

HOW DID THE USER PERCEPTION OF HEALTHCARE SERVICES CHANGED DURING THE PANDEMIC? THE PATIENT EXPERIENCE OF HOSPITALIZATION IN TUSCANY REGION (ITALY)

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Abstract

There is wide research on service quality and customer experience, including with application to healthcare. The pandemic has deeply changed the way in which several services are provided, particularly impacting high-contact and relation-intensive services, such as healthcare services. How did the perception of healthcare services' users change during the pandemic? Little research has been conducted on patient experience with healthcare services in times of crisis. This study investigates the perception of hospitalization experience in an Italian region (Tuscany), prior to and during the COVID-19 pandemic. Data on satisfaction, emotional and informative support, technical aspects, and facility comfort were collected using a continuous and ongoing cross-sectional web survey on hospitalization experience. Results demonstrate that, overall, during the pandemic, hospitalized patient experience remained essentially stable, some worsened, and some measured dimensions even improved in comparison with the period before COVID-19. To gain further insights, changes in patient experience during the different pandemic waves were also explored. Different patterns emerged during the different waves of pandemic, showing that the various dimensions of experience can differently be affected by a global crisis.

Key words: Health marketing; user experience; COVID-19

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Introduction

There is wide research on service quality and customer experience, including with application to healthcare. Studies have mainly been performed in situations of normality. The pandemic has deeply changed the way in which several services are provided, particularly impacting high-contact and relation-intensive services, such as healthcare services. For instance, physical distancing and protection equipment was mandatory in service provision to slow down viral transmission (Glass et al., 2006). How did the perception of healthcare services' users changed due to the changed led by these unprecedented circumstances? Little research has been conducted on patient experience with healthcare services in times of crisis, in particular during a global pandemic that tested healthcare systems' capacities to respond. This study investigates the perception of hospitalization experience in an Italian region (Tuscany), prior to and during the COVID-19 outbreak. Data on satisfaction, emotional and informative support, technical aspects, and facility comfort were collected using a continuous and ongoing cross-sectional web survey on hospitalization experience.

Theoretical background

The delivery of services requires human interactions between the front-office providers and the customer. In delivering services, a memorable experience that can produce favorable word-of-mouth implies kindness, caring and additional relational efforts in human interactions (Berry, 2016). The healthcare sector is particularly characterized by the provision of high-contact and relation-intensive services, which are mostly provided by direct encounters and interactions between users (hereafter patients) and providers (hereafter healthcare professionals). Consequently, interpersonal interactions not only affect customer experience and satisfaction in healthcare (Hausman, 2004; McColl-Kennedy et al., 2017), but can also produce an emotional response in patients (Schembri and Sandberg, 2011). In the patient experience with healthcare services, the relational component of the experience is considered much more crucial, rather than their technical expertise (Berry and Bendapudi, 2007).

In the relational domain of the healthcare service provision, a key aspect is the information asymmetry between patient and provider (Berry and Bendapudi, 2007; De Rosis et al., 2019). Patients generally do not choose; they need healthcare services. Additionally, they are in a sensitive and weak situation due to their illness. Therefore, both informative, and emotional support are crucial components of a good patient experience.

The cognitive and emotional components of the customer service experience have been emphasized as relevant components of service quality also in other sectors (Berry et al., 2002; Edvardsson, 2005; Grönroos, 2000; Roy et al., 2015; Schembri and Sandberg, 2011; Wong, 2004). These aspects are much more important in sectors which are intensive in terms of human-human interactions, such as the healthcare sector where services are highly personal and relation-intensive (Berry, 2019; Berry and Bendapudi, 2007; Hausman, 2004; McColl-Kennedy et al., 2017; Mechinda, 2011).

