"If at Least the Patient Could Not Be Forgotten About": Communication in the Emergency Department as a Predictor of Patient Satisfaction

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Abstract

Press Ganey survey data are used by institutions to understand patient experiences in the emergency department (ED). The present mixed-methods retrospective cohort study examined the effects of hallway placement, pain management reporting, communication approaches, time spent in the ED, and other demographic variables on predicting satisfaction ratings of doctors, nurses, and overall ED care. A total of 4940 patient responses between January 1, 2012, and December 31, 2017, were analyzed from 2 EDs associated with an academic institution and tertiary care center. Consensus coding was used to qualitatively capture patient responses that relate to communication issues pertaining to care/empathy and understandings of ED procedures. After controlling for multiple factors, hallway placement, pain management, and understanding of ED procedures were associated with higher odds of negative ratings for doctors, nurses, and overall assessment. Issues with patient communication, particularly regarding understanding of ED procedures, were found to be a strong predictor of negative ratings of doctors, nurses, and overall care. These findings point to the improvements in communication as a potential point of intervention in mitigating negative patient experiences.

Keywords

patient satisfaction, communication, emergency department

Introduction

Patient experiences in the emergency department (ED) have been a subject of interest for health care facilities due to its influence on patient satisfaction. Additionally, the adoption of the Triple Aim goal in health care has worked to improve patient satisfaction and experience in receiving health services with reducing medical cost (1). This poses a considerable challenge for health care providers in both inpatient and outpatient settings to improve patient outcomes, while maintaining the quality of the patient experience. Among different approaches, survey research has been widely used and adapted to measure patient experiences in the form of satisfaction scores (2).

Studies demonstrate that patients want to be part of the decision-making process (3) while also having their opinions and values taken into consideration when receiving care (4). This is further shown by associations previous studies have identified as factors of negative satisfaction scores, which include language barriers, with non-English speaking patients being less satisfied and therefore less likely to do follow-up care (5); needed communication support between physicians and patients to help bridge uncertainties between both parties to work toward a common goal (6); and hallway

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placement (7), all of which have been attributed with patients having negative experiences. By examining these and other unique parts of the patient experience, EDs can attempt to remove or lessen their influence thus increasing both satisfaction scores and overall patient care.

Despite studies making significant strides in discerning the individual influences of these aforementioned variables, a gap in literature currently exists in understanding how multiple variables interact independently and relatively to each other in predicting satisfaction scores. To the best of our knowledge, there is no other current study that has employed a multivariate analysis toward understanding patient satisfaction in ED settings that has additionally considered communication as an important variable. In this retrospective study, we used data collected through Press Ganey (PG) surveys to conduct a mixed-methods analysis of patient satisfaction responses in order to better understand specific factors that may influence the patient experience in the ED.

Methods

This study was approved by the institutional review board at the University of South Florida and deemed as nonhuman subjects research given that the survey results were retrospectively collected and contained deidentified information. A mixed-methods approach was employed in analyzing the patient satisfaction scores collected from 2 EDs associated with an academic institution located in West Central Florida. Satisfaction scores used in the analysis were collected throughout a 6-year time period (January 1, 2012, to December 31, 2017). The PG surveys were distributed via a physical copy given after a patient's ED visit. Patients had the option of mailing the survey back to the respective hospital through postal mail or completing an online version of the survey.

Surveys consisted of satisfaction measures for 9 categories of patient experience. Responses were coded as being negative, neutral, mixed, or positive. Neutral and mixed responses were omitted from the final analyses due to the ambiguity of interpretation between these types of responses. The analyses undertaken in this study focused exclusively on positive and negative rankings as binary responses, for the survey sections pertaining to assessments of nurses, doctors, and overall ED experience. Available demographic and ED-specific variables included sex (male and female), age, language (English and Spanish), time spent in ED, first time in ED (first time and returning patient), accompaniment (alone and with others), and mode of ED arrival (self and ambulance). Approximately 9% to 15% of responses within each subsection contained missing values in relation to patient's age and/or the time they spent in the ED. Given the size of our data set, the research team took a conservative approach and removed cases with missing values to better control for each variable's potential effect.

