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Reverse compassion: value-in-use and value-in-context of healthcare services during crisis

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Abstract

Purpose – Using data from a continuous and ongoing cross-sectional web survey on hospitalisation service experiences in two Italian regions, the authors used multilevel and multivariate logistic regression models to identify factors related to users' demographics, emotional and informative support, technical and physical aspects of the provision, influencing satisfaction and willingness-to-recommend, before and during a crisis.

Design/methodology/approach – The value-in-use, defined in terms of a positive or negative value given by the experience with services, can be evaluated by users and influenced by the context of provision. The authors tested whether and how the value-in-use of services changed in a context of crisis. This study is applied to the healthcare sector during the coronavirus disease 2019 (COVID-19) epidemic, by evaluating the impact of the pandemic on hospitalisation experience.

Findings – Overall, analyses of 8,712 questionnaires found a greater value after the pandemic spread. In a time of crisis, technical and informative aspects of care were found to be most valued by patients that may recognise the extraordinary professionalism of workers during the crisis.

Research limitations/implications – This study empirically suggests that context can affect the evaluation of value-in-use by patients during unprecedented circumstances, producing additional value-in-context.

Practical implications – These findings imply that during critical periods where there is less scope for expressions of gratitude and appreciation towards front-line workers, user-reported data can be used for motivating professionals and increase resilience. These results reiterate the need to continue collecting and reporting the service users' voices, including as activity within plans for managing challenging situations.

Social implications – The level of healthcare system distress, due to the COVID-19 epidemic, positively affects patients' propensity to recommend, which the authors suggest is driven by healthcare services' feelings of reverse compassion. These findings imply that during critical periods where there is less scope for expressions of gratitude and appreciation towards front-line workers, user-reported data can be used for motivating professionals and increase resilience, which can have positive social implications. These results reiterate the need to continue collecting and reporting the service users' voices, including as activity within plans for managing challenging situations.

Originality/value – Research based on the intersection of theoretical and empirical research regarding value-in-use, value-in-context and service quality measured through user experience is scarce, in particular in the healthcare sector. The authors' findings set the direction for future research on the influence of context on value creation and value creation's perception by users, on the concept of reverse compassion and on reverse compassion's impact on organisational well-being, particularly in times of crisis.

Keywords Value-in-use, Value-in-context, User experience, Service quality, Healthcare, Crisis

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1. Introduction

Recently, Medberg and Grönroos (2020) argued that service quality is the way in which service customers experience value-in-use, providing empirical evidence in the context of retail. Value-in-use is dynamic and can be influenced by context (Chandler and Vargo, 2011). Not only can different individuals have a different perception of the same service, but also the same individual might perceive the same service differently according to the occasion and to the social context (Edvardsson *et al.*, 2011).

Medberg and Grönroos (2020) underlined the need of further studies on the experience of value for theory development, since evidence with managerial applicability are limited on this topic. There is wide research on service quality and customer experience, including with application to healthcare. However, there is no empirical account of value-in-use and value-in-context from public healthcare services' user perspective.

Additionally, studies have mainly been performed in situations of normality. Little research has been conducted on users' experiences with healthcare services in times of crisis, testing healthcare systems capacity to respond. Research of this nature could provide insights at two levels: for better understanding customer experience during crisis, so providing theoretical contributions to the field; and at a practical and managerial level, for improving service provision during future crises.

Drawing upon the literature that recognised value as experience and on the reported-experience as a tool for evaluating the value of services, we tested whether the existing user experience evaluation tools are able to capture both value-in-use and value-in-context in a time of crisis. We aim to build understanding of the contextual determinants of value creation, perception and evaluation during a social and systemic crisis. Specifically, this study is applied to the public healthcare sector, by evaluating the impact of the coronavirus disease 2019 (COVID-19) pandemic on hospitalisation experience. This paper contributes to the literature by (1) investigating how, in the context of the COVID-19 crisis, it changed the value created by some experiential aspects and (2) providing preliminary evidence on the concept of reverse compassion, as a specific driver of value-in-use given by the specific context and social context, of the crisis.

The research questions guiding this study are the following: (1) during the pandemic, did the value-in-use measured by patient evaluations of hospital experience worsen? (2) did the experiential aspects differently affect patient satisfaction and willingness-to-recommend during the pandemic? (3) did the emotional and informative domains of experience remain the only significant determinants of satisfaction and word-of-mouth (WOM) during the pandemic?

It offers a twofold contribution for the post-pandemic world: (1) an additional concept to explore, measure and value for supporting the front-line workers during future crisis; (2) novel evidence on the potential of user-reported data use for motivating professionals and increase resilience during crises, when there is less scope for expressions of gratitude and appreciation towards front-line workers providing services despite the circumstances.

1.1 The context

This study investigates public healthcare services users' perceptions of hospitalisation experience in two Italian regions (Tuscany and Veneto) in the context of the COVID-19 outbreak, just prior to and during the first wave (December 2019–April 2020).