Service quality dimensions are context-specific (Parasuraman et al., 1993; Ladhari, 2008). While service quality in general in the user perspective has been defined around five dimensions, namely tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1985, 1988), the healthcare services present specific characteristics, such as those above mentioned. Several scholars developed specific healthcare services' quality evaluation tools, with a particular focus on interpersonal and relational aspects (Dagger et al., 2007; Ramsaran-Fowdar, 2008; Vinagre and Neves, 2008). Recently, some scholars suggested a classification of healthcare services' quality under pivotal, core and peripheral dimensions (Upadhyai et al. 2020), where the first one includes professional knowledge, skills, and competence, need management, safety; the second one encompasses the process in terms of admission, stay and discharge, the medical communication, and the personnel behaviors; the third one the facility comfort such as quality of the physical infrastructure (i.e., room or ward). In general, there are several widely used tools to evaluate healthcare users' experiences considering the specificity of high-contact and relation-intensive services such as the healthcare ones. Patient reported-experience measures (PREMs) are widely and increasingly used for measuring service quality and quality of care from the patient perspective, as well as for benchmarking and accreditation purposes (Anhang Price et al., 2014; Cleary, 2016; Coulter, 2006; Coulter et al., 2009; Donabedian, 2005; Nuti et al., 2017; Slawomirski et al., 2018). Patient experience metrics usually include questions of relevance to patients, the key dimensions of experience to be considered in evaluating healthcare services, and in particular the hospitalization experience, such as (Coulter, 2006; Coulter et al., 2014):

- Responsiveness: informative support from healthcare professionals to patients; patient involvement (i.e., shared decision-making between patient and healthcare professionals);
- Empathy: emotional support and relational aspects (i.e., respect and dignity of the person; anxiety management);
- Reliability: coordination and teamworking (i.e., between doctors and nurses); pain management;
- Tangibles: comfort of the environment (i.e., ward hygiene and silence);
- Process: access to care (i.e., reasons for choosing a specific provider, waiting time);
- Satisfaction: word-of-mouth (i.e. willingness to recommend the provider).

Healthcare user experience in front of the pandemic

In a period of lockdown and social-distancing measures, such as the 2020 coronavirus pandemic, human interaction can be considered as a fundamental aspect determining perceptions of healthcare services' quality. COVID-19 measures adopted in hospitals increased physical distancing and may have emphasised perceived distance in human-human interactions.

Emotional and psychological support are key aspects in caring for hospitalized people (Faccincani et al., 2020). A very recent study found that, during the COVID-19 outbreak, patients have narratively expressed feeling of gratitude to healthcare professionals, underlining their professionalism and compassion as key positive aspects (Guney et al., 2020). During the unprecedented situation of a global pandemic, we can expect that hospitalists have a greater need to address patients' emotional reactions such as fear and anxiety, likely exacerbated by a lack of or decrease in caregiver presence and support, as well as a general reduction of human-

human interactions. The quality of interactions and communication may have worsened from the patients' point of view. The above-mentioned measures of COVID-19 containment necessarily changed the provision of hospital services, and the patient experience with them. Non-COVID patients would also have had a unique experience of hospitalization during the pandemic.

To the best of our knowledge, little research has been conducted on the patient experience with healthcare services in times of crisis, in particular no research on patient experience before and during the coronavirus pandemic is currently available. To the best of our knowledge, there are no studies investigating whether and how users' perception of their hospitalization experiences changed during the COVID-19 pandemic.

Objective:

The current study aims at answering to the following research question: What was the effect of the pandemic on patient's experience during hospitalization? The objective is to analyse how patient experience with regular hospitalization changed during the pandemic, by comparing data on patient experience in 2019 and 2020, also looking at the different pandemic waves.

Methodology:

Patient experience data collection

This study uses data from the continuous and cross-sectional web survey of hospitalisation experiences in Tuscany: the 'PREMs Observatory'. The PREMs Observatory collect data from hospitalized patients covering the abovementioned dimensions of care following the standard phases of hospitalization: access, hospital stay and discharge (De Rosis et al 2019). It is an ongoing initiative, currently implemented in some Italian regions between 2017 and 2019, which continuously collects patient experience data in a systematic way. The observatory provides quantitative and qualitative information, through an augmented questionnaire matching standard closed-ended questions with narrative sections. Data collection takes place completely digitally. Collected data is also returned in real time to healthcare professionals on a web platform, for trend monitoring and benchmarking within and among healthcare organizations (De Rosis et al., 2020). The Observatory was able to hear the patient's voice even during the pandemic period (Gilmore et al. 2020).

