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Informal carers' experiences with their children's care during hospitalization in Italy: Child HCAHPS results from RN4CAST@IT-Ped cross-sectional study

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ABSTRACT

Purpose: To examine informal carers' experiences during their child's hospitalization and evaluate the associations with care received and care context.

Design and methods: What is described in this article is only a part of the larger study, RN4CAST@IT-Ped, a multicenter cross-sectional study, with multi-level data collection through convenience sampling, the Child Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey was used to collect data from informal carers of pediatric patients, applying the "top box" approach.

Results: Nine hospitals, 1472 nurses, and 635 children's parents were involved. A correlation was found between patient safety and satisfaction outcomes and nursing staff characteristics. Adequate workloads for nurses improved carers' assessment of their experience in the hospital.

Conclusion: Adequate staffing management could significantly improve informal carers' satisfaction with the care provided to their children during hospitalization.

Practice implications: Children's informal carers greatly value the care they receive in pediatric hospitals. Adequate workloads for nurses improve carers' overall evaluation of the care their children receive during hospitalization. Nursing management should consider improving these aspects to ensure high-quality care in children's hospitals.

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Background

In the last two years, public opinion and policymakers have questioned best strategies to protect hospitalized patients while

offering them the best possible care (Hugelius et al., 2021). One of the most debated aspects was the loneliness experienced by the patients and the impossibility of having family next to them during the illness or even the end of life (Catania et al., 2021; Zanini et al., 2022). Although most of the literature about it was related to the experience of the adult world, pediatric patients continued to be hospitalized and cared for, subject to the same restrictions that apply to everyone else (McBride, 2021; Smorti et al., 2022). A study recently conducted in the United States of America (USA) investigated the satisfaction of both parents and children, in parallel, regarding the care received in a hospital during hospitalization, highlighting information and preparation for discharge

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as weaknesses (Coleman et al., 2020). When a child is admitted to hospital, a whole family is shattered by the fear, uncertainty and change in their lives, even if it is only temporary. The last three years have added further hardship to what is usually a traumatic event for a child and their family: only one parent in care, no visits, minors (e.g. siblings) not allowed in hospitals, intensive care units - pediatric and neonatal - even more closed (Hyczko et al., 2022; Vance et al., 2021). These experiences have shaped the lives of many families in one way or another. The voices of patients and families need to be heard in order to provide care that meets their real needs and to improve the care provided (Ferreira et al., 2023; Wray et al., 2018).

The European regulations have issued a document encouraging patients' involvement in improving health systems; therefore, when it comes to pediatric care, it is necessary to listen to the voices of children and their families, although this rarely happens (Council of Europe (Council of Europe Publishing), 2018). Children and caregivers should be allowed to give their views on their experience of healthcare using ad hoc tools (Quigley & Predmore, 2022).

Nurses play a great variety of roles within health systems because staff characteristics, healthcare organizations, and patients require the implementation of different roles to strike the right balance (World Health Organization. Regional Office for Europe et al., 2019). According to Irvine's conceptual model, dated but always current, the roles covered by nurses are independent, dependent, and interdependent, and this enables them to achieve the best patient and clinical outcomes in terms of satisfaction and costs (Irvine et al., 1998). Some empirical studies have shown how the working environment and the characteristics of the nursing staff are key to achieving user satisfaction (Kutney-Lee et al., 2009) and patients' outcomes (Clark & Lake, 2020; Juvé-Udina et al., 2020). Therefore, exploring users' perception concerning the care received is a good starting point when implementing a quality improvement intervention. Today, the opinions of care recipients in hospitals are increasingly relevant for health systems and professionals, not only for the perceived quality of the care they receive but also for the financial consequences that organizational choices in the healthcare sector may have (Lloyd et al., 2023).

For years, the Centers for Medicare and Medicaid Services (CMS) have used a tool for public reporting and payment of benefits for most US hospitals called the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) tool, mainly used for adult patient care (Zaslavsky et al., 2023). Mazurenko et al. (2017) conducted a literature review highlighting the factors detected through the HCAHPS were predictive of user satisfaction. After analysing the context of care for both adult and pediatric patients, the authors highlighted two levels of parameters. With regard to the characteristics of adult patients, the predictive factors were gender, age, health status, and pain management. About hospital organization, the predictive factors were work environment, safety culture, length of stay, staffing levels, teaching status, and environment quietness and cleanliness.

Additional factors were identified in studies conducted in the field of pediatrics, such as admission to a freestanding pediatric hospital, and characteristics of the informal carer (e.g., being a mother and age) (Mazurenko et al., 2017). Since this tool was not specifically designed for the pediatric field in 2017, a "child version" was validated for a more appropriate data collection (Toomey et al., 2017). These data were confirmed by a recent study showing how quality and safety in magnet hospitals were better compared to the pediatric wards within general hospitals. Moreover, there is evidence that favorable work environments and evidence-based nurse staffing levels are associated with safer care (Lasater et al., 2020).

With these assumptions, paying attention to the patients' perspectives is useful both for patients who have the opportunity to express their opinions about the services provided in response to their children's health needs (Benson & Benson, 2023) and for health professionals who can improve the quality of their work environment (Paguio et al., 2020). Citing the title of an editorial by

Tubbs-Cooley, Perry, & Keim-Malpass (2020, p.1), investing "in the human side of health" seems to be the best way to ensure quality care by giving patients and their families the necessary time and attention.