During the COVID-19 outbreak, companies and organisations embraced strategies (whether mandated or voluntary) between service continuity and service hibernation (Tuzovic and Kabadayi, 2020), with some changes mandated according to the essentiality or non-essentiality of services. In the healthcare sector, especially in public provision, organisations had to assure healthcare service continuity and maintain priority functions

and operations. Healthcare systems had to address multiple challenging issues during the COVID-19 pandemic (Yetmar *et al.*, 2020). Being fully prepared for this pandemic would have been difficult, if not impossible, in particular for healthcare organisations in the countries first affected by the crisis (Boccia *et al.*, 2020; Faccincani *et al.*, 2020). Preparedness was also hampered by the decentralisation of healthcare systems, as in the Italian context (Boccia *et al.*, 2020).

Lombardy, Emilia-Romagna and Veneto regions had the highest numbers of COVID-19 cases (Boccia *et al.*, 2020). Different models were adopted for managing the crisis (Mugnai and Bilato, 2020). In Italy, in the early stages of epidemic spread, the clear separation between COVID patient, pathways and hospitals and COVID-free ones was not simple or rapid to implement; many hospitals were unprepared to put in place separate pathways, alongside concern about the impact of such changes on public anxiety and information (Bosa *et al.*, 2020).

New recommendations were developed and implemented, albeit initially less rapidly than the spread of contagion, suggesting physical distancing between patients and hospitalists; the use of personal protective equipment (PPE), such as medical masks; admission of patients with suspected disease following specific physical pathways and rooms and cared for in COVID hospitals; limitation or prohibition of hospital visitors; and the use of electronic channels of communication with caregivers and, eventually, patients (Murthy *et al.*, 2020; Yetmar *et al.*, 2020). These measures were implemented differently in different settings. For instance, full-body PPE was needed in COVID hospitals, in particular in ICUs, whilst in COVID-free hospitals more basic equipment was required. Practices preventing caregivers and relatives from visiting patients were widely adopted, whilst the use of digital tools for virtually shortening distance and reducing isolation have not yet been systematically introduced. In these critical circumstances, hospitalisation would have been an unforgettable and unique experience for COVID patients as well as for non-COVID patients.

The Italian healthcare system is public, universal and managed at different levels (Nuti *et al.*, 2016), with the central government having a stewardship role and regional governments overseeing, organising and delivering healthcare services. In 2018, Tuscany and Veneto regions joined the Patient-Reported Experience Measures (PREMs) Observatory, enabling their hospitals to continuously collect patients' feedback (De Rosis *et al.*, 2020), during the COVID-19 pandemic also (De Rosis and Spataro, 2022). For detailed information on the questionnaire used, the process of users' enrolment and data collection, please refer to De Rosis *et al.* (2020). As of January 2020, the PREMs Observatory was active in 42 hospitals (Table 1 - Annex).

Veneto and Tuscany are two wide regions (respectively, 4,854,633 and 3,676,285 inhabitants at the 1st of January 2018), respectively, in North and Central Italy. Their healthcare systems were differently stressed by the COVID-19 outbreak. At the end of April, Tuscany had 5,584 positive cases, 2,926 discharged recovered patients and 842 deaths due to COVID-19; in the same period, Veneto counted 8,147 positive cases, 8,354 hospitalised COVID-19 patients who healed and 1,459 COVID-19 related deaths (Protezione Civile, 2020). The first case of COVID-19 was declared on 21 February in Veneto and on 24 February in Tuscany.

2. Background

This paper presents a research based on the intersection of theoretical and empirical research regarding value-in-use, value-in-context and service quality, measured through user experience, particularly in the healthcare sector. The following paragraphs are aimed at framing the background of the study.

2.1 Value-in-use, value-in-context and customer experience

The concept of value and the process of value-creation have become core concepts in marketing and management (Lemon and Verhoef, 2016), particularly in the principles of service-dominant logic (SDL) (Vargo and Lusch, 2004, 2008, 2016). In the development of SDL, the introduction of the service-ecosystems' view had important implications for understanding value-in-context within service systems (Chandler and Vargo, 2011; Chandler and Wieland, 2010; Heinonen *et al.*, 2013). To this regard, scholars argued that context is a key variable to be taken into consideration in the value creation process (Akaka *et al.*, 2013; Vargo and Lusch, 2008; Chandler and Vargo, 2011). Indeed, the concepts of value-in-context (Vargo and Lusch, 2016) and value-in-social-context (Edvardsson *et al.*, 2011) have been introduced in the literature. Value-in-context means that value can only be created within the context, within an ecosystem or multiple ecosystems, including social and economic (Lusch *et al.*, 2010). Users are embedded within a social system that affects individuals' beliefs and values (Osborne *et al.*, 2021). Value is created in a context that includes experiences, expectations and needs of each specific user (Sheth, 2020), the broader societal context of values, beliefs and trust towards the organisation (Laitinen *et al.*, 2018) and web-based social networks (Souki *et al.*, 2022). Culture and agency can shape social networks and connections (Vargo and Lusch, 2016). Edvardsson *et al.* (2011) argued that value is a social construction, shaped by social forces, reproduced in social structures and potentially asymmetric. This also influences the way in which individuals in a specific social context assess resources and services. Thus, context can frame the exchange through which value is produced and the borders of the service perception and evaluation.