This study uses data from the Tuscany Region PREMs Observatory, which includes eight healthcare organizations: three local health authorities (LHAs) (namely, AUSL Nord Ovest, Sud Est, Centro), four teaching hospitals (THs) (namely, Azienda Ospedaliero-Universitaria or AOU Pisana, Careggi, Senese, Meyer) and a tertiary specialized hospital (Fondazione Toscana G. Monasterio - FTGM). Since the AOU Meyer is a paediatric hospital, the questionnaire presents additional questions in order to explore the experience of both child patients and adult parents or relatives (Corazza et al. 2021).

The comparison was performed using questionnaires from people discharged from a hospitalization with regular admission, excluding people discharged from intensive care and nursery ward. The ASL Sud Est started data collection in February 2020, and for this reason was excluded from the comparisons. Considering these exclusions, during 2019, the number of questionnaires were 15,019, while in 2020 were 9,656 (Table 1).

Type of healthcare organization	Healthcare organizations	Respondents	
		2019	2020
LHA	AUSL Centro	3420	820
LHA	AUSL Nord Ovest	5839	4246
TH	AOU Pisana	2628	2963
TH	AOU Senese	651	246
TH	AOU Careggi	547	445
TH	AOU Meyer	1174	570
TH	FTGM	760	366
	TOT	15019	9656

Table 1: Number of questionnaires collected 2019-2020

The questionnaire is made up of a total of 39 questions, organized following the hospitalization process (Upadhyai et al. 2020), from the admission, to the hospitalization experience, to the discharge phase. It also contains socio-demographic characteristics of the respondents. Questions are formulated according to the reporting style, based on a 3 or 5-point Likert-scale. Reporting questions make it possible to detect specific events or aspects experienced by the patient during hospitalization (Coulter et al. 2009). The satisfaction questions only are formulated as rating questions, where patients are required to express evaluations.

Questions cover the topics already cited above, as reported in the Table 2. All details relating to the patient experience questions and the entire questionnaire are reported by De Rosis and colleagues (2020).

Domain	Variable	Levels	Question	Likert Scale
Emotional support (Empathy)	Fears and anxieties management	Clinicians, nurses	During this hospital stay, do you think that the ward staff supported you in facing your fears and anxieties?	1-5
	Respect and dignity for the person	Clinicians, nurses	During this hospital stay, do you think that the ward staff treated you with respect and dignity?	1-5
	Speaking as the patient is not present	Clinicians, nurses	During the hospitalization, did the doctors talk to each other in front of you as if you were not present?	1-5
	Courtesy during the hospital reception		During the hospitalization, were you welcomed with kindness and courtesy by the ward staff?	1-3
Informative support (Responsiveness)	Patient involvement in decision-making		During this hospital stay, were you involved by the health professionals as much as you would like in the choices related to your care?	1-5
	Clear answers	Clinicians, nurses	During this hospital stay, were the answers given by staff to your questions clear?	1-5
	Communication with relatives and caregivers		During this hospital stay, was easy for your family (or someone else close to you) to be informed about your health conditions?	1-5
	Clear info at discharge - at home		Before you left the hospital, did you receive clear information on what to control once back home (i.e. physical activity, food, smoking,...)?	1-3
	Clear info at discharge - pharma		Before you left the hospital, did you receive clear information on any drugs to take once back home?	1-3
Technical and competence-	Team-working between clinicians and nurses		During this hospital stay, do you think that ward medical and nursing staff collaboratively worked together?	1-5

related aspects (Reliability)	Pain management		During this hospital stay, do you think that the ward staff did everything possible to help you manage your pain?	1-5
Physical Environment (Tangibles)	Silent ward		Was the ward (room, bathroom, corridors, other common spaces, etc.) quiet?	1-5
	Clean ward		Was the ward (room, bathroom, corridors, other common spaces, etc.) clean?	1-5
Satisfaction	Overall evaluation		How do you evaluate the assistance received in the department?	1-5
	Willingness to recommend		In case of need, would you recommend this ward to relatives / friends / acquaintances with the same health problem as you?	1-3

Table 2: Domains, variables and questions measuring patient experience with hospitalization. The levels in the Table indicate if the same question was asked to the patients for different groups of healthcare professionals. In the Likert scale, 1 always represents the lowest level of experience, while 3 or 5 the highest one.

