Humanisation in the emergency department of an Italian hospital: new features and patient satisfaction

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ABSTRACT

Objectives The goal of this study was to describe and analyse interventions performed in the emergency department (ED) of an Italian hospital with the aim of humanising the patient care pathway. The actions taken are described and the changes analysed to determine whether they resulted in an increased level of patient satisfaction.

Methods An observational study was conducted between October 2010 and March 2011. The data were collected via a telephone questionnaire administered to patients who were admitted to the ED before and after humanisation interventions. The respondents were questioned about their general condition and their level of satisfaction.

Results The study population included 297 patients (158 before and 139 after the interventions). The highest overall patient satisfaction after the interventions was highly correlated with the humanisation interventions and not with other factors such as gender, age, educational level or the severity code triage. Specifically, in patients who went to the ED after the changes had been made, there was a greater level of satisfaction regarding comfort in the waiting room, waiting time for the first visit and the privacy experienced during the triage.

Conclusion The results demonstrate that the interventions implemented in this study, designed to humanise the ED, improved overall patient satisfaction. Interventions may be taken to reduce the depersonalisation of patients in the emergency room.

INTRODUCTION

In recent years the levels of medical assistance and hospital care have been enhanced as a result of technological performance improvements in diagnostics and treatment. However, care pathway fragmentation, the increase in medical specialists and the lack (at least in Italy) of a 'care manager' have led to the depersonalisation of patients. These issues are greater in the emergency department (ED) due to the services provided and the greatest risk of depersonalisation or 'dehumanisation'.[1]

In the current global financial crisis, quality is a critical factor for the survival of healthcare facilities. Although every effort is aimed at reducing costs and increasing the number of procedures performed, the risk of losing the centrality of the patient as a 'human' is high.

Since the 1990s, research interest in clinical practice quality assessment has continuously grown.[2 3] The concept of 'customer satisfaction' (or 'patient satisfaction') must be placed in the context of overall quality improvement, and it is a serious issue in emergency medicine, as shown in the literature,[4–8] which emphasises the difficulty of accurately measuring patient satisfaction because it may be influenced by perception, the interpretation of events or clinical conditions.[1]

Quality and satisfaction are strictly related to the concept of humanisation of healthcare, which involves medical services for diagnostics and treatment and also the other aspects of the care process such as logistics, environment, food, waiting times and communication.[9] However, little attention has been given to the concept of 'humanisation' in international medical publications because the literature is more focused only on the concept of 'patient satisfaction'.

Few studies have compared the level of satisfaction perceived by patients before and after an ED humanisation intervention,[10 11] and most of the studies have focused on a specific intervention. For example, Kologlu *et al*[12] and Krishel *et al*[13] reported the results of an improvement intervention (ie, the distribution of an information form), Corbett *et al* studied an informational videotape[14] and George *et al* used an informal prioritisation process for waiting times.[15]

Other studies have suggested that patients' overall perception of care appeared to be associated with the humanistic attitude and technical competencies of the professionals, the perceived waiting time, the perceived total time spent in the ED and the amount of information provided to patients.[7 11 16] However, there are other factors associated with patient satisfaction that are difficult to evaluate, such as privacy, cleanliness, safety and low noise levels in patient rooms.[4]

Despite the high incidence of ED use, in Italy only a few examples of the humanisation process can be enumerated and most of these are associated with patients with a specific pathology.[17 18]

The aim of this paper is to describe and evaluate the effectiveness of interventions designed to improve the patient experience in the ED.

METHODS

An observational longitudinal before and after study was conducted to evaluate patient satisfaction levels[19] after a series of structural and organisational changes were applied in an ED. The study was authorised by the Health Department staff and carried out from October 2010 to March 2011 in the ED of Rivoli Hospital located in the Turin urban area.