Vargo and Lusch (2017) reported that value is phenomenological, perceived experientially and differently by varying actors in varying contexts in a service ecosystem (Vargo and Lusch, 2017; p. 3). The perceived quality of services has intrinsic and extrinsic nature, in relation to experience and credence formed within the context of prior experience and other personal and situational variables (Solin and Curry, 2022). In other words, quality of experience has a significant effect on customer perceived value (Kusumawati and Rahayu, 2020; Ghosh, 2021), since the value is embedded in experiences (Schembri, 2006), derived from the individual process of co-creation within a social context, also defined as value-in-experience (Chen *et al.*, 2012). The nature of value-in-use has been defined in terms of a positive or negative value given by the experience of consumption (Grönroos and Voima, 2013). In their recent work, Medberg and Grönroos analysed a series of theoretical contributions and research studies to support their experienced-based characterisation of value-in- use (Medberg and Grönroos, 2020). In addition, due to the relativistic nature of experience, the role of individual and social context in the value creation process is key (Ranjan and Read, 2016). Several scholars provided a definition of value-in-use that encompasses the evaluation of the experience (Ranjan and Read, 2016; Sandström *et al.*, 2008). Thus, the experience with the service is recognised as the mean for creating and assessing value-in-use. This is in line with the service marketing stream of literature, which has been focussed on user experience with services from the 80s (Lemon and Verhoef, 2016; Medberg and Grönroos, 2020), defining service quality as the user's assessment of the service performance (Brady and Cronin, 2001; Zeithaml, 1988). According to Grönroos (1984), *the perceived quality of a given service will be the outcome of an evaluation process (. . .) The result of this process will be the perceived quality of the service* (p. 37). Customer experience is strongly related with *evaluative concepts such as perceived service quality, satisfaction and value-in-use* (De Keyser *et al.*, 2020; p. 1), since customer experience is key to the evaluation of the experience object (Chandler and Lusch, 2015). As indicated by De Keyser *et al.* in their nomenclature (2020), tools like customer surveys and real-time experience tracking may help in the evaluative efforts at the various touchpoints along the customer journey, in order to assess, maintain and improve customer experience quality. This approach also applies to

health services (Tanner *et al.*, 2020), where, in addition, the value experienced by services' users also affect their value co-creation behaviours (Samsa and Yüce, 2022).

2.2 Measuring customer experience in healthcare

In the pivotal research stream initiated by Grönroos (1984), which is referred to as the Nordic School, service quality is defined amongst two major service quality dimensions: technical quality (the outcome of the service) and functional quality (the service process), with application in retail banking services (Holmlund and Kock, 1996) and in retail chain departmental stores (Wong, 2004).

In the American school perspective, service quality has been defined around five dimensions: tangibles, reliability, responsiveness, assurance and empathy (Parasuraman *et al.*, 1985, 1988). Research has shown that these five dimensions may not be universal across all types of service, producing positive WOM, making users key testimonials and marketers of the provider (Berry, 2016) and leading to emotional responses in users (Schembri and Sandberg, 2011). People using healthcare services generally have need of them, are in a sensitive and weak situation (i.e. illness) and are in conditions of information asymmetry with respect to the healthcare professional who provides the service: patients depend on healthcare professionals' knowledge, skills and competencies (Berry and Bendapudi, 2007; De Rosis *et al.*, 2019). This information asymmetry makes healthcare services high in credence attributes, due to patients' difficulties in evaluating outcomes and increases patient perceptions of risk (Kumar *et al.*, 2013). Thus, healthcare services are amongst those services whose value is difficult to determine for users before experiencing the service itself: in this case, the more an organisation produces positive experiences, the more satisfied a customer will be (Kumar *et al.*, 2013).

Reported-experience measures are widely and increasingly used for measuring service quality from the patient perspective, as well as for benchmarking and accreditation purposes, especially in public healthcare systems (Coulter, 2006; Coulter *et al.*, 2009; Donabedian, 2005). Patient-Reported Experience Measures (PREMs) usually include questions of relevance to patients, such as: access to care (i.e. reasons for choosing a specific provider, waiting time); informative support from healthcare professionals to patients; patient involvement (i.e. shared decision-making between patient and healthcare professionals); coordination and teamworking (i.e. between doctors and nurses); comfort of the environment (i.e. ward hygiene and silence); pain management; emotional support and relational aspects (i.e. respect and dignity of the person; anxiety management); WOM (i.e. willingness to recommend the provider) (Coulter, 2006; Coulter *et al.*, 2014).

Within this established body of literature, some gaps remain.

First, according to Grönroos (2020; p. 508), surprisingly little attention has been given in service research to the way in which value-in-use is experienced by customers in service contexts. Both Woodruff and Flint (2006), and more recently Grönroos (2020), argued that more knowledge is needed on how value-in-use is experienced within a service perspective on marketing theory.

Second, recently, Medberg and Grönroos (2020) investigated the relationship between service quality and value-in-use in the context of the retail banking services. This theoretical and empirical approach has not been widely applied in the healthcare sector.

Third, existing studies on patient experience have been conducted in situations of normality. The evaluation of value-in-use by healthcare services' users might be changed in a context of a global pandemic. This research investigates patient experience during the coronavirus pandemic using quantitative measures at scale. Scholars have not specifically conceptualised the patient experience with healthcare services during a crisis. However, by taking into consideration the core aspects of patient experience described above, which refers

to normal times and potentially to more manageable situations of crisis, the literature provides some insights to consider. Previous research showed that clear, explicit and timely communication amongst healthcare personnel at different levels is key for promptly identifying and solving customer problems, thus maintaining their satisfaction and loyalty and preventing complaints (Hamza *et al.*, 2020; Koc, 2013; Sonis *et al.*, 2020; Kusumawati and Rahayu, 2020; Souki *et al.*, 2022). During the COVID-19 outbreak, emotional and psychological support are recognised as important elements (Faccincani *et al.*, 2020), together with healthcare professionals' compassion and professionalism (Guney *et al.*, 2020).