Development of patient indicators

The patient experience indicators were computed beyond the minimum threshold of 20 responses per question. The individual responses to each question were calculated at the sub-organizational level, namely for each hospital within LHAs or for each teaching hospital. Values recorded were converted into a standardized indicator from 1 (worst evaluation) to 100 (best evaluation). The average value registered for the different hospitals within a LHA was reported as the value of the entire LHA and constitutes the final value of the indicator. In total, 31 indicators were developed based on the different patient experience dimensions covered in the questionnaire. For the purposed of this study, the authors used 16 indicators.

Some data correction procedures were used to calculate the patient experience indicators. To ensure the representativeness of the respondents in respect to the inpatient population of each hospital at sub-organizational level, the two populations of hospitalized patient and actual respondents are compared based on their socio-demographic characteristics (age, sex, education, and citizenship). The characteristics in which there is a statistically significant difference between the two populations were identified (age and sex) and used to segment the two groups into strata. Weights are attributed to the various identified strata, obtaining an estimate of the parameters of interest for the entire population. Then, to ensure the correct comparability of indicators among healthcare organizations with potential different groups of patients, patient data were subjected to a risk-adjustment procedure by correcting the experience measures for the following variables: patient sex, age, education, perceived health condition and if the questionnaire is completed by another person.

Calculation of the variation in the hospitalization experience between 2019 and 2020

To investigate changes due to the pandemic, the trend was studied as a direct comparison between 2019 and 2020 patient experience indicators (prior to and during the COVID-19 outbreak), performed using bivariate analysis. To better investigate the effect of the pandemic looking at its different waves, the variation between each indicator of 2019 and 2020 was computed at the regional level, by quarter, as following:

$$var = \frac{2019\ value - 2020\ value}{2019\ value} * 100 .$$

The variation was expressed as percentage change in the value of experience measures. The graphical representations here provided uses histograms of the value percentage change comparing the results of 2020 with those of 2019, at the regional level, by quarter.

Results

Table 3 summarizes the main characteristics of respondents, in comparison with the previous year.

The main characteristics of respondents are distributed similarly in the two periods, without statistically significant difference. There is a prevalence of women among the respondents. Considering the characteristics of people that are usually discharge from hospitalization, there is a similar over-representation of younger and more educated patients, as reported in De Rosis and colleagues (2020), and Pennucci and colleagues (2020). Similarly, the distribution of patients hospitalized after an access from the emergency department is comparable between the two years. Answers are mainly given by the patients; however, the questionnaire can be completed by another person as well, in support of the patient.

Descriptive statistics of respondents			
Variables	Categories	2020 (%)	2019 (%)
Sex	Female	56,8	56,1
	Male	43,2	43,9
Age	<18	3,9	4,0
	18-44	24,3	25,5
	45-64	35,1	33,7
	>64	36,7	36,8
Level of education	No educational qualification / elementary education	16,4	18,3
	Lower middle high school	29,6	27,4
	Upper middle high school	35,7	36,1
	Graduate or postgraduate	18,3	18,2
Access from the emergency department	Yes	14,6	13,6
	No	85,4	86,4
Type of respondent	Patient	79,4	77,0
	Parent / guardian	5,9	6,0
	Another person	14,7	17,0

Table 3: Descriptive statistics of respondents

Trend analysis

By analysing the results of the direct comparison between 2019 and 2020, the authors found different patterns in changes, namely stable, negative, and positive trends.

Stable trend

The analysis showed that, in general, the perception of the hospitalization experience remained similar during the pandemic, if compared with the year before. The authors found a stable trend regarding most of the analysed indicators. The statistical tests carried out in order to test any differences between 2019 and 2020 produced non-statistically significant results with respect to:

- Courtesy during the hospital reception;
- Respect and dignity for the person;

- Fears and anxiety management;
- Pain management;
- Patient involvement in decision making;
- Clear answers of the personnel;
- Clear information at the discharge;
- Team-working between clinicians and nurses;
- Willingness-to-recommend;
- Overall evaluation.