Study population

The study population included all patients who were admitted to the emergency room during

October, November and December 2010 (before the 'humanisation' interventions) as well as during January, February and March 2011 (after the 'humanisation' interventions). To select patients for this study we chose 2 days of the week and contacted all of the patients who had been admitted to the ED during those specific days. Saturday and Wednesday were chosen to represent the holidays and work days, respectively. Patients admitted with a triage 'Red Code' due to the admission details that characterised these patients, such as the urgency of their condition, were excluded.

Study design

Patients were contacted by telephone 2 weeks after visiting the ED. Participation in the interview, which was conducted by medical professionals,[5 20] was voluntary after the patient was given a thorough explanation of the study and gave consent. Before the interview the patient was informed about the opportunity to refuse or stop the interview at any time. Clinical data on the patient's condition or information about prescribed therapies or diagnostics performed in the ED were not collected.

Ethical approval is not necessary in Italy for customer satisfaction surveys when this kind of study is conducted after authorisation by the hospital management and all the data are processed anonymously. The personal data of patients collected from the clinical record were therefore used only to identify the patients called, but were not inserted in the interview database in order to guarantee anonymity.

The questionnaire was first tested in a pilot study on 30 individuals who were excluded from the final study. The questionnaire was designed to measure overall patient satisfaction and to assess, at an individual level, the different aspects of satisfaction. We calculated the average satisfaction values for the abovementioned categories—namely, first impression of the ED, adequacy of signage, comfort level in the waiting room, presence and availability of staff, waiting time for the first visit, clarity of information received, volunteer activities, discretion during triage and overall opinion. Using a 10-point scale, the average values were calculated to assess the satisfaction trends before and after the intervention.

In addition, patient demographic information (age, sex and educational level) and other information (admission time to the ED, triage code and previous ED admissions) were included.

The study population was then divided into two subgroups: the first group ('Before') included patients who were admitted to the ED before implementation of the changes described above and the second group ('After') consisted of those who went to the ED after the changes had been implemented. The inclusion criteria ensured the comparability of the groups.

In order to humanise the care pathway, we studied and performed structural and organisational changes to improve the ED area. The changes that were implemented are described in table 1.

A descriptive analysis of the study population, including patient demographic information (age, sex, and educational level) and other information (admission time to the ED, triage code, and previous ED admissions) was performed to verify the comparability of the two groups.

Analysis of data

Multinomial logistic regression was performed to identify the potential predictors of the differences in the distribution among the three classes of patient satisfaction (poor, medium and high). We developed several bivariate models and identified variables that were significantly associated with the outcome at a 5% level. These variables were included in the multinomial regression analysis. In the final model the variables were group, age class, gender and education. The final model estimates for each of the variables were adjusted by controlling for the other variables. A two-tailed p value of 0.05 was considered significant for all analyses, which were carried out using Stata V.11.

RESULTS

The source population was made up of all persons attending the ED on the days established. It was necessary to exclude 52% of the subjects due to lack of contact information or because they did not answer the telephone on two occasions. The study population was composed of 576 individuals who were invited to participate in the interview. The compliance rate was 53%. The final sample therefore comprised 297 subjects (49.5% men) of mean±SD age 48.6±13.9 years. The details and descriptive characteristics of the participants stratified by group ('Before' and 'After') are summarised in table 2.

We initially estimated the range of the average satisfaction level by group (figure 1). The perceived satisfaction level was slightly greater in the 'After' group for the following categories: comfort level in the waiting room, waiting time for the first visit, clarity of the information received, discretion during triage and overall opinion. In contrast, the overall average rating in the 'After' group was slightly lower for first impression of the ED, adequacy of signage and presence and availability of staff.