These are aspects for which the literature of the last decade on the phenomenon of missed care has largely shown to be lacking (Ogboenyi et al., 2020). Child and family-centered care is associated with positive outcomes in pediatrics, as demonstrated by Quigley et al. (2020), who revealed that data on patient experience reported by parents and/or family members help health professionals identify areas that need improvement. In particular, the three aspects needing special attention that have emerged from existing literature are communication, patient safety, and comfort.

Fitting this trend, the RN4CAST@IT-Ped study (Sasso et al., 2018) - conducted in line with the RN4CAST Consortium study protocol (Sermeus et al., 2011) - focused on pediatric nursing care in Italy by analysing nurses' characteristics, their work environment, and how these two aspects are related to patients' outcomes.

Methods

Aims

Within the scope of the RN4CAST@IT-Ped, the Child Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey was used to collect data from informal carers of pediatric patients. The objectives of the study were:

- to describe informal carers' perception of several aspects of hospitalization, such as nursing care, hospital environment, and communication with healthcare personnel;
- to study the correlations between the responses of informal carers and the type of hospital (e.g., freestanding pediatric or general with pediatric units), and the characteristics of the nursing staff (e.g., workload, nursing environment, nursing education).

Specifically, the study wants to answer the following questions: what organizational aspects related to the hospital and the nursing staff can influence the evaluation of informal carers concerning the hospitalization experience of their children?

We hypothesized that informal carers' evaluation of their child's hospitalization would be associated with nursing workload and nurses' and hospitals' characteristics.

Study design and sample

The RN4CAST@IT-Ped is a cross-sectional and multicenter study conducted in Italy between 2017 and 2019 involving 13 hospitals affiliated with Italian Pediatric Hospitals Association (AOPI) (Sasso et al., 2018; Sasso et al., 2019). In this study, using a multilevel design, three different surveys were used to collect data at a hospital level, at a nursing unit level, at the level of individual nurses, and the children's carers. A web survey was sent to the Nursing Director of each participating hospital to collect data about the hospital's characteristics. An anonymous web survey was used for nurses through a link to collect data about staffing levels, and a paper and pencil HCAHPS survey was administered to the children's caregivers on the last day of their stay in the hospital.

Study variables

The variables examined for this study were:

- a) hospital-wide characteristics, including hospital type (i.e., freestanding or pediatric units/departments inside a general hospital), bed size, teaching status, and technology level.
- b) nurses' demographics and working experience, including age, gender, years since qualification, years worked as a nurse, level of

education, and workload, measured using the item “During the last working shift, how many patients have you been directly responsible for?”. The predictive validity of this method of measuring hospital nurses' workloads has been shown in previous studies (Kutney-Lee et al., 2009); and work environment, assessed through the Practice Environment Scale of the Nursing Work Index (PES-NWI) (Lake, 2002), an internationally validated questionnaire to interview nurses about their work environment. The revised PES-NWI consists of 32 Likert-type questions, including 5 sub-scales (Nurse Participation in Hospital Affairs; Nursing Foundations for Quality of Care; Nurse Manager Ability, Leadership, and Support of Nurses; Staffing and Resource Adequacy; and Collegial Nurse–Physician Relations) that can be combined into a composite measure or a continuous variable (Lake & Friese, 2006). The item response choices have a minimum value of 1 and a maximum value of 4 (from “strongly disagree” to “strongly agree”); a score of 2.5 is the midpoint between agree and disagree, and a score of 3 or greater indicates agreement that the element is present in the job (Lake, 2002). In addition to an analysis using subscales of the PES-NWI, the average of the subscale items was used as a composite measure and in regression models (Hallowell et al., 2019).

c) the experience of the children's carers was assessed using the Child Hospital Consumer Assessment of Healthcare Providers and System (HCAHPS) survey (Toomey et al., 2015), developed by the Agency for Healthcare Research and Quality. For the present study, the survey was adapted and validated in Italian. Content validity was assessed by a panel of experts ($n = 11$) through the Content Validity Index score (S-CVI 0.91), and face validity was performed through structured interviews with ten informal caregivers. The reliability of this survey was evaluated using two methods: 1) stability was measured using the test-retest analysis by calculating the percentages of identical responses given at T0 and T1, and the Intraclass Correlation Coefficient (ICC) that was equal to 0.90; and 2) Internal consistency was measured using Cronbach's alpha, which was found to be good (0.90). The questionnaires to test the reliability were administered during hospitalization, in line with the protocol of the present study.

The Italian version of the Child-HCAHPS consisted of 71 items, grouped into five domains (like the original one): communication with the caregiver, communication with the child, attention to safety and comfort, hospital environment, and global ratings. The measures included 18 composite and single-item measures, 10 screening questions, demographic items about the carer ($n = 7$) and their child ($n = 11$), and one open-ended question. Of the 18 experience measures, we used the 13 that applied to the care of all patients for our analysis, excluding measures that were relevant only to subsets of patients, such as adolescents, healthy newborns, and psychiatric patients, similarly to previous studies (Kemp, Ahmed, Quan, Johnson and Santana, 2018). Specifically, the 13 measures included in these analyses consisted of five composite scores (Communication Nurses–Carers; Communication physicians–carers; Keeping you informed; Preparing you and your child to leave the hospital; Preventing mistakes and helping you report concerns; and Helping your child feel comfortable) and seven single-item measures (Privacy when talking with physicians, nurses, and other providers; Paying attention to your child's pain; Responsiveness to the call button; Cleanliness of hospital room; Quietness of hospital room; Overall rating; and Willingness to recommend hospital).