Negative trend

The only aspect of experience that patients reported as worsened is related to how easy it is for relatives and caregivers to communicate with health professionals (communication with relatives and caregivers). The 2019-2020 regional variation is 4 points (the value, calculated on a scale of 1 to 100, goes from 89 to approximately 85) and it is statistically significant ($p < 0.001$). The minimum value recorded in 2019 was 83.5, while in 2020 it was 65.5, with a standard deviation which more than tripled (from 2.3 to 7.5).

Additionally, it emerged a not significant worsening of the patient experience of the following aspects during the pandemic:

- Speaking as the patient is not present;
- Clear information at discharge;
- Silent ward.

Positive trend

The dimension of the experience relating to the cleaning of hospital environments recorded an improvement (clean ward). The 2019-2020 variation is statistically significant ($p = 0.07$) and ranges from 74.5 to 76.5 points at the regional level, based on a scale from 1 to 100. The maximum value recorded in 2019 was 82.3, while in 2020 was 91.6, and the standard deviation moved from 3 to 4.7.

Percentage variation at regional level, by quarter

The analysis of 2019-2020 variation provided additional information to the authors, which put light on how the patient experience changed during the different waves of COVID-19. Some indicators that resulted stable overall, have instead varied during the year. Also in this case, the authors could find different patterns of changed perception of experience with the healthcare service.

For some indicators, the percentage variation resulted positive only during the first and last quarters, which respectively represent the first and second pandemic waves in Italy. These dimensions relate to:

- Team-working between clinicians and nurses: see Figure 1 as an example;
- Patient involvement;
- Clean ward;
- Overall evaluation;
- Willingness-to-recommend.

For other dimensions of patient experience, the variation is negative for the first three quarters of 2020, but it becomes positive during the last one. These dimensions are:

- Respect and dignity for the person;
- Clear answers.

The dimension measuring communication of health professionals with family and carers worsened throughout the year 2020, with an increasingly negative variation from the first to the last quarter.

Some indicators, instead, recorded a strong contraction during the first quarter, but then improved during the other quarters. More specifically, after the first wave, the contraction registered in 2020 gradually decreased, and the values returned to be very close to those of 2019. These indicators concern:

- Silent ward;
- Speaking as the patient is not present.

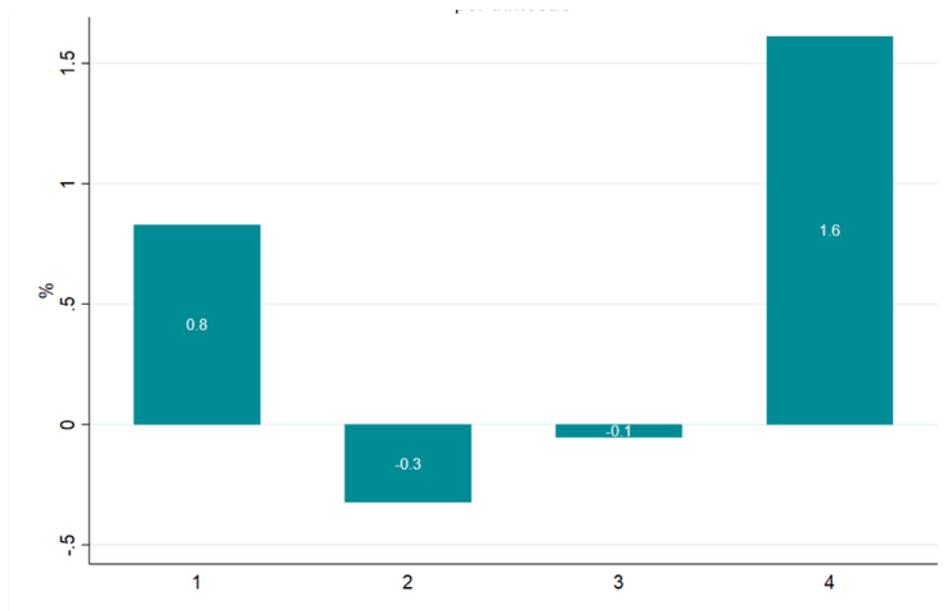


Figure 1: Team-working: percentage variation of the patient indicator at the regional level, by quarter. Numbers in the abscissa axis indicates the quarters of the two years considered (i.e., 1 stays for 1st quarter).