Table 1 Structural and organisational interventions

Introduction of a new triage 'silver code'	In Italy, a four-colour level triage system is used (in ascending emergency order: white, green, yellow and red). The 'silver code' is a priority green code assigned to elderly patients (>70 years) with certain clinic characteristics to ensure shorter waiting times[21 22] (see Annex 1 online only)	Organisational
Review of criteria for paediatric triage	A multidisciplinary working group established new standards and pathways for paediatric triage to ensure paediatric patient care pathway uniformity, less resource utilisation and more rational pathways to meet the patient needs (see Annex 2 online only)	Organisational
Create a new triage room with a dedicated nurse	To accelerate and streamline triage operations, a new position, namely, a 'welcoming manager' with management and patient sorting skills, was defined.	Organisational and structural
	The dedicated nurse is the professional reference for a patient and his/her family.	
Improvement of the waiting room	The waiting rooms were improved by renovating the design (or layout) of facility spaces and increasing the number of facilities[23]	Structural
Creation of a waiting room specifically for paediatric patients	A paediatric patient waiting room was furnished according to the needs of this age group	Structural and organisational
Introduction of volunteers	In the early stages of the project it was decided to define clearly the roles and assigned tasks of volunteers. Volunteer staff training was ensured by developing a course that was organised by the hospital	Organisational

Table 2 Description of study population (N=297)

	'Before' group N (%)	'After' group N (%)	p Value
Gender			
Male	75 (47.5)	72 (51.8)	0.45
Female	83 (52.5)	67 (48.2)	
Mean (SD) age	48.41 (13.75)	48.71 (16.60)	0.65
Age group			
16–45	66 (44.6)	55 (39.9)	0.14
46–65	67 (45.3)	58 (42)	
>66	15 (10.1)	25 (18.1)	
Education			
Primary	31 (19.6)	17 (12.6)	0.06
Middle school	54 (34.1)	45 (33.5)	
High school	49 (31.0)	59 (44.0)	
College graduate	24 (15.1)	13 (9.7)	
Triage code			
White	10 (7.4)	8 (8.0)	0.73
Green	98 (72.6)	68 (68)	
Yellow	27 (20.0)	24 (24.0)	

Silver code introduced in the 'After' group and used in 10 patients.

In agreement with other studies,[24] the individual scores were grouped into three levels:

- 'poor' satisfaction (grades 1–4)
- 'fair' satisfaction (grades 5–7)
- 'good' satisfaction (grades 8–10)

The relationship between the level of perceived patient satisfaction and the humanisation intervention is summarised in table 3.

We considered the respondents' level of satisfaction for each category and compared the responses of the two groups. The satisfaction ratings of the two patient groups differed in the following categories: first impression of the ED (p<0.001), adequacy of signage (p=0.019), presence and availability of the staff (p<0.001), waiting time for the first visit (p<0.001), discretion during triage (p=0.03) and overall opinion (p<0.001).

Patients in the 'After' group showed greater satisfaction in the following categories: waiting time for the first visit, clarity of information received, discretion during triage and overall opinion of the ED. In contrast, the patients in the 'After' group appeared to perceive a lower satisfaction in the following categories: first impression of the ED, adequacy of signage, and presence and availability of the staff. Of the patients admitted before the structural and organisational changes were implemented, 60.1% reported a fair first impression of the ED and 32.3% had a good opinion. In the 'After' group, 67.6% had a fair opinion of the ED and only 9.4% had a good first impression of the ED (p<0.001).

In the 'Before' group, 7.6% of patients had a negative opinion regarding the adequacy of the signage, and this percentage rose to 17.3% in the 'After' group (p=0.019). Similar results were found for the presence and availability of the staff (fair/good evaluations given by 92.4% of patients in the 'Before' group and 87% of patients in the 'After' group; p<0.001). We did not find any statistical differences between the level of comfort in the waiting room (p=0.46) and the clarity of information received (p=0.57).

We specifically analysed these data using a multivariate analysis to investigate which factors affected the overall patient opinion using overall good opinion as the dependent variable. Table 4 shows that the categories significantly associated with an overall good opinion of the ED (p<0.05) were level of comfort in the waiting room, waiting time for the first visit and discretion during triage. All of these variables had a positive effect on patient satisfaction while the first impression of the ED had a negative effect.