Data collection

Data from the children's carers were collected from 9 of the 13 hospitals included in the RN4CAST@IT-Ped (Sasso et al., 2018; Sasso et al., 2019); of these, five hospitals are located in northern Italy, three in central Italy, and one in southern Italy. Therefore, we conducted a secondary analysis of the data collected from nine hospitals and correlated them with the nurse survey data and the hospital characteristics data.

The surveys were administered in paper-and-pencil form to the carers of patients aged 0–18 years who had at least one overnight stay

at any of the nine Italian hospitals included in the study during the last day of hospitalization or the day before discharge. Carers were asked to return the questionnaires in a secured box within the department. Children's carers were eligible if aged >18 years and spoke Italian, English, or Spanish fluently. Only one carer for each child was involved. For the RN4CAST@IT-Ped study, only these criteria were used.

To conduct our secondary analysis, according to previous studies, we selected a sub-sample excluding carers of healthy newborns and patients admitted for psychiatric disorders (Feng et al., 2020; Kemp et al., 2018; Toomey et al., 2017). After applying these other exclusion criteria, from a total of 905 questionnaires collected over 5 months (September 2018–January 2019), we analyzed data collected from 635 carers, with a response rate of almost 75% (min 11%–max 97%).

Ethical considerations

No incentives were offered for participation. The study was approved by the Regional Ethics Committee (#075REG2017), and written informed consent was obtained from all respondents. Specific teams (sometimes involving undergraduate nursing students) were set up to avoid the data being collected by the same staff on duty in the units.

Data analysis

Descriptive statistical analyses (e.g., frequencies, percentages, mean and standard deviations) were performed to describe the sample and the variables. The mean response rate was calculated as: (number of respondents per hospital / total number of eligible respondents per hospital) \times 100. The survey items were scored using a ‘top-box’ approach where each item was re-coded as an indicator variable of whether respondents selected the most positive response option (e.g., ‘always’, ‘yes definitely’, rate ‘9’ or ‘10’) (Agency for Healthcare Research and Quality. https://www.ahrq.gov/cahps/surveysguidance/hospital/about/child_hp_survey.html). Composite scores were defined as the mean value of the indicator variables for the component items. Each variable was first measured at the level of the individual respondent (carer or nurse) and then aggregated by unit; this enabled to study associations between hospital characteristics (i.e., aggregate measures obtained from the nurse survey, such as nursing workload, nursing practice environment) and patient outcomes (i.e., data on patients obtained from the carer survey) for each unit.

Inferential statistical analyses were conducted at the unit level to analyze the relationship between carers, the top box, and the nurse and hospital variables. Therefore, the mean values from the same unit for each considered variable were used. The dependent variable was the overall patient experience measured by the item “overall rating from 0 to 10”, for which the ‘top box’ data include the range between 9 and 10; and the independent variables were the type of hospital (i.e., pediatric vs general), nursing workload, and nurses' work environment.

Pearson's correlation coefficient (or Pearson r) was calculated to verify the hypothesis of a relationship between hospital and nurse characteristics and the carers' top box variables. Then, a multivariate regression model was built, adjusting the univariate model for the characteristics of the hospital. A p -value of <0.05 was considered statistically significant. All analyses were performed using IBM SPSS Statistics (SPSS) 22.0.

Results

Sample

Of the nine hospitals conducting the caregiver survey, three were pediatric freestanding hospitals, and six were general hospitals with a pediatric unit or department. Data included 96 units collected from 1472 nurses and 635 informal carers. The mean response rate was

75.60% (min 10.80% - max 96.97%) for carers and 83% (min 61% - max 99%) for nurses.

Details about hospitals, caregivers, children, and nurses are shown in Tables 1–2–3. Most of the children were males (57%), aged ≥ 1 year (69.80%), and according to the carers' report, had a good or very good global health status (64.70%).

Approximately half of the sample came from freestanding pediatric hospitals (50.20%), and the mean length of stay at the time of data collection was 12.25 days (SD 10.55) in the freestanding pediatric hospitals and 9.41 days (SD 8.02) in the general hospitals. Carers were mainly mothers (80%), with a mean age of 39.23 years (SD 7.98), whose educational level was high school or higher (74%).

Most respondents (71.80%) stated they had spent most or all the time in the hospital with their children. In the pediatric freestanding hospitals, this value ranged, from 62.99% to 88.96%, respectively and from 77.11% to 93.87%, while in general hospitals, it ranged from 32.44% to 68.34% and from 60.09% to 72.85%, respectively.

Descriptive findings

The top box composite and item percentages are shown in Table 3.

As shown in Table 4, the mean top-box scores ranged between 37.83% ("Preventing mistakes and helping you report concerns") and 69.16% ("Communication Doctors–Caregivers"). Overall, the 3 highest composites were "Paying attention to your child's pain" (75.54%), "Communication Physicians–Carers" (69.16%), and "Communication Nurses–Carers" (67.49%), while the three lower composites were "Preventing mistakes and helping you report concerns", "Preparing you and your child to leave the hospital", and "Helping your child to feel comfortable". The freestanding pediatric hospitals had higher values for the composite scores than general hospitals, except for "Preventing mistakes and helping you report concerns" and "Responsiveness to the call button".

The composite score "Prepare you and your child to leave the hospital" presented the most of missing data. Specifically, the missing data for the single measures making up the composite score were $N = 147$, $N = 216$, $N = 239$, $N = 248$, and $N = 232$.