In periods of crisis, such as the COVID-19 pandemic when patients were treated in the appropriate facility from the point of view of the healthcare system or organisation, according to the patient's health needs (i.e. COVID or non-COVID patient) and the availability of beds for hospitalisation or slots for visits; patients did not choose their provider. Thus, studying healthcare service quality in the users' perspective during crisis, it is important to investigate the effects of experience on satisfaction and willingness-to-recommend as proxies of trust and awareness. During the unprecedented situation of a global pandemic, we can expect that hospitalists have greater need to address patients' emotional reactions such as fear and anxiety, likely exacerbated by a lack of or substantial decrease in caregiver presence and support, as well as by a general reduction of human-human interactions both with healthcare professionals and other patients, due to the various distancing and protective measures undertaken in the hospitals. 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.

3. Materials and methods

3.1 Hypotheses

The research questions of our study take the form of the following hypotheses: whether, in the context of the pandemic,

- *H1.* value-in-use measured by patient evaluations of hospital experience worsened
- *H2.* the experiential aspects affecting patient satisfaction and willingness-to-recommend changed and
- *H3.* the aspects of experience that remained significant determinants of satisfaction and WOM are only those related to the emotional and informative domains, thus all the other variables (related to technical and competences and physical environment-related aspects) were not significant determinants.

To test the above-listed hypotheses, we designed data collection and analysis as described in the following paragraphs.

3.2 Participants and survey

This research addresses the period January–April 2020, around two months before and two months after the first case of COVID-19 in the two regions: from 27 December 2019 to 17 April 2020 for Veneto, from 30 December 2019 to 20 April 2020 for Tuscany. In this period, 30,158 patients were discharged by hospitals participating in the PREMs Observatory in Veneto and 53,631 in Tuscany. Of these, 9,938 (33%) patients consented to take part in the survey in Veneto and 14,717 (27.5%) in Tuscany. In Veneto, 5,104 questionnaires were collected (response rate 51.3%), in Tuscany 3,825 (response rate 26%) (Table 2 - Annex). All patients who consented to participate in the survey were invited, with no selection of participants.

Patients who wanted to participate in the survey received a text message and/or an email containing a personal link to access the online questionnaire. Users could respond using all types of devices, at any time of the day, with the possibility of saving their answers. All questions were anonymous. It included 39 closed-ended reporting questions, with single answers regarding the experience with hospital stay and socio-demographic questions. The items measuring patient experience are shown in Table 3 - Annex. The questionnaire also included some narrative sections. A full description of the survey development and administration model, including a translated copy of the full survey, is available from De Rosis *et al.* (2020).

3.3 Analysis

Patient responses in pandemic and pre-pandemic situations were compared with χ^2 tests. Then, mixed-effects multilevel and multivariate logistic regression modelling were performed to explore factors influencing satisfaction and WOM in relation to the hospitalisation experience and to investigate within region variability.

Satisfaction with hospitalisation experience is an ordinal variable, with values from 1 (low) to 5 (high), for which ordered multivariate logistic regression analyses were performed. To analyse the WOM, logistic regression was used considering 'WOM = 1' when patients reported as likely to recommend the ward/hospital, otherwise 'WOM = 0' was used. Statistical significance was considered at $p = 0.05$.

Socio-demographic variables refer to perceived health status, presence of chronic disease, sex, age, educational level. Educational level was classified as middle school and lower, high school and university or higher. Chronic disease and type of respondents were classified as dummy variables, respectively, as follows: chronic vs non-chronic patients; patients responding alone vs helped by someone.

We performed a forward selection, starting with an empty model and testing the addition of each group of variables according to the framework. The first model included socio-demographic variables and affected area/region (Tuscany = 1, Veneto = 2, serving as a proxy measure of COVID-19 context) as covariates. The second model additionally included variables related to the emotional support domain (see Table 3 - Annex). In the third model, we added variables from the informative support domain. In the fourth, technical and competences-related aspects were added. The fifth and full model also included the physical environment-related variables. We performed multilevel regressions separately for those discharged before and after the COVID-19 pandemic, so as to identify the changes in impact and significance of predictor variables between the two time periods.

We consider individual items because we are interested in the most granular level of detail captured by the survey. In this way, we explore the impact of the differential impacts of the COVID-19 pandemic on each element of patient experience and the impact of each of these elements on overall satisfaction and WOM.

4. Results

4.1 Survey responses and demographic factors

We found a greater reduction in patients participating in the PREMs survey in Tuscany (−50.2%) than in Veneto (−13.3%) ($p < 0.001$) during the pandemic period (Table 2 - Annex).

The mean age of respondents was 54, with women representing 60% of the sample. Low or very low educational levels comprised 47% of the population, with 35% at medium level and 17% high or very high educational levels.