A multinomial logistic regression was performed to identify the potential predictors of the differences in the score distributions among the three classes of patient satisfaction. Table 5 shows that the 'After' group had a greater level of satisfaction

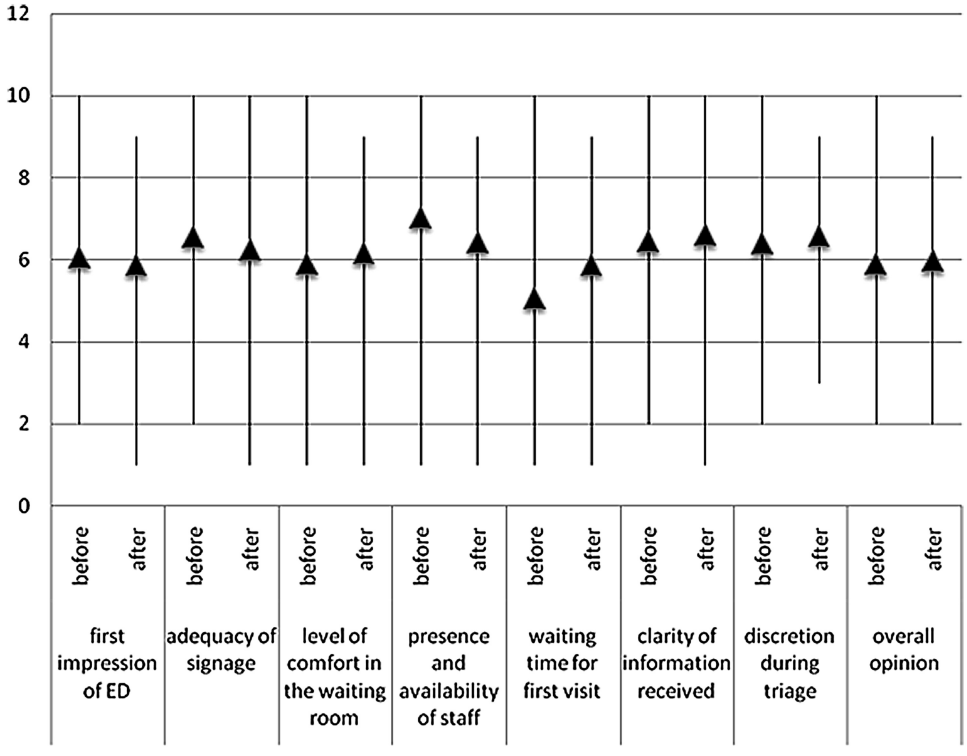

Figure 1 Medium level of patient satisfaction before and after implementation of the changes in the emergency department.

Table 3 Categories of patient satisfaction before and after the humanisation interventions

	'Before' group, N (%)			'After' group, N (%)			
	Poor	Fair	Good	Poor	Fair	Good	p Value
First impression of the ED	12 (7.6)	95 (60.1)	51 (32.3)	32 (23.0)	94 (67.6)	13 (9.4)	<0.001
Adequacy of signage	12 (7.6)	102 (64.6)	44 (27.8)	24 (17.3)	88 (63.3)	27 (19.4)	0.019
Level of comfort in the waiting room	30 (19)	96 (60.8)	32 (20.2)	33 (21.2)	75 (54)	31 (49.2)	0.46
Presence and availability of staff	12 (7.6)	73 (46.2)	73 (46.2)	18 (13)	90 (64.7)	31 (22.3)	<0.001
Waiting time for first visit	69 (43.7)	65 (41.1)	24 (15.2)	27 (19.4)	76 (54.7)	36 (25.9)	<0.001
Clarity of information received	19 (12)	102 (64.6)	37 (23.4)	16 (11.5)	83 (59.7)	40 (28.8)	0.57
Volunteer activities	–	–	–	1 (0.72)	78 (56.1)	60 (43.1)	
Discretion during triage	13 (8.2)	116 (73.4)	29 (18.3)	15 (10.8)	83 (59.7)	41 (29.5)	0.03
Overall opinion	35 (22.2)	99 (62.6)	24 (15.2)	7 (5)	112 (80.6)	20 (14.4)	<0.001

than the 'Before' group regarding overall opinion of the ED. In particular, by comparing the overall opinion scores in the two groups, we found that the 'After' group had a higher probability of having an opinion of 'fair' (regression coefficient 1.50, p=0.001) or 'good' (regression coefficient 1.17 and p=0.031) compared with the probability of an overall opinion of 'poor' (table 5).

