.349	.316
Skewness		-1.733	-2.100	-2.067	-2.363
Standard deviation		.201	.201	.201	.201
Kurtosis		2.343	3.847	4.047	5.590
Standard deviation		.400	.400	.400	.400
Gap		4	3	3	3
Minimum		1	2	2	2
Maksimum		5	5	5	5
Percentiles	25	4.00	5.00	5.00	5.00
	50	5.00	5.00	5.00	5.00
	75	5.00	5.00	5.00	5.00

Source: Own study based on empirical research.

Analyzing the results presented in Table 10, the individualized approach to the patient nonmedical staff was rated highest - the average score was 4.74 (while among doctors the average score was 4.51, nurses, midwives and medical lifeguards - 4.70 and other medical staff - 4.70). Greater variability of assessments occurs in the doctors group (high variance). Skewness is negative in the case of all professional groups (slightly to the left), hence the distributions of scores are concentrated more around higher values and are more flattened (relatively high kurtosis).

Table 11.

Basic statistics for staff attribute: communicativeness (5) es in the patient satisfaction study

		doctors	nurses, midwives and medical lifeguards	other medical staff
N	Valid	144	146	144
	Lack of data	3	1	3
Mean		4.48	4.72	4.67
Standard error		.074	.049	.051
Median		5.00	5.00	5.00
Dominant		5	5	5
Standard deviation		.893	.596	.615
Variance		.797	.355	.378
Skewness		-1.701	-2.194	-1.854
Standard deviation		.202	.201	.202
Kurtosis		2.145	4.414	3.039
Standard deviation		.401	.399	.401
Gap		4	3	3
Minimum		1	2	2
Maksimum		5	5	5
Percentiles	25	4.00	5.00	4.00
	50	5.00	5.00	5.00
	75	5.00	5.00	5.00

Source: Own study based on empirical research.

Ratings for communicativeness of staff in individual professional groups are generally stable, with higher average values obtained for nurses, midwives and medical lifeguards and other medical staff (Table 11). The data shows greater variability in ratings compared to other attributes with higher standard deviation and variance. The distributions of ratings seem to be flatter, which indicates greater variability in the studied professional groups.

Table 12.

Basic statistics for staff attribute: professional appearance adapted to the role, function and responsibilities (6) es in the patient satisfaction study

		doctors	nurses, midwives and medical lifeguards	other medical staff	nonmedical staff
N	Valid	143	145	145	144
	Lack of data	4	2	2	3
Mean		4.76	4.81	4.78	4.81
Standard error		.042	.039	.042	.042
Median		5.00	5.00	5.00	5.00
Dominant		5	5	5	5
Standard deviation		.507	.471	.506	.506
Variance		.257	.222	.257	.256
Skewness		-1.987	-2.571	-2.601	-2.942
Standard deviation		.203	.201	.201	.202
Kurtosis		3.185	6.001	7.775	9.412
Standard deviation		.403	.400	.400	.401
Gap		2	2	3	3
Minimum		3	3	2	2
Maksimum		5	5	5	5
Percentiles	25	5.00	5.00	5.00	5.00
	50	5.00	5.00	5.00	5.00
	75	5.00	5.00	5.00	5.00

Source: Own study based on empirical research.

The analysis of the results presented in Table 12 leads to the conclusion that staff professional appearance is rated very highly by hospital patients. The average ratings in all professional groups remain at a similar level and range from 4.76 to 4.81. It is worth emphasizing that, despite some variability, the distribution of scores is concentrated around the highest values.

5. Conclusion

The conducted research allowed for the identification of six staff attributes that influence the level of patient satisfaction with the quality of hospital services. The search for attributes that most determine the achievement of a state of satisfaction was carried out in accordance with the Kano model methodology. Table 13 presents a summary of key staff attributes that are considered attractive from the perspective of a potential patient (i.e. classified as attractive). Study participants clearly perceived these attributes. It is important that these attributes meet the needs of the respondents, which in turn affects their level of satisfaction.

Table 13.
Map of key staff attributes influencing patient satisfaction with the quality of hospital services

Staff	Attribut					
	(1)	(2)	(3)	(4)	(5)	(6)
D						
NM						
OMS						

D - doctors; NM - nurses, midwives and medical lifeguards; OMS - other medical staff.

(1) professionalism understood as the ability to make fast and correct diagnoses and select appropriate treatment; (2) inspiring trust and a sense of safety among patients; (3) kindness and politeness towards the patient and his family members; (4) individualized approach to the patient as openness and responsiveness to their problems and needs; (5) communicativeness i.e. adaptation of the way of communicating information to the needs of the patient and his family members; (6) professional appearance adapted to the role, function and responsibilities.

a gray field in the table indicates a key attribute in a given professional group.

Source: Own study based on empirical research.

Taking into account the categorization of factors adopted in the Kano model (according to Table 3), it is worth emphasizing that none of the six examined attributes was included in the must-be (ME) class. Hence, the hypothesis H0: *professionalism is the most important staff attribute determining patient satisfaction with the quality of hospital services* was not confirmed. Professionalism understood as the ability to make fast and correct diagnoses and select appropriate treatment has been classified as AE - attractive with a satisfaction coefficient of 0.58 (for doctors) and 0.61 (for nurses, midwives, medical lifeguards and other medical staff).