Inferential findings

Pearson's r and the univariate data are shown in Table 5. In the multivariate analysis, where "Overall rating of hospital" is considered a dependent variable, nurses' workload ($\beta -2.116$; 95%CI $-3.581 -0.652$; $R = 0.005$), teaching status ($\beta 16.062$; 95% CI $1.265-30.858$; $P = 0.034$) and being in a freestanding pediatric hospital ($\beta 19.177$; 95% CI $8.424-29.931$; $P = 0.001$) had statistically significant associations. The univariate linear regression model showed that the overall rating decreased by 2.116 points for each additional point for the workload. Adding into the model the hospital and clinical area, the effect of workload was no longer statistically significant ($\beta -0.197$; $P = 0.054$). The effect of the type of hospital was significant ($\beta 0.283$; $P = 0.006$), and the clinical area was excluded from the model.

Table 1

Sample size stratified in freestanding or general hospital: hospitals ($N = 9$), nurses ($N = 1472$), and informal carers ($N = 635$).

	Pediatric Hospitals, ($N = 3$)	General Hospitals ($N = 6$)
Hospital size		
≤100 beds	0	2
01–250 beds	1	4
≤251 beds	2	0
Teaching status	3	4
Technology status	2	5
Units N (%)	55 (57.29)	41 (42.71)
Nurses N (%)	319 (21.67)	1153 (78.32)
Children's carers N (%)	318 (50.2)	317 (49.8)

Table 2

Nurses' characteristics ($N = 1472$).

Female, N (%)	1279 (86.9)
Age, mean (SD)	39.52 (9.82)
Years as nurse, mean (SD)	15.06 (10.21)
Bachelor's in nursing (%)	5.1
Bachelor in Pediatric Nursing, N (%)	416 (28.3)
Master's degree, N (%)	101 (6.9)
Workload, mean (SD)	6.53 (4.62)
*PES-NWI Comp. Score, mean (SD)	2.70 (0.35)

* PES-NWI: Practice Environment Scale - Nursing Work Index.

Discussion

The RN4CAST@IT-Ped study is pioneering from several points of view. It was the first European study to involve a large sample of pediatric nurses, considering the multiple variables that influence nursing care, and the first study that correlates carer outcomes with organizational characteristics and nursing staff.

Our results are congruent with those reported in other studies: the variable with the lowest values was "Preventing errors and helping to report problems" (38%) also in the USA (55%) (Toomey et al., 2017) and Canada (41.5%) (Kemp et al., 2018); the variable with the highest values in our study was pain management (75.5%), similar to findings of studies conducted in the USA (72.6%) (Toomey et al., 2017) and Canada (74%) (Kemp et al., 2018); the values of the variables relating to overall hospital assessment are also in line with those of previous studies. Our result regarding "Overall rating" was 62.6% compared to 63.9% in Canada (Kemp et al., 2018), and 73% in the USA (Toomey et al., 2017); and 75.1% about "Willingness to recommend hospital" (Canada: 83.9% [Kemp et al., 2018], USA: 80% [Toomey et al., 2017]).

Based on our results, the overall experience of the children's family carers was positively associated with pediatric hospitals rather than general hospitals, a confirmed finding in the literature (Kemp et al., 2018; Toomey et al., 2017). Our results also confirmed the need to create care settings that enable the provision of child and family-centred care about the characteristics of the environment, the procedures, the

Table 3

Children ($N = 630$) and their informal carers' ($N = 635$) characteristics.

Male children, N (%)	362 (57)
Age of child < 1 ($n = 620$), N (%)	192 (30.2)
Age of child, Y mean (SD) ($N = 427$)	8.11 (4.68)
Global health status of child ($N = 610$)	
Excellent, N (%)	51 (8.2)
Very good, N (%)	163 (26.7)
Good, N (%)	232 (38)
Fair, N (%)	146 (24)
Poor, N (%)	18 (3)
Child nationality ($n = 631$)	
Italian, N (%)	582 (92.2)
Other European countries, N (%)	30 (4.8)
Extra European countries, N (%)	19 (3)
Length of child's hospital stay, D mean (SD) ($N = 635$)	11.04 (9.61)
Age of caregiver, mean years (SD) ($N = 628$)	39.2 (7.98)
Education level of carers ($N = 624$)	
< high school, N (%)	162 (26)
High school, N (%)	297 (47.6)
Degree, N (%)	165 (26.4)
Carer's relationship with the child ($N = 634$)	
Mother, N (%)	507 (80)
Father, N (%)	116 (18.3)
Other, N (%)	11 (1.7)
Carer's time spent in the hospital with child ($N = 621$)	
All or nearly all of the time	442 (71)
Most of the time	129 (20.8)
Some of the time	37 (6)
A little time	12 (2)
None	1 (0.2)

Table 4
Top Box Composite and item scores, overall and by hospital type.