During the pandemic, the proportion of female patients increased from 57.7% to 62.6%; patients were on average 3.5 years younger ($p < 0.001$), with more patients in the age classes

under 30 years (from 10.4% to 13%) and 30–49 years (from 26.7% to 32%) than before; they perceived better health status than before ($p < 0.001$). There was no change in educational levels of the population. The percentage of patients hospitalised after accessing the emergency department remained stable.

4.2 Differences in perceived experience

The χ^2 results for each experience variable in the pre-pandemic and pandemic situations are included in the Annex - Table 4.

Contrary to our first hypothesis, overall, PREMs scores went up during the COVID-19 pandemic, compared to the two months prior. Satisfaction with the hospitalisation ($p < 0.001$) and WOM ($p = 0.02$) improved in the pandemic period. Within the specific experiential items, there were significant increases in the proportion of patients selecting the top score and combined top two scores for nine of the 16 items. Similar reductions in the lowest scores were noted. One item, communication with relatives, showed a significant reduction. Other items showed no significant changes in responses.

These findings reject our first hypothesis about the worsening of value-in-use, measured by patient evaluation of hospital experience, during the pandemic. The following lines report the analysis of the factors that affected the patient evaluation, prior and during the crisis.

4.3 Differences in factors affecting the patient satisfaction and WOM

Multilevel modelling showed very low and nonsignificant variability in overall satisfaction and WOM between healthcare organisations within the same region, controlling for demographic factors and first incidence of COVID-19 in the region, as well as for the experience variables introduced into the model. The variation is completely explained by the experience variables. For this reason, we report only the results of the multivariate regression models (Tables 1 and 2), which confirm the results of the multilevel models.

4.3.1 Differences in factors affecting the word-of-mouth (WOM). In the regression model for WOM including only demographic factors, the regional context –differently affected by the coronavirus outbreak– remained a statistically significant determinant of WOM and reversed polarity from pre-to during-pandemic scenarios, meaning that during the outbreak patients discharged by hospitals in Veneto (more affected by the pandemic) were more likely to recommend the hospital, in comparison with the Tuscan patients. Thus, value-in-use, evaluated by patients as willingness-to-recommend, increased in a context of more severe crisis. The complete multivariate regression models show that health status and age became non-significant factors predicting WOM during the pandemic. Comparing changes from pre-to during-pandemic periods, there were notable increases in effect size alongside decreases in p value for: in the emotional support domain, having fears and anxieties addressed by clinicians ($p = 0.003$) and being treated with respect and dignity by nurses ($p = 0.004$); in the informative support domain, an increase was observed in the effect size of being involved by healthcare staff, which became significant during the pandemic ($p = 0.004$). Similarly, ward hygiene became nonsignificant after the COVID-19 outbreak ($p = 0.09$), with the same effect observed in the other aspect of the physical environment domain, ward silence, which decreased effect size and became nonsignificant. There were also notable decreases in effect sizes alongside increases in p values for pain management ($p = 0.1$) (technical and competence aspects) and communication with relatives ($p = 0.98$) (informative support domain). For the WOM, our second and third hypotheses were partially confirmed, since (2) the experiential aspects affecting willingness-to-recommend changed for those aspects linked to the environment and (3) several aspects of experience not related to the emotional and informative domains remained significant determinants of WOM during the COVID-19 period.

Table 1.
Multivariate regression models for word-of-mouth (WOM) in pandemic and pre-pandemic situations

	Before JAN - FEB 2020					During MARCH - APRIL 2020				
WOM	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Demographics										
Health Status	0.87**	0.60**	0.50**	0.42**	0.37**	1.01**	0.67**	0.38	0.13	0.089
Sex	0.19	0.24	0.38	0.14	0.07	0.248	0.44	0.53	0.57	0.579
Age	0.01**	0.01**	0.01**	0.01*	0.01*	0.02**	0.01*	0.01	0.01	0.011
Educational level	0.03	−0.01	0.09	0.05	0.10	−0.03	0.05	0.21	0.22	0.239
Region	0.23*	0.15	−0.09	−0.06	0.01	−0.36*	−0.26	−0.48	−0.46	−0.447
Emotional support										
Fears and anxieties - clinicians		0.57**	0.31*	0.26	0.25		0.68**	0.38*	0.41*	0.46*
Fears and anxieties - nurses		0.27**	0.32*	0.10	0.02		0.22	0.24	−0.15	−0.131
Respect and dignity - clinicians		0.57**	0.53**	0.37*	0.32		0.56**	0.35	0.06	0.058
Respect and dignity - nurses		0.60**	0.20	0.09	0.16		0.68**	0.79**	0.85**	0.85**
Respect and dignity - care workers		0.19*	0.18	0.19	0.11		0.35**	0.00	−0.14	−0.196
Informative support										
Involvement			0.15	0.01	0.03			0.40**	0.43**	0.41**
Clear answers - clinicians			0.18	0.18	0.25			0.11	−0.04	−0.038
Clear answers - nurses			0.35*	0.16	0.12			0.29	0.02	0.076
Communication with relatives			0.46**	0.30**	0.30*			0.13	0.04	0.005
Clear info at discharge - at home			0.20	0.07	0.03			0.57*	0.54	0.508
			0.31	0.25	0.21			0.17	0.13	0.104
Technical aspects										
Clinician-nurse collaboration				1.12**	1.00**				1.65**	1.51**
Communication of discharge				0.15	0.16				−0.03	−0.052
Pain management				0.44**	0.46*				0.396	0.345
Physical aspects										
Silent ward					0.47*					0.143
Clean ward					0.30**					0.380
Constant	−1.43	−1.01	−1.32	−1.47	−1.60	−1.445	−1.134	−1.313	−1.582	−1.674