Responses in the written comment section for all parts of the survey allowed patients to freely provide open-ended answers to discuss their personal experiences. These quotes were qualitatively coded by the research team using a generalized inductive approach. After looking at each comment, team members (SV, CB, and CC) coded whether patients raised issues regarding: (1) mentions of pain management, (2) hallway placement, or communication issues pertaining to (3) caring and/or empathy, and (4) general understanding of ED procedures (UEDP). The UEDP related to responses by patients in reference to lack of clarity on different aspects of their ED visits such as wait times for evaluation by hospital staff, reasons for why diagnostic tests were being performed, status of overall test results, and so on. Two team members coded and reviewed each comment, followed by a third team member reconciling coding discrepancies until a consensus was reached (8). This method was used because of its utility in reducing reviewer errors and biases by up to 21.7% (9).

Results

Descriptive Statistics

A total of 4940 patients responded to the survey, which was collected between January 1, 2012, and December 31, 2017. Of those, 3239 (72%) met our criteria of having completed at least one of the 3 sections of interest (pertaining to nurses, doctors, and overall ED experience) and rating their experience as either positive or negative. On average, patients filled out either 1 or 2 of the 3 sections with no 1 section filled out by all participants.

The number of patient responses varied by survey section with nurses (n = 1603), doctors (n = 1593), and overall assessment (n = 1529). A majority of participants were English-speaking (97%), female (65.1%), and with a mean age of 53 (standard deviation [SD] = 16.4; Table 1). Of the submitted responses, most came from patients placed in ED rooms (91.6%), most did not mention pain management (90.4%), as well as no communication issues pertaining to caring/empathy from the ED staff (60.9%). Approximately, half of the sample reported comments pertaining to understanding ED processes (51.1%). The median time spent in the ED was 5 hours (SD = 5.07).

Overall, patient responses to the 3 analyzed sections were positive, with nurses having the highest positive response percentage (69%), when compared to doctors (66%) and overall assessment (61%). The negative ratings for nurses, doctors, and overall care were 31%, 34%, and 39%, respectively. Table 1 provides a summary of the descriptive statistics of the study's sample population.

Multivariate Logistic Regression

The multivariate binary logistic regression analysis performed on the patient responses for the nurses, doctors, and overall assessment sections used rankings (positive or

Table 1. Descriptive Statistics of Study Sample.[a]

Variables		Frequency	Percent Total
Sex	Male	1096	33.8
	Female	2111	65.1
	NA	32	1.0
Language	English	3138	96.9
	Spanish	101	3.0
First time in ED	No	1287	39.7
	Yes	1263	39.0
	N/A	689	21.2
Accompanied	Arrived Alone	839	25.9
	Accompanied	1721	53.1
	N/A	679	21.0
Mode of transportation	Ambulance	445	13.7
	Other method	2090	64.5
	N/A	704	21.7
Treatment location	Room	2969	91.6
	Hallway	270	8.3
Pain management	No mention	2928	90.4
	Pain mentioned	311	9.6
Understanding emergency department procedures (UEDP)	No mention	1654	51.1
	mentioned	1585	48.9
Caring/empathy reporting	No mention	1972	60.9
	Mentioned	1269	39.1

Continuous variables	M	SD	Min	Max
Age, years	53.0	16.4	21	95
Time spent in ED, hours	5.0	5.7	0	130

Abbreviations: ED, emergency department; M, male; Max, maximum; Min, minimum; N/A, not available.

[a] Occasionally, variables appeared in 1 section but not in another (eg, caring/empathy issues during nurse encounter but not during doctor or overall). "No mention" refers to patients who did not express those issues during any portion of the survey.

negative) as the dependent variable. The independent variables consisted of age, sex, language, time spent in ED, first time in ED, accompaniment, mode of transportation, treatment location, pain management mention, UEDP, and caring reported. While controlling for the aforementioned variables, findings suggest trends and relationships between variables and patient satisfaction scores.