Measures	Overall (N = 9)	Pediatric Hospitals (N = 3)	General Hospitals (N = 6)
	Mean % (SD)	Mean % (SD)	Mean % (SD)
Communication with carers			
Communication Nurses-Carers	67.5 (21.28)	69.7 (22.34)	64.5 (19.63)
Communication Physicians-Carers	69.2 (21.35)	70.7 (21.70)	67 (20.96)
Keeping you informed about your child's care	59.9 (24.09)	62.8 (24.02)	56.1 (23.93)
Preparing you and your child to leave the hospital	43 (22.24)	44.4 (23.27)	41.3 (20.99)
Privacy when talking with physicians, nurses, and other providers	58.9 (29.41)	64.3 (27.37)	51.7 (30.82)
Attention to safety and comfort			
Preventing mistakes and helping you report concerns	37.8 (21.59)	37.3 (22.20)	38.6 (20.99)
Helping your child feel comfortable	45.6 (17.84)	46.7 (16.90)	44.2 (19.14)
Responsiveness to the call button	59.4 (31.34)	55.5 (32.98)	64.2 (28.85)
Paying attention to your child's pain	75.5 (30.36)	77.7 (28.43)	72.7 (32.87)
Hospital environment			
Cleanliness of hospital room	57.5 (28.68)	58.8 (29.63)	55.7 (27.64)
Quietness of hospital room	55.3 (28.98)	61 (28.96)	47.6 (27.51)
Global ratings			
Overall rating of the hospital	62.6 (27.70)	70.9 (26.23)	51.7 (26.03)
Willingness to recommend the hospital	75.1 (24.11)	80.9 (23.16)	67.3 (23.43)

professionals, and the care they provide (Mandato et al., 2020; Tripodi et al., 2019).

'Composite communication' and 'relationship' were the aspects which obtained higher percentages of top box responses. These data are extremely interesting because, from the results that emerged from the nurses' survey regarding missed nursing care, the activity "comforting talking to patients" was the most omitted one by 47%, 50%, and 43.4% of the nurses in the surgical, medical, and critical care areas, respectively (Sasso et al., 2019). The frequent omission of this activity could be explained by the nurses' awareness of the need to devote more time to listening and relating themselves with the whole family. From the qualitative analysis carried out in a similar study, in the same environment, the centrality of the family, active listening, education, as well as direct care for the family was a priority for pediatric nurses, who often perform these activities when care is less intense, for example at night (Bagnasco et al., 2020). Not being able to enroll caregivers who did not speak Italian, English, or Spanish certainly influenced the data relating to communication. It would be very interesting to study the topic further, perhaps through the involvement of interpreters, to understand the limits of the assistance provided to foreign patients or those of ethnic minorities, who may have different customs and beliefs to healthcare and illness (Donaldson et al., 2022).

A particularly critical point in the analysis of our data regarded preparation for discharge because less than half of the respondents gave a "top box" answer, and, even more interestingly, was the number of respondents who did not answer to this section. In the literature, there has been a general increase in interest in pediatric hospital discharge. However, nursing discharge interventions that impact patient safety (e.g. hospital readmissions or length of stay) or healthcare costs, have not yet been implemented (Auger et al., 2018; Breneol et al., 2018). The point of view of informal carers has been extensively studied, highlighting the needs and difficulties that families have to face at home after discharge (Feng et al., 2020; Mallory et al., 2017; Ronan et al., 2020), but few studies investigate this process from a nursing point of view, to understand the dynamics and difficulties, including logistical-organizational aspects that may hinder the process. Studies that investigate the discharge process in the pediatric setting, with a focus on the nursing care process, often deal with missed nursing care (Lake et al., 2017), perpetuating a partial point of view where it is not always possible to identify the many and complex interventions that nurses put in place during their interventions (Bagnasco et al., 2019).

Limitations of the study

A limitation of this study was the observational and cross-sectional design, which does not enable the identification of causal relationships between variables. Furthermore, the self-reported nature of the data could be a cause of bias, particularly given that data collection occurred while children and their carers were still hospitalized. Additionally, convenience sampling among AOPI-affiliated hospitals may have created selection bias; despite being different hospitals (freestanding pediatrics, general hospital with pediatric department, and general hospital with pediatric units), they are nevertheless attentive to the care and assistance needs of the pediatric patient. However, a strength of this study is that it was conducted according to an international study protocol (Sermeus et al., 2011), which allows for data comparability. Another fundamental strength involves using the Child-HCAHPS tool, a validated tool to investigate the experience of pediatric patients. Furthermore, the heterogeneity of the hospitals involved and their distribution across Italy lend greater credibility to the results. These points contribute to the robustness of our data and the results we have drawn from them.

Future studies should directly involve pediatric patients using appropriate data collection methodologies to grasp their hospitalization experience and ultimately implement child-centered interventions fully. Moreover, convenience sampling within AOPI-affiliated hospitals

Table 5
Correlation and univariate linear regression.

Outcome: Carers that gave a rating of 9 or 10		
Independent Variable	R	β (95%CI)
Pediatric hospital	-0.333***	19.177 (8.424–29.931)***
Technological status	-0.097	-6.254 (-19.437–6.929)
Teaching status	0.218 (0.034)*	16.062 (1.265–30.858)*
Bachelor's in Nursing	-0.008	-0.008 (-0.207–0.192)
Bachelor's in Pediatric Nursing	0.193	0.193 (-0.011–0.491)
Nurse Workload	-0.285**	-2.116 (-3.581–0.6525)**
Nurse work environment (PES.NWI composite Score)	0.143	5.56(-2.379–13.5)

For R (or Pearson r), a Pearson correlation coefficient test was applied.

* P ≤ .05.

** P ≤ .01.

*** P ≤ .001.

could be considered a selection bias and thus counts among the limitations of this study.

Practice implications

Organizational strategies to improve patient safety outcomes and satisfaction can be facilitated by improving the working conditions of nurses and enhancing interprofessional collaboration through supportive leadership, data-driven approaches, and user experiences. Managers should consider patient and informal carer outcomes and workforce structure characteristics as predictors of users' satisfaction. Health systems should focus on improving these aspects by developing bottom-up improvement interventions to increase the quality of care.