Note(s): March–April 2020 and January–February 2020, respectively
Source(s): Table by authors

Table 2. Multivariate regression models for overall satisfaction in pandemic and pre-pandemic situations

	Before JAN - FEB 2020					During MARCH - APRIL 2020				
Overall evaluation	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Demographics										
Health Status	0.72**	0.52**	0.37**	0.30**	0.24**	0.83**	0.64**	0.47**	0.27*	0.23*
Sex	0.19**	0.23**	0.22*	−0.01	−0.10	0.39**	0.44**	0.36*	0.21	0.24
Age	0.00**	0.00	0.00	0.00	−0.01*	0.01**	0.01	0.00	0.00	0.00
Educational level	0.05*	0.02	0.07	0.03	0.05	0.01	0.06	0.15	0.17	0.19*
Region	0.07	0.08	−0.09	−0.07	−0.02	−0.10	−0.05	0.03	0.14	0.18
Emotional support										
Fears and anxieties - clinicians		0.46**	0.25**	0.13	0.13		0.49**	0.34**	0.24*	0.25*
Fears and anxieties - nurses		0.57**	0.59**	0.46**	0.40**		0.41**	0.33**	0.15	0.17
Respect and dignity - clinicians		0.69**	0.58**	0.54**	0.50**		0.43**	0.16	−0.23	−0.19
Respect and dignity - nurses		0.68**	0.30**	0.09	0.17		0.78**	0.61**	0.40*	0.37*
Respect and dignity - care workers		0.34**	0.25**	0.27**	0.20*		0.36 B	0.33**	0.34**	0.29
Informative support										
Involvement			0.25**	0.18*	0.20*			0.20**	0.14	0.12
Clear answers - clinicians			0.18	0.01	0.05			0.10	0.11	0.11
Clear answers - nurses			0.49**	0.28*	0.24			0.20	−0.03	−0.04
Communication with relatives			0.24**	0.02	0.00			0.26**	0.18	0.15
Clear info at discharge - at home			0.51**	0.42**	0.37**			0.43**	0.56**	0.49**
Clear info at discharge - pharma			0.48**	0.41**	0.38*			0.52**	0.34	0.27
Technical aspects										
Clinician-nurse collaboration				1.93	1.81**				2.08**	1.94**
Communication of discharge				0.03	0.03				−0.04	−0.06
Pain management				0.27	0.28**				0.39**	0.36**
Physical aspects										
Silent ward					0.25**					0.19*
Clean ward					0.51**					0.52**

Note(s): March–April 2020 and January–February 2020, respectively
Source(s): Table by authors

4.3.2 Differences in factors affecting the satisfaction. There were fewer changes in domains predictive of the overall satisfaction score, with most items showing p values > 0.05 before and during the COVID-19 situation. In the emotional support domain, having fears and anxieties addressed by clinicians increased in effect size and became significant (as in the WOM regression) whilst the item respect and dignity, clinicians reversed direction (positive to negative), becoming nonsignificant. In the same domain, the items fears and anxieties management by nurses was a significant determinant factor of patient satisfaction in the normal situation ($p = 0.001$), whilst during the pandemic it became non-significant, alongside a decrease in coefficient. Similarly, in the informational support domain, the clearness of nurses' answers became highly nonsignificant during the epidemic. The quality of information at discharge remained positively associated with overall satisfaction only in relation with what to do once at home ($p = 0.006$), whilst information on therapy became nonsignificant. Patient reported clinician-nurse collaboration remained significantly positive associated with patient satisfaction ($p < 0.001$) for both overall satisfaction and WOM, with increases in effect size for both. No changes were found in the two items referring to the physical environment (silent ward and clean ward) in predicting overall satisfaction, which remained positively associated with patient satisfaction with the same significance ($p < 0.05$) and similar coefficients. For the overall satisfaction, we can partially confirm our second and third hypotheses, since (2) only some factors affecting the satisfaction before the pandemic remained significant whilst other changed their effect or become non-significant and (3) only some aspects related to the emotional and informative domains of experience remained significant determinants of satisfaction during the COVID-19 period, together with other experiential aspects, such as those related technical and environmental domains.

Additional χ^2 tests of the significance of impact of each experience item in pre- and during pandemic scenarios considering sub-groups of patients on the basis of the socio-demographic factors provided results in line with the regression analyses.

5. Discussion

This study tests whether the value-in-use evaluation by public healthcare service users is affected by a change in context driven by the unprecedented circumstances of the COVID-19 pandemic. It uses a unique source of data, represented by a continuous and ongoing cross-sectional web survey on hospitalisation in different Italian public regional healthcare systems (De Rosis *et al.*, 2020). This paper contributes to the service marketing and management literature by (1) investigating whether and how, in the context of a global crisis, the value created by some experiential aspects changed and (2) providing preliminary evidence on the concept of reverse compassion, as a specific driver of value-in-use given by the context of the crisis.