Discussion:

Results demonstrate that, surprisingly, during the pandemic, hospitalized patient experience remained essentially stable, and some measured dimensions even improved. In particular, the patient perception of the cleanliness of hospitalization environments enhanced. It might be driven by the hygiene and safety policies introduced and strengthened with COVID-19. Maintenance of high level of hygiene is always essential in health care, and it was a critical area of improvement in patients' opinions until January 2020. However, in a crisis phase, a clear perception of the patients related to the attention to this aspect emerged, and reflects the commitment of healthcare professionals to face and contain the spread of COVID-19. The

authors argued that this result can be read as a demonstration of a renewed attention of patients to this concrete, not-relational, aspect, which returned crucial during the global pandemic; and, additionally, as a proof of the robustness of patient data, since their perception measured the effect of an increased attention to safety measures in hospital.

Similarly, the negative trend recorded in relation to communication of family and carers with health professionals can be easily explained based on the contagion containment policies, which have affected the possibility of relatives and carers to enter the hospital and visit the wards. Patients correctly reported this change. Looking at the quarterly variation, the ability of health professionals to communicate with family and carers worsened throughout the pandemic, with an increasingly negative variation from the first to the last pandemic wave. This worsening evaluation of patients over time was probably affected by the expectations of an organizational change during the COVID-19 that could improve the communication with caregivers. Even if this aspect was negatively impacted, the overall experience was not compromised.

Although not statistically significant, other aspects of experience worsened during the pandemic, namely the silence in the ward, the professionals' behaviours of speaking as the patient was not present and the quality of information at discharge. The authors argued that this reflects the extraordinary of the pandemic events, and the need of healthcare professionals to quickly re-organize the hospital service and to collect additional information on the pandemic evolution. This is confirmed by the analysis of variations. The practice of doctors to speak in front of the patients without considering them, as if not present, has become decreasingly persistent during the pandemic. The variation is strongly negative during the first pandemic wave, but improves during the year 2020, until the value become almost the same as the value registered in 2019 during the last pandemic wave. This result might show that, during the two waves, when reorganization of processes in the service provision was needed, professionals were much more focused on these aspects rather than on human and relational aspects of care. They had to talk each other much more than in other period, since they had to introduce and establish a different daily practice. As reported by De Rosis and colleagues (2021), some organizational aspects are transparent to patients who instead need the presence of the personnel caring for them, and of clear information on what is going on, also in terms of service provision. This explanation is reinforced by the results showing the improvement of some only during the last pandemic wave, that are the ability to respect and treat patients with dignity and that of giving clear answers. During the second wave, professionals were more prepared and the impact on relational aspects of service provision was lower.

The analysis of the percentage variation of the indicators, at a regional level, by quarters, showed the so-called "COVID-19 effect" or "reverse compassion effect" evident (Gilmore et al 2020). Overall patient experience stability can be explained by improvement peaks in some of the dimensions during the two waves of COVID-19 in Italy. This effect could be caused by a greater patients' empathy in the direct experiences of hospitalization, changing the way in which they assessed services and their quality. In particular, the pandemic affected collective psychology, triggering prosocial behaviours as seen in the wide support for front-line healthcare workers who saved lives while putting themselves at risk. Early in the pandemic, greater empathy emerged in the public conversation, in the press, and on social media, which is linked to prosocial behaviours that accompany the broader sense of solidarity during the outbreak (Batson, 2014; Galea, 2020). These forces could have been transposed into the hospital setting,

creating a new or greater sense of compassion which changed the ways patients perceived and reviewed their experiences (Gilmore et al., 2020).

This effect is particularly evident for the dimensions which increased during the two waves of COVID-19. In a period of pressure on the front line, in the eyes of the patients the collaboration between doctors and nurses improved in correspondence of the two waves. This can be explained as an appreciation of patients for the providers who contemporarily cared for them, fought the virus spreading and address the emergency reorganizing healthcare services' provision in the hospital. The same effect is measured for the perception of cleanliness, and for the two satisfaction measures (overall evaluation and willingness-to-recommend).

Limitations

The current study has some limitations. The statistical analyses could be improved by using more complex models, and adjusting data for confounding factors, such as type of hospital, access from emergency department.