Although the results of this study date back to the pre-pandemic era, their usefulness lies in having placed first descriptive data helpful in evaluating the changes. In the current political and economic context, discussing new strategies for safely and efficiently managing hospital conditions, care processes, and discharge is even more important. More often, we discuss the creation of transitional places where the nursing figure plays a crucial role.

Conclusions

This study shows a panorama of pediatric health care provided in a hospital in Italy from users' perspectives, using the Child HCAHPS survey, which is a standard measurement tool. The main findings of this study indicate that family carers generally have a good opinion of the care received by their children during hospitalization; however, critical gaps were highlighted, such as preparation for discharge or safety of care. This descriptive study is an important step in creating environments increasingly focused on family and child centred care. The spaces, the rhythms, and the communication styles that characterize pediatric care settings enable the child and the family to maintain normality as much as possible. Based on our results, it is also possible to conclude that high-quality nursing care in this area plays a crucial role: adequate numbers of nurses provide complete care and the implementation of complex interventions that ensure a child and family centred care therapeutic pathway throughout their stay in hospital. We found a correlation between users' outcomes, in terms of safety and good evaluation, with the characteristics of nursing staff and that an adequate workload for nurses improves informal carers' assessment of their child's hospitalization experience.

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Declaration of Competing Interest

The authors of this manuscript have no competing interests as defined by the editorial policy of Journal of Pediatric Nursing. They moreover have no other interests that may have influenced the results and discussion of this paper.

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References

- Auger, K. A., Simmons, J. M., Tubbs-Cooley, H. L., Sucharew, H. J., Statile, A. M., Pickler, R. H., ... H2O Trial study group (2018). Postdischarge nurse home visits and reuse: The hospital to home outcomes (H2O) trial. *Pediatrics*, 142(1), Article e20173919. <https://doi.org/10.1542/peds.2017-3919>.
- Bagnasco, A., Dasso, N., Rossi, S., Timmins, F., Aleo, G., Catania, G., ... Sasso, L. (2019). Missed care in children's nursing-an emergent concern. *Journal of Advanced Nursing*, 75(5), 921–923. <https://doi.org/10.1111/jan.13965>.
- Bagnasco, A., Dasso, N., Rossi, S., Timmins, F., Aleo, G., Catania, G., ... Sasso, L. (2020). A qualitative descriptive inquiry of the influences on nurses' missed care decision-making processes in acute hospital paediatric care. *Journal of Nursing Management*, 28(8), 1929–1939. <https://doi.org/10.1111/jonm.12935>.
- Benson, T., & Benson, A. (2023). Routine measurement of patient experience. *BMJ Open Quality*, 12(1), Article e002073. <https://doi.org/10.1136/bmjopen-2022-002073>.
- Breneol, S., Hatty, A., Bishop, A., & Curran, J. A. (2018). Nurse-led discharge in pediatric care: A scoping review. *Journal of Pediatric Nursing*, 41, 60–68. <https://doi.org/10.1016/j.pedn.2018.01.014>.
- Catania, G., Zanini, M., Hayter, M., Timmins, F., Dasso, N., Ottonello, G., ... Bagnasco, A. (2021). Lessons from Italian front-line nurses' experiences during the COVID-19 pandemic: A qualitative descriptive study. *Journal of Nursing Management*, 29(3), 404–411. <https://doi.org/10.1111/jonm.13194>.
- Clark, R., & Lake, E. (2020). Burnout, job dissatisfaction and missed care among maternity nurses. *Journal of Nursing Management*, 28(8), 2001–2006. <https://doi.org/10.1111/jonm.13037>.
- Coleman, L. N., Wathen, K., Waldron, M., Mason, J. J., Houston, S., Wang, Y., & Hinds, P. S. (2020). The child's voice in satisfaction with hospital care. *Journal of Pediatric Nursing*, 50, 113–120. <https://doi.org/10.1016/j.pedn.2019.11.007>.
- Council of Europe (Council of Europe Publishing) (2018). Council of Europe Guidelines of the Committee of Ministers of the Council of Europe on child-friendly health care. F-67075 Strasbourg Cedex. <http://book.coe.int/children>.
- Donaldson, C. D., Bharadwaj, A., Giafaglione, B., Patton, P., Fortier, M. A., & Kain, Z. N. (2022). Ethnicity and language differences in patient experience: An analysis of the HCAHPS survey. *Journal of Racial and Ethnic Health Disparities*, 9(3), 899–908. <https://doi.org/10.1007/s40615-021-01029-0>.
- Feng, J. Y., Toomey, S. L., Elliott, M. N., Zaslavsky, A. M., Onorato, S. E., & Schuster, M. A. (2020). Factors associated with family experience in pediatric inpatient care. *Pediatrics*, 145(3), Article e20191264. <https://doi.org/10.1542/peds.2019-1264>.
- Ferreira, J., Patel, P., Guadagno, E., Ow, N., Wray, J., Emil, S., & Poenaru, D. (2023). Patient experience or patient satisfaction? A systematic review of child- and family-reported experience measures in pediatric surgery. *Journal of Pediatric Surgery*, 58(5), 862–870. <https://doi.org/10.1016/j.jpedsurg.2023.01.015>.
- Hallowell, S. G., Rogowski, J. A., & Lake, E. T. (2019). How nurse work environments relate to the presence of parents in neonatal intensive care. *Advances in Neonatal Care: Official Journal of the National Association of Neonatal Nurses*, 19(1), 65–72. <https://doi.org/10.1097/ANC.0000000000000431>.
- Hugelius, K., Harada, N., & Marutani, M. (2021). Consequences of visiting restrictions during the COVID-19 pandemic: An integrative review. *International Journal of Nursing Studies*, 121, Article 104000. <https://doi.org/10.1016/j.ijnurstu.2021.104000>.
- Hyczko, A. V., Fu, C., Graf, Z., Perkowski, C. D., Whyte-Nesfield, M. M., Zhou, S., & Zurca, A. D. (2022). Evaluating pediatric Families' understanding of and reactions to COVID-19 visitor restrictions. *Journal of Patient Experience*, 9, 23743735221077547. <https://doi.org/10.1177/23743735221077547>.
- Irvine, D., Sidani, S., & Hall, L. M. (1998). Linking outcomes to nurses' roles in health care. *Nursing Economics*, 16(2), 58–87.
- Juvé-Udina, M. E., González-Samartino, M., López-Jiménez, M. M., Planas-Canals, M., Rodríguez-Fernández, H., Batuecas Duelt, I. J., ... Adamuz, J. (2020). Acuity, nurse staffing and workforce, missed care and patient outcomes: A cluster-unit-level