We posit that patients discharged during the pandemic and participating in the PREMs survey were primarily non-COVID patients. A number of factors suggest this conclusion. First, we found that patients participating in the PREM surveys were younger and healthier during the pandemic; individuals who were hospitalised for COVID-19 experienced longer hospital stays and were older (Paterlini, 2020). Second, suspected COVID-19 patients attending hospitals followed dedicated pathways. This potentially created an impossibility or reticence amongst healthcare professionals to ask COVID-19 patients to participate in the survey (Wallenburg and Bal, 2018). This also provides additional explanation for the reduction in survey responses.

We now address the experiences of this group and suggest some developments to current theory relating to customer experience and WOM. It seems reasonable to assume that, during the COVID-19 pandemic, continued professional focus on the relational elements of care suffered, both unavoidably as a result of the physical changes required

(distancing, masks and PPE) and due to the generally increased demands and stresses experienced by healthcare workers. Nevertheless, our analysis found that patients reported better experience and perceived the relational aspects of care as improved during the pandemic, disproving our first hypothesis. Only communication with patients' relatives and caregivers was reported less positively during the pandemic, which is explained by limitations in caregivers' access. Since the experience with care could not have improved in this context of health-related global crisis, the increased value-in-use must be explained by other factors.

We propose that these improved experience scores are context-related, since our findings suggest that the value-in-context can affect the evaluation of value-in-use, as in Megaro *et al.* (2022). In our study, the increased context-related value can be explained by a feeling of gratitude for professionalism and kindness of healthcare professionals under such challenging circumstances (Guney *et al.*, 2020). The pandemic affected collective psychology: on the one hand, the crisis changed how people considered their (inter)actions and experiences (Karpen and Conduit, 2020); on the other, the crisis trigged prosocial behaviours such as in the wider support for front-line healthcare workers who saved lives whilst risking infection or death (Galea, 2020). Greater empathy emerged in the public conversation, in the press and on social media (De Rosis *et al.*, 2021). Such empathy and altruism, related to prosocial behaviours (Batson, 2014), accompanied the wider sense of solidarity during the outbreak (Galea, 2020). The perception of hospitalised individuals during the pandemic has been predominantly guided also by the desire *to have greater purpose in and care for the community* (Karpen and Conduit, 2020).

In transferring these motivational states into the public hospital setting, the forces typically shaping patient perception and value-in-use evaluation could have been affected by the context of the crisis, creating a new or greater sense of compassion. We suggest that a new concept of *reverse compassion* emerged between patients and professionals. Compassion, defined as the *sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it* (Gilbert and Choden, 2013), has been usually referred to the healthcare professionals' behaviours and care (Brown *et al.*, 2014; Gilbert and Choden, 2013; Sonis *et al.*, 2020), or to the organisation's compassionate treatment towards professionals (Shea, 2015; Tronto, 2010). In this case, we describe the feelings of gratitude and compassion from patients to the healthcare professionals coping with the emergency (Douglas, 2020). The reverse compassion is here defined as *the citizens' emotional response to the altruistic sacrifice and suffering of service providers with a commitment to try to symbolically alleviate it by the means of its recognition and valorisation and with empathy and tolerance towards their distress and burnout*. It is defined as both an emotional response (Fotaki, 2015) and the perception of the professionals' focus on meeting the community and patients' interests before their own, in the context of crisis and emergency. In fact, we suggest that this sense of reverse compassion was created by individuals' experiences and awareness of the pandemic and therefore reached different levels according to their local circumstances. The public narrative, risk perception and direct experiences of hospitalisation may have emphasised these feelings in patients, thus creating a greater value-in-use in this critical context that the current tools for measuring experience detected as changes in the patient assessment. We argue that this reverse compassion explains not only the overall better patient evaluations, but also (1) the increased WOM in the system that was most stressed by the crisis (Veneto) and (2) the changes observed in the relative importance of different experience dimensions during the pandemic.

First, we note that the patients in Veneto were more likely to recommend the hospital in which they stayed, compared to Tuscan patients, during the pandemic period - a reversal of the pre-pandemic situation. The measure of likelihood to recommend (WOM) is understood as a useful measure of perception of service. We argue that the scale of crisis and level of stress

that the pandemic produced on the healthcare system had an impact, ultimately resulting in increased patient propensity to recommend the hospital.

Second, reverse compassion could also explain the greater importance we identified of some aspects of hospitalisation in shaping overall experience. We find that, in times of pandemic, users' propensity to recommend a hospital is additionally influenced by perceived doctor-nurse collaboration and by patient involvement in decision-making. Whilst Berry and Bendapudi (2007) emphasised that patient experience is mainly affected by relational components with professionals, rather than to their technical expertise, our findings suggest that, in the context of crisis, patients are more likely to appreciate and recognise professionalism and technical aspects; it may be considered a proxy of a safe service (Makary and Daniel, 2016). Overall, it seems important to patients during the pandemic to be treated kindly, but also to feel reassured and empowered.

5.1 Implications for research, practice and/or society

The implications of our research for the scientific community and practitioners, as well as future directions of research are mainly linked to two aspects: consideration of context in value-in-use evaluations and the practical impact of the reverse compassion concept.

With respect to the first point, value-in-use can be differently measured in times of crisis due to the effect of the context itself. Our findings underline that scholars should consider a wider spectrum of human experiences with services and their providers, by combining the focus on emotional, informative, technical and physical aspects of the experience with consideration of contextual and situational determinants of the subjective experience itself.