DISCUSSION

The results demonstrate that the interventions implemented in this study, designed to humanise the ED, improved overall patient satisfaction.

This is the first study conducted in Italy to describe a variety of significant structural and organisational changes implemented in the ED and to investigate how these changes are perceived by patients. The international literature is primarily focused on 'patient satisfaction', but a small number of recent studies have described and studied structural and organisational changes in the ED. Moreover, these studies have referred to individual actions (ie, structural or organisational)[13] and hardly investigated the level of satisfaction perceived by the users in relation to these action.[14] The active approach of this study, which included a practice intervention, in combination with the evaluation of the consequences of the interventions is a major strength of this study.

To choose the best interventions in the emergency room we performed a literature review and identified the most critical areas for 'depersonalisation', patient satisfaction and hospital organisation. Based on other published studies, we performed this study in the ED.

In accordance with other publications, telephone interviews were performed in this study.[20] During the waiting time in the ED, responses could have been affected by the user's state of mind or their health condition, particularly if the patient was unable to have an unbiased perspective. However, the telephone

Table 4 Satisfaction categories that determine high overall patient satisfaction

	OR	p Value	95% CI
First impression of the ED			
Poor	1	–	–
Fair	0.88	0.002	0.18 to 0.42
Good	0.38	0.28	0.66 to 2.19
Adequacy of signage			
Poor	1	–	–
Fair	1.13	0.88	0.21 to 6.02
Good	0.67	0.68	0.09 to 4.71
Level of comfort in the waiting room			
Poor	1	–	–
Fair	6.24	0.03	1.14 to 34.02
Good	1.74	0.68	0.20 to 14.59
Presence and availability of staff			
Poor	1	–	–
Fair	0.22	0.11	0.03 to 1.42
Good	1.29	0.8	0.17 to 9.8
Waiting time for first visit			
Poor	1	–	–
Fair	12.76	0.009	1.87 to 86.83
Good	25.79	0.002	3.38 to 196.54
Clarity of information received			
Poor	1	–	–
Fair	0.16	0.06	0.02 to 1.13
Good	0.36	0.33	0.046 to 2.84
Discretion during triage			
Poor	1	–	–
Fair	2.66	0.44	0.21 to 32.65
Good	15.84	0.03	1.23 to 203.6

Table 5 Results of the multinomial logistic regression evaluating potential predictors of the overall opinion of the emergency department (ED) in the 'After' group (dependent variable: overall opinion)

Overall opinion of the ED (scale)	Regression coefficient	95% CI	p Value
Fair versus poor satisfaction			
'After' group	1.50	0.61 to 2.39	0.001
Age class			
16–45	–	–	–
46–65	0.23	−0.60 to 1.06	0.58
>66	1.22	−0.41 to 2.85	0.14
Gender: male	0.12	−0.65 to 0.89	0.76
Education			
Primary	–	–	–
Middle school	0.32	−0.86 to 1.49	0.60
High school	0.30	−0.86 to 1.47	0.60
College graduate	0.41	−1.02 to 1.83	0.57
Good versus poor satisfaction			
'After' group	1.17	0.11 to 2.23	0.03
Age class			
16–45	–	–	–
46–65	0.23	−0.80 to 1.26	0.66
>66	0.42	−1.52 to 2.36	0.67
Gender: male	0.94	−0.02 to 1.90	0.06
Education			
Primary	–	–	–
Middle school	0.04	−1.38 to 1.46	0.95
High school	−0.43	−1.88 to 1.01	0.56
College graduate	0.22	−1.49 to 1.94	0.80

survey method resulted in a lower response rate than face-to-face interviews but a higher rate than email interviews.[5]

The main result of this study is an increased level of overall satisfaction after the changes in the ED. The elements found to affect overall patient satisfaction most were the level of comfort in the waiting room, waiting time for the first visit and discretion during triage. In agreement with other studies, we found that the perceived waiting time is a significant factor in satisfaction.[5 6] Previous studies showed that patients who receive information concerning their medical care and the reasons for waiting reported much higher levels of satisfaction than others who do not receive this information.[16] The findings of the present study demonstrate that discretion during triage is important in patient satisfaction, but not the clarity of information received.