- descriptive comparison. *Journal of Nursing Management*, 28(8), 2216–2229. <https://doi.org/10.1111/jonm.13040>.
- Kemp, K. A., Ahmed, S., Quan, H., Johnson, D., & Santana, M. J. (2018). Family experiences of pediatric inpatient care in Alberta, Canada: Results from the child HCAHPS survey. *Hospital Pediatrics*, 8(6), 338–344. <https://doi.org/10.1542/hpeds.2017-0191>.
- Kutney-Lee, A., McHugh, M. D., Sloane, D. M., Cimiotti, J. P., Flynn, L., Neff, D. F., & Aiken, L. H. (2009). Nursing: A key to patient satisfaction. *Health Affairs (Project Hope)*, 28(4), w669–w677. <https://doi.org/10.1377/hlthaff.28.4.w669>.
- Lake, E. T. (2002). Development of the practice environment scale of the Nursing Work Index. *Research in Nursing & Health*, 25(3), 176–188. <https://doi.org/10.1002/nur.10032>.
- Lake, E. T., de Cordova, P. B., Barton, S., Singh, S., Agosto, P. D., Ely, B., ... Aiken, L. H. (2017). Missed nursing care in Pediatrics. *Hospital Pediatrics*, 7(7), 378–384. <https://doi.org/10.1542/hpeds.2016-0141>.
- Lake, E. T., & Friese, C. R. (2006). Variations in nursing practice environments: Relation to staffing and hospital characteristics. *Nursing Research*, 55(1), 1–9. <https://doi.org/10.1097/00006199-200601000-00001>.
- Lasater, K. B., McCabe, M. A., Lake, E. T., Frankenberger, W. D., Roberts, K. E., Agosto, P. D., ... Aiken, L. H. (2020). Safety and quality of pediatric care in freestanding children's and general hospitals. *Hospital Pediatrics*, 10(5), 408–414. <https://doi.org/10.1542/hpeds.2019-0234>.
- Lloyd, R., Munro, J., Evans, K., Gaskin-Williams, A., Hui, A., Pearson, M., ... Rennick-Eggleson, S. (2023). Health service improvement using positive patient feedback: Systematic scoping review. *PLoS One*, 18(10), Article e0275045. <https://doi.org/10.1371/journal.pone.0275045>.
- Mallory, L. A., Osorio, S. N., Prato, B. S., DiPace, J., Schmutter, L., Soung, P., & IMPACT Pilot Study Group (2017). Project IMPACT pilot report: Feasibility of implementing a hospital-to-home transition bundle. *Pediatrics*, 139(3), Article e20154626. <https://doi.org/10.1542/peds.2015-4626>.
- Mandato, C., Siano, M. A., De Anseris, A., Tripodi, M., Massa, G., De Rosa, R., ... Vajro, P. (2020). Humanization of care in pediatric wards: Differences between perceptions of users and staff according to department type. *Italian Journal of Pediatrics*, 46(1), 65. <https://doi.org/10.1186/s13052-020-00824-5>.
- Mazurenko, O., Collum, T., Ferdinand, A., & Menachemi, N. (2017). Predictors of hospital patient satisfaction as measured by HCAHPS: A systematic review. *Journal of Healthcare Management / American College of Healthcare Executives*, 62(4), 272–283. <https://doi.org/10.1097/JHM-D-15-00050>.
- McBride, D. L. (2021). The impact of visiting restrictions during the COVID-19 pandemic on pediatric patients. *Journal of Pediatric Nursing*, 61, 436–438. <https://doi.org/10.1016/j.pedn.2021.09.004>.
- Ogboenyi, A. A., Tubbs-Cooley, H. L., Miller, E., Johnson, K., & Bakas, T. (2020). Missed nursing care in pediatric and neonatal care settings: An integrative review. *MCN. The American Journal of Maternal Child Nursing*, 45(5), 254–264. <https://doi.org/10.1097/NMC.0000000000000642>.
- Paguio, J. T., Yu, D. S. F., & Su, J. J. (2020). Systematic review of interventions to improve nurses' work environments. *Journal of Advanced Nursing*, 76(10), 2471–2493. <https://doi.org/10.1111/jan.14462>.
- Quigley, D. D., Palamaru, A., Lerner, C., & Hays, R. D. (2020). A review of best practices for monitoring and improving inpatient pediatric patient experiences. *Hospital Pediatrics*, 10(3), 277–285. <https://doi.org/10.1542/hpeds.2019-0243>.
- Quigley, D. D., & Predmore, Z. (2022). What parents have to say: Content and actionability of narrative comments from child HCAHPS survey. *Hospital Pediatrics*, 12(2), 205–219. <https://doi.org/10.1542/hpeds.2021-006032>.