The analysis is carried out on a regional level and can be replicated in the other regions and countries where the same PREMs Observatory has been implemented. Currently, the PREMs Observatory is present in two Italian regions, Tuscany and Veneto (De Rosis et al., 2020) and in Latvia (Corazza et al., 2021).

This study focuses on analysing the experience of hospitalized patients during the pandemic, however further investigation is needed on the psychological determinants that influenced the evaluation of this experience. Qualitative analysis, for instance using patients' narratives, can help in explaining the factors affecting the healthcare services' user evaluation.

References

- Anhang Price, R., Elliott, M.N., Zaslavsky, A.M., Hays, R.D., Lehrman, W.G., Rybowski, L., Edgman-Levitan, S., et al. (2014), "Examining the role of patient experience surveys in measuring health care quality.", *Medical Care Research and Review: MCRR*, NIH Public Access, 71(5):522–54.
- Batson, C.D. (2014), "The Altruism Question, The Altruism Question", Psychology Press, New York, available at: <https://doi.org/10.4324/9781315808048>.
- Berry, L.L., Carbone, L.P. and Haeckel, S.H. (2002), "Managing the total customer experience", *MIT Sloan Management Review*, 43(3):85-89.
- Berry, L.L. and Bendapudi, N. (2007), "Health care: a fertile field for service research", *Journal of Service Research*, 10(2):111-112.
- Berry, L.L. (2016), "Revisiting 'big ideas in services marketing' 30 years later", *Journal of Services Marketing*.
- Berry, L.L. (2019), "Service innovation is urgent in healthcare", *AMS Review*:1–15.
- Cleary, P.D. (2016), "Evolving concepts of patient-centered care and the assessment of patient care experiences: Optimism and opposition", *Journal of Health Politics, Policy and Law*, 41(4):675–696.

- Corazza, I., Gilmore, K. J., Menegazzo, F., & Abols, V. (2021). "Benchmarking experience to improve paediatric healthcare: listening to the voices of families from two European Children's University Hospitals". *BMC health services research*, 21(1), 1-13.
- Coulter, A. (2006), "Can patients assess the quality of health care?", *BMJ (Clinical Research Ed.)*, BMJ Publishing Group, 333(7557):1-2.
- Coulter, A., Fitzpatrick, R. and Cornwell, J. (2009), "Measures of Patients' Experience in Hospital: Purpose, Methods and Uses, King's Fund", available at: https://www.kingsfund.org.uk/sites/default/files/Point-of-Care-Measures-of-patientsexperience-in-hospital-Kings-Fund-July-2009_0.pdf.
- Coulter, A., Locock, L., Ziebland, S. and Calabrese, J. (2014), "Collecting data on patient experience is not enough: they must be used to improve care.", *BMJ (Clinical Research Ed.)*, British Medical Journal Publishing Group, 348:g2225.
- Dagger, T.S., Sweeney, J.C. and Johnson, L.W. (2007), "A hierarchical model of health service quality: scale development and investigation of an integrated model", *Journal of Service Research*, 10(2):123-142.
- De Rosis, S., Pennucci, F., & Nuti, S. (2019). "From experience and outcome measurement to the health professionals' engagement". *Micro & Macro Marketing*, 28(3):493-520.
- De Rosis, S., Cerasuolo, D., & Nuti, S. (2020). "Using patient-reported measures to drive change in healthcare: the experience of the digital, continuous and systematic PREMs observatory in Italy". *BMC health services research*, 20(1): 1-17.
- De Rosis, S., Barchielli, C., Vainieri, M., Bellé, N., (2021). "The relationship between healthcare service provision models and patient experience". *Journal of Health Organization and Management*. In press. DOI:10.1108/JHOM-06-2021-0242
- Donabedian, A. (2005), "Evaluating the quality of medical care. 1966.", *The Milbank Quarterly*, Milbank Memorial Fund, 83(4): 691-729.
- Edvardsson, B. (2005), "Service quality: beyond cognitive assessment", *Managing Service Quality: An International Journal*, 15(2):127-131.
- Faccincani, R., Pascucci, F. and Lennquist, S. (2020), "How to Surge to Face the SARS-CoV-2 Outbreak: Lessons Learned From Lombardy, Italy", available at:<https://doi.org/10.1017/dmp.2020.64>.
- Galea, S. (2020), "Compassion in a time of COVID-19", available at:[https://doi.org/10.1016/S0140-6736\(20\)31202-2](https://doi.org/10.1016/S0140-6736(20)31202-2).
- Glass, R.J., Glass, L.M., Beyeler, W.E. and Min, H.J. (2006), "Targeted social distancing design for pandemic influenza", *Emerging Infectious Diseases*, Centers for Disease Control and Prevention (CDC), 12(11):1671-1681.
- Grönroos, C. (2000), "Service management and marketing: A customer relationship management approach".