We found a statistically significant decrease in the level of satisfaction from the 'Before' group to the 'After' group with regard to the first impression of the ED ($p<0.001$), the adequacy of signage ($p=0.019$) and the presence and availability of staff ($p<0.001$). The first impression of the ED and adequacy of signage can be explained by considering that the interventions mentioned in this paper are part of the overall hospital restructuring. Therefore, the 'After' group visited the hospital when different areas were incomplete or undergoing construction.

With regard to the presence and availability of staff, it may be appropriate to separate 'presence' from 'availability' in any related analyses because the 'presence/number of workers' is an objective parameter whereas the 'availability' is a personal assessment. This result should therefore be reassessed with a larger study population and a greater number of observation days.

It is clear from these results that the availability of staff and communication are two key aspects for the patient. For this reason, future efforts to improve the patient experience in the ED should provide training for staff to improve the communication and management of human relationships.

Some weaknesses of the study have been identified. In particular, the actual waiting time for each patient, the reason for patient admission[8] and the presence of pain were not evaluated. This information may affect the patient satisfaction level, as reported by other authors.[10] Further limitations of the study are the small sample size and the lack of staff training programmes concerning the 'humanisation' concept.

We conclude that, for the first time, our study demonstrates that interventions designed to humanise the ED have a real and measurable effectiveness and increase overall patient satisfaction.

Contributors EL: analysis and interpretation of the data/drafting of the manuscript. DM: study concept and design/critical revision of the manuscript for important intellectual content. MG: analysis and interpretation of the data/drafting of the manuscript. RS: administrative, technical, or material support/study supervision. AP: administrative, technical or material support/study supervision. BB: administrative, technical or material support/study supervision. RP: acquisition of the data. FB: statistical expertise. RS: study concept and design/critical revision of the manuscript for important intellectual content.

Competing interests None.

Patient consent Consent was obtained during telephone interview.

Ethics approval Ethics approval was provided by Health Department staff.

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Annex 1 - Scheme of the triage process

<table>
<tr><th colspan="4">Annex 1: Scheme of the triage process</th></tr>
<tr><td>Age > 85 years</td><td colspan="3">Code automatically: SILVER CODE</td></tr>
<tr><td rowspan="5">Age > 70 years</td><td rowspan="5">If any two of the following criteria are met</td><td>Living alone</td><td rowspan="5">Code: SILVER CODE</td></tr>
<tr><td>Difficulty walking / falls</td></tr>
<tr><td>Hospitalization in the last 30 days</td></tr>
<tr><td>Use of 5 or more medications</td></tr>
<tr><td>Suspected of
- abuse
- noncompliance of medications
- substance abuse
- problems in ADL, IADL</td></tr>
</table>

Annex 2 - New criteria for pediatric triage in Rivoli Hospital

<table>
<tr><th colspan="3">Annex 2: New criteria for pediatric triage in Rivoli Hospital</th></tr>
<tr><td>Evaluation criteria</td><td colspan="2">Possible clinical pathway</td></tr>
<tr><td>Age < 3 years</td><td>Physician accepting</td><td>Pediatrician</td></tr>
<tr><td rowspan="3">Age > 3 years</td><td rowspan="3">Physician accepting</td><td>Pediatrics if experiencing general symptoms</td></tr>
<tr><td>Surgery if wounds or trauma to the abdomen or chest</td></tr>
<tr><td>Orthopedics if non-traumatic osteoarticular pathology or trauma of the limbs</td></tr>
<tr><td></td><td></td><td>Intensivists if a red or yellow code, wounds, or trauma to the abdomen or chest</td></tr>
</table>