- Ronan, S., Brown, M., & Marsh, L. (2020). Parents' experiences of transition from hospital to home of a child with complex health needs: A systematic literature review. *Journal of Clinical Nursing*, 29(17–18), 3222–3235. <https://doi.org/10.1111/jocn.15396>.
- Sasso, L., Bagnasco, A., Petralia, P., Scelsi, S., Zanini, M., Catania, G., ... Aiken, L. H. (2018). RN4CAST@IT-Ped: Nurse staffing and children's safety. *Journal of Advanced Nursing*, 74(6), 1223–1225. <https://doi.org/10.1111/jan.13462>.
- Sasso, L., Bagnasco, A., Scelsi, S., Zanini, M., Catania, G., Rossi, S., ... Aiken, L. (2019). Impatto dell'assistenza infermieristica pediatrica sulla qualità delle cure: RN4CAST@IT-Ped, un'analisi descrittiva. *L'Infermiere*, 56(4), e73–e80.
- Sermeus, W., Aiken, L. H., Van den Heede, K., Rafferty, A. M., Griffiths, P., Moreno-Casbas, M. T., ... RN4CAST consortium (2011). Nurse forecasting in Europe (RN4CAST): Rationale, design and methodology. *BMC Nursing*, 10, 6. <https://doi.org/10.1186/1472-6955-10-6>.
- Smorti, M., Ponti, L., Ionio, C., Gallese, M., Andreol, A., & Bonassi, L. (2022). Becoming a mother during the COVID-19 national lockdown in Italy: Issues linked to the wellbeing of pregnant women. *International Journal of Psychology : Journal international de psychologie*, 57(1), 146–152. <https://doi.org/10.1002/ijop.12806>.
- Toomey, S. L., Elliott, M. N., Zaslavsky, A. M., Klein, D. J., Ndon, S., Hardy, S., ... Schuster, M. A. (2017). Variation in family experience of pediatric inpatient care as measured by child HCAHPS. *Pediatrics*, 139(4), Article e20163372. <https://doi.org/10.1542/peds.2016-3372>.
- Toomey, S. L., Zaslavsky, A. M., Elliott, M. N., Gallagher, P. M., Fowler, F. J., Jr., Klein, D. J., ... Schuster, M. A. (2015). The development of a pediatric inpatient experience of care measure: Child HCAHPS. *Pediatrics*, 136(2), 360–369. <https://doi.org/10.1542/peds.2015-0966>.
- Tripodi, M., Siano, M. A., Mandato, C., De Anseris, A., Quitadamo, P., Guercio Nuzio, S., ... Vajro, P. (2019). Humanization interventions in general pediatric wards: A systematic review. *European Journal of Pediatrics*, 178(5), 607–622. <https://doi.org/10.1007/s00431-019-03370-3>.
- Tubbs-Cooley, H. L., Perry, M., & Keim-Malpass, J. (2020). To Improve the Inpatient Experience, Invest in the Human Side of Health Care. *Pediatrics*, 145(3), Article e20193760. <https://doi.org/10.1542/peds.2019-3760>.
- Vance, A. J., Malin, K. J., Miller, J., Shuman, C. J., Moore, T. A., & Benjamin, A. (2021). Parents' pandemic NICU experience in the United States: A qualitative study. *BMC Pediatrics*, 21(1), 558. <https://doi.org/10.1186/s12887-021-03028-w>.
- World Health Organization. Regional Office for Europe, European Observatory on Health Systems and Policies, Rafferty, A. M., Busse, R., Zander-Jentsch, B., Sermeus, W., & Bruyneel, L. (2019). Strengthening health systems through nursing: evidence from 14 European countries. <https://iris.who.int/handle/10665/326183>.
- Wray, J., Hobden, S., Knibbs, S., & Oldham, G. (2018). Hearing the voices of children and young people to develop and test a patient-reported experience measure in a specialist paediatric setting. *Archives of Disease in Childhood*, 103(3), 272–279. <https://doi.org/10.1136/archdischild-2017-313032>.
- Zanini, M., Catania, G., Hayter, M., Dasso, N., Ottonello, G., Aleo, G., ... Bagnasco, A. (2022). Italian nurses' COVID-19 experiences from mass media interviews: A qualitative study. *Journal of Preventive Medicine and Hygiene*, 62(4), E795–E801. <http://doi.org/10.15167/2421-4248/jpmh2021.62.4.2024>.
- Zaslavsky, O. N., Hays, A. M., Cleary, P. D. R. D., Haviland, A. M., Brown, J. A., Dembosky, J. W., Martino, S. C., Gaillot, S., & Elliott, M. N. (2023). Development, methodology, and adaptation of the Medicare Consumer Assessment of Healthcare Providers and Systems (CAHPS®) patient experience survey, 2007–2019. *Health Services & Outcomes Research Methodology*, 23, 1–20. <https://doi.org/10.1007/s10742-022-00277-9>.