- Gilmore, K. J., De Rosis, S., & Nuti, S. (2020). "PNS245 Do Patient Preferences Change in a Pandemic? Exploring Italian Patient Reported Experience data during the COVID-19 Crisis". *Value in Health*, 23,:S682.
- Guney, S., Daniels, C. and Childers, Z. (2020), "Using AI to Understand the Patient Voice During the Covid-19 Pandemic", *NEJM Catalyst*, available at:<https://doi.org/10.1056/CAT.20.0103>
- Hausman, A. (2004), "Modeling the patient-physician service encounter: improving patient outcomes", *Journal of the Academy of Marketing Science*, 32(4):403.
- Ladhari, R. (2008), "Alternative measures of service quality: a review", *Managing Service Quality*, Vol. 18 No. 1, pp. 65-86.
- Mechinda, P. (2011), "The impact of service climate and service provider personality on employees' customer-oriented behavior in a high-contact setting", *Journal of Services Marketing*, 25(2):101–113.
- McColl-Kennedy, J.R., Danaher, T.S., Gallan, A.S., Orsingher, C., Lervik-Olsen, L. and Verma, R. (2017), "How do you feel today? Managing patient emotions during health care experiences to enhance well-being", *Journal of Business Research*, 79:247–259.
- Nuti, S., De Rosis, S., Bonciani, M. and Murante, A.M. (2017), "Rethinking healthcare performance evaluation systems towards the people-centredness approach: Their pathways, their experience, their evaluation", *Healthcare Papers*, 17(2):56–64.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1985), "A conceptual model of service quality and its implications for future research", *Journal of Marketing*, 49(4):41–50.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988), "Servqual: A multiple-item scale for measuring consumer perc", *Journal of Retailing*, 64(1):12.
- Parasuraman, A., Berry, L.L. and Zeithaml, V.A. (1993), "More on improving service quality measurement", *Journal of Retailing*, Vol. 69 No. 1, pp. 140-148.
- Pennucci, F., De Rosis, S., & Passino, C. (2020). "Piloting a web-based systematic collection and reporting of patient-reported outcome measures and patient-reported experience measures in chronic heart failure". *BMJ open*, 10(10), e037754.
- Ramsaran-Fowdar, R.R. (2008), "The relative importance of service dimensions in a healthcare setting", *International Journal of Health Care Quality Assurance, Int J Health Care Qual Assur*, 21(1):104–124.
- Roy, S.K., Lassar, W.M., Ganguli, S., Nguyen, B. and Yu, X. (2015), "Measuring service quality: a systematic review of literature", *International Journal of Services, Economics and Management*, 7(1):24–52.
- Schembri, S. and Sandberg, J. (2011), "The experiential meaning of service quality", *Marketing Theory*, 11(2):165–186.
- Slawomirski, L., van den Berg, M., & Karmakar-Hore, S. (2018), "Patient-reported Indicator Survey (PaRIS): Aligning Practice and Policy for Better Health Outcomes", *World Medical Journal*, 64(3), available at: www.wma.net.

Upadhyai, R., Upadhyai, N., Jain, A. K., Roy, H., & Pant, V. (2020). "Health care service quality: a journey so far". *Benchmarking: An International Journal*, 27(6):1893-1927.

Vinagre, M.H. and Neves, J. (2008), "The influence of service quality and patients' emotions on satisfaction", *International Journal of Health Care Quality Assurance*, Emerald Group Publishing Limited, 21(1):87-103.

Wong, A. (2004), "The role of emotional satisfaction in service encounters", *Managing Service Quality: An International Journal*.