Map analysis of key staff attributes influencing patient satisfaction with the quality of hospital services allows for the identification of key staff attributes for potential hospital patients. However, taking into account the context of the practice of managing a specific hospital and improving the quality of services, it is important to distinguish attributes that:

- have the greatest importance and the power to influence the quality of services,
- are characteristic of three professional groups.

It seems advisable to strengthen these attributes first. These attributes include (according to table 13):

- professionalism (1),
- kindness and politeness towards the patient and his family members (3),
- individualized approach to the patient (4).

In turn, for the effectiveness of designing and implementing solutions for the needs of a specific hospital, it is important to recognize the opinions of its patients. Therefore, referring to the results of research conducted at the Blessed Virgin Mary Provincial Specialist Hospital in Częstochowa makes it possible to indicate the attributes that are important but at the same time the highest or lowest rated. Due to high patient satisfaction ratings, an average level equal to or less than 4.71 is conventionally considered low (according to Tables 7-12).

The comparison of the results of the first and second stages of the study, i.e. staff attributes with the greatest importance and impact on the quality of hospital services and at the same time rated the lowest by hospital patients, leads to the identification of gaps between the expected and actual status (Table 14). Hence, the hypothesis H1 was confirmed.

Table 14.

Identifying gaps between key staff attributes and low patient satisfaction scores

Staff	Attribut					
	(1)	(2)	(3)	(4)	(5)	(6)
D	//////////	//////////	//////////	//////////	//////////	
NM	//////////	//////////	//////////	//////////		
OMS	//////////	//////////		//////////	//////////	

D, NM, OMS, (1), (2), (3), (4), (5), (6) - designation as in table 13.

a blue field in the table indicates a key attribute in all three professional groups.

////////// a field in the table indicates an average rating less or equal to 4.71.

a blue and ////////// field in the table indicates the gap between the expected and actual state.

Source: Own study based on empirical research.

The detailed analysis of staff attributes can be a starting point for designing solutions that strengthen the hospital's human capital. It seems reasonable to first focus on two attributes (Table 14):

- professionalism understood as the ability to make fast and correct diagnoses and select appropriate treatment (1),
- individualized approach to the patient as openness and responsiveness to their problems and needs (4).

Due to the complexity, diversity and dynamics of the hospital's organizational environment, it becomes advisable to use a comprehensive approach. With a view to strengthening the distinguished attributes, a comprehensive approach may mean developing the attitudes and skills of staff, as well as shaping a high organizational culture. In this respect, selected proposals for improvement in the area of knowledge, communication and cooperation are presented (Table 15). The hypothesis H2: *it is possible to identify ways of strengthening human capital to increase the quality of services provided in the hospital* was confirmed.

Table 15.

Selected ways for strengthening human capital to increase the quality of services provided in the hospital. Own proposal

Areas	Staff attitudes and skills	High organizational culture
Knowledge	active participation in training in the field of modern methods, techniques, clinical therapies and pharmacotherapy	development of professional development programs
	participation in seminars and industry conferences	
	free exchange of information based on the principle of mutual benefit	an atmosphere friendly to acquiring and sharing knowledge and improving professional qualifications

Cont. table 15.

Communication	improving the ability to listen to others without stereotypical thinking, interrupting speech and judging	developing a code of principles of good interpersonal communication
	active participation in training in interpersonal communication and dealing with conflict situations	developing soft skills improvement programs
	receiving and responding to patient feedback	developing an effective system for collecting patient opinions
Cooperation	active and voluntary involvement in teamwork	creating interdisciplinary teams
		promoting teamwork
	cooperation of clinical mentors (with extensive experience) with other staff	climate encouraging cooperation
	the practice of building lasting relationships with patients based on mutual respect and trust	practicing the formula of consultation meetings
active participation in consultation meetings		

Source: Own study.

It is worth emphasizing that strengthening professionalism is a long-term process that requires the involvement of not only staff and hospitals, but also the environment of medical facilities. Similarly, developing an individualized approach to patients requires the conscious involvement of both medical staff and management staff. As reported in the literature on the subject, staff play an important role in increasing the quality of hospital services (Walston, Chadwick, 2003). It seems important to create an organizational climate friendly to the conscious, responsible and active participation of staff in the improvement process. Undoubtedly, patient satisfaction surveys play a key role. And informing staff about the degree of satisfaction or dissatisfaction of hospitalized patients may be a factor strengthening change for the better. For example, Rozenblum et al. indicate a relationship between providing doctors with information on patient satisfaction and acceptance of implemented improvement programs (Rozenblum et al., 2013).

Undoubtedly, continuous strengthening of the medical environment and investing in the development of organizational culture can significantly improve the quality of care and the effectiveness of the treatment process. However, the inference made is subject to certain limitations. They result primarily from the size of the research sample and the scope and scale of empirical research. It can be assumed that expanding the research field to include the international environment could significantly enrich the considerations with comparative analysis. Then the conclusions formulated would become more universal. Moreover, supplementing the study of correlations between e.g. the length of hospitalization or the number of hospital stays and the level of patient satisfaction may be an interesting direction for further research.

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