Regarding the second point, we found that, in a crisis context, patients better recognise the efforts of staff, including their technical expertise and capabilities. We suggest an additional practical implication of using the users' voice: as an internal marketing activity to motivate professionals. Using user-driven motivational levers can increase customer-orientation in healthcare, leading to customer-directed prosocial behaviours and increasing performance (Gazzoli *et al.*, 2022).

Additionally, this research offers a triple contribution for the post-pandemic world: (1) an additional concept (reverse compassion) to explore, measure and value; (2) a preliminary reflection on the dimensions of value that can be measured from the user perspective (i.e. the value generated by experiencing a service in a critical situation); (3) novel evidence on the potential of user-reported data use for motivating professionals, particularly front-line workers and increase resilience during future crises (Slavich *et al.*, 2022), when there is less scope for expressions of gratitude and appreciation towards front-end workers providing services despite the circumstances. The support of external entities, such as research centres, can help in using user feedback as fuel for re-organising services and innovating (Bonciani *et al.*, 2022). The availably of disaggregated and real-time updated information reported by users is also a key lever (Reeves *et al.*, 2013; De Rosis *et al.*, 2020). For these reasons, despite the objective and subjectively perceived value of the patient data (Tang *et al.*, 2015), the last implication is particularly important, considering that data reported by users are often adopted for resolution of complaints and not strategically managed (Ciasullo *et al.*, 2021).

6. Conclusions

Crises can affect the experience of service users: this study is applied to the healthcare sector during COVID-19, by investigating user experience with hospitalisation before and during the pandemic.

This study empirically suggests that the value-in-context can affect the evaluation of value-in-use by patients during unprecedented circumstances. In fact, a more positive

experience was reported during the outbreak, with an appreciation also for technical and professionalism-related aspects. We propose that the more positive reported patient experiences in the crisis are attributable to a sense of reverse compassion, with patients influenced by their local circumstances (the level of system and professionals' distress) and by the wider public narrative. This is supported by the fact that, during the pandemic, patients discharged in the system most stressed by COVID-19 were more likely to produce a positive WOM. During critical periods, where there is less scope for expressions of gratitude and appreciation towards front-end workers, user-reported data can be used for motivating professionals and increase resilience.

7. Limitation and further research opportunities

A notable strength of that study is that we draw on a very large dataset of PREM survey data, collected over four months from multiple hospitals in two Italian regions, differently affected by the COVID-19 pandemic. This enables robust statistical analyses to support our conclusions. The use of self-reported data has some inevitable limitations; as data are self-reported, there could be misinterpretation of questions and varying levels of attention on the survey. However, these limitations are inherent in all survey-based research and mitigated by the adoption of standard and widely used items. As noted above, this study is not easily reproducible, but could be done so by other areas which collected PREMs before and during the COVID-19 pandemic. The external validity of our conclusions is however supported by qualitative research and commentary from the international context.

To further explore the concept of reverse compassion, driven by the local circumstances of patients, additional research should investigate the geography of pandemic effects on patient experience, for instance by performing time series analysis or a difference-in-difference analysis on PREM data across areas with different levels of crisis-induced stress.

The same analyses could be conducted by other areas, which collected PREMs before and during the pandemic (Corazza *et al.*, 2021). Future research using patient narratives could also investigate how the emotional and relational aspects of care have been addressed in hospitals during the crisis, in relation to the service evaluation by patients themselves; recent research analysed patient narratives to investigate the patient voice, identifying gratitude as a common feeling (Guney *et al.*, 2020). It would also be interesting to explore whether the observed increase in importance of professionalism and reassurance in service delivery are replicated in other public services which continue to operate in times of crisis, such as public transport or policing. To additionally test the concept, further analysis could be performed before and during the second wave of COVID-19 infection in the two Italian regions, when the citizens' perception of the pandemic and the expectations in the management of the crisis situations could have changed.

Our findings could be also tested by conducting the same analyses during other kinds of crisis and emergency, at global, national or local levels.

Since our findings also provide lessons and suggestions about the use of PREMs for professional and managerial practice, future studies could investigate if patients' appreciation improves healthcare professionals' well-being, which could have been significantly affected by the pandemic and can increase healthcare systems' resilience. This mechanism of sharing patient feedback to support staff resilience and well-being would apply equally in other critical or challenging contexts. Staff may be under unusually high pressure, and users will recognise this in their expressed feedback even though usual interpersonal feedback modes are less available. It has been noted that businesses should have continuity plans for managing challenging situations. We suggest that means to measure and share customer experience and feedback with staff should be a part of business continuity plans, to help increase staff well-being and resilience in a critical context by

providing a route to share customers' appreciation and recognition of their efforts. These insights reiterate the need to continue collecting and reporting experience data in a timely manner – including in crisis situations. In this way, feedback is used not only to identify and address problems, but also or primarily to motivate staff and help increase resilience.

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Authors' contributions: SDR coordinates the PREMs Observatory and wrote the manuscript draft. KJG performed the data analyses and contribute in writing and English proof-reading the paper. SN conceived the idea of the PREMs Observatory and theorised the concept of "reverse compassion". All the authors were involved in interpreting the findings and were responsible for reviewing and approving the manuscript.

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Appendix

The supplementary material for this article can be found online.

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