Table 2 outlines the logistic regression model for patient satisfaction of the overall ED experience. The 3 variables associated with significantly higher odds of reporting negative satisfaction scores were pain management, UEDP, and hallway placement. Mentions of pain management were associated with approximately 7 times higher odds of negative ratings of overall ED experience (adjusted odds ratio [aOR] = 7.43, 95 CI = 3.56-15.48). Responses of UEDP were associated with approximately 14 times higher odds of negative ratings (aOR = 13.9, 95 CI = 10.50-18.40). Hallway placement was associated with about 5 times higher odds of negative ratings of overall ED experience (aOR = 4.89, 95 CI = 2.96-8.05). Perceptions of

caring/empathy were significantly had an inverse relationship with negative patient satisfaction scores (aOR = 0.25, 95 CI = 0.18-0.36). Thus, the odds of patients who noted caring/empathy in their responses reporting a negative experience were slightly lower those who did not mention caring. However, in comparison to other variables, the effect of caring/empathy on negative satisfaction scores is nominal.

Responses pertaining to ratings of nurses (Table 2) appeared to have a similar pattern of findings to those of overall ED experience. Responses that included mentions of pain management were associated with about 5 times higher odds of negative ratings (aOR = 5.60, 95 CI = 2.79-11.20). The UEDP and hallway placement were associated with 18 (aOR = 17.80, 95 CI = 13.1-24.10) and 7 (aOR = 7.14, 95 CI = 4.35-11.70) times higher odds of negative ratings of nurses, respectively. Similar to overall experience scores, caring/empathy concerns had an inverse predictive association with negative patient satisfaction ratings (aOR = 0.32, 95 CI = 0.24-0.44).

Satisfaction ratings of doctors (Table 2) followed a similar pattern to that of overall ED experience and nurses. Pain management was associated with 5 times higher odds of negative satisfaction ratings of doctors (aOR: 5.67, 95 CI = 3.49-9.21). The UEDP was associated with 11 times higher odds of negative doctor ratings (aOR: 11.50, 95 CI = 8.74-15.12). Hallway placement was associated with 3 times higher odds of negative ratings (aOR: 3.08, 95 CI = 1.94-4.89). Consistent with the other 2 reporting sections, caring/empathy had an inverse predictive relationship with negative patient satisfaction ratings (aOR = 0.42, 95 CI = 0.32-0.56).

Qualitative Responses

In total, the written survey responses given by patients were 2267 for overall assessment, 2084 for nurses, and 2160 for doctors. Specific qualitative patient responses (Table 3) were identified as a way of adding descriptive context to the significant findings from our multivariate analyses. These quotes highlight the emotions and areas of concerns from the patient perspective.

Discussion

Multivariate logistic regression modeling of overall assessment, nurses, and doctors suggested significant associations between pain management, UEDP, and hallway placement with negative patient satisfaction scores. In all 3 regression models, UEDP was the single most influential driver of negative patient ratings.

Pain Management Issues

The illustrative quotes of patients discussing pain management appear to point to sentiments of ED staff disregarding

Table 2. Logistic Regression Models.

	Assessment of overall ED experience			Assessment of nurses			Assessment of doctors		
	aOR	95% CI (Lower-upper)	Sig.	aOR	95% CI (Lower-upper)	Sig	aOR	95% CI (Lower-upper)	Sig
Pain management mentioned	7.43	(3.56-15.5)	<0.01	5.6	(2.79-11.2)	<0.01	5.67	(3.49-9.21)	<0.01
Understanding emergency department procedures (UEDP) mentioned	13.9	(10.5-18.4)	<0.01	17.8	(13.1-24.1)	<0.01	11.5	(8.74-15.1)	<0.01
Hallway placement	4.89	(2.96-8.05)	<0.01	7.14	(4.35-11.7)	<0.01	3.08	(1.94-4.89)	<0.01
Care/empathy reporting	0.25	(0.18-0.36)	<0.01	0.32	(0.24-0.44)	<0.01	0.42	(0.32-0.56)	<0.01
N/A accompanied			0.57			0.34			0.48
Accompanied self	1.09	(0.40-2.96)	0.86	1.71	(0.60-4.88)	0.32	1.86	(0.68-5.05)	0.22
Accompanied with other	1.28	(0.48-3.42)	0.62	1.99	(0.70-5.64)	0.2	1.8	(0.67-4.84)	0.25
N/A first time			0.83			0.96			0.45
Been to ED before	1	(0.41-2.44)	1	1.15	(0.43-3.10)	0.78	1.19	(0.47-3.06)	0.72
First time to ED	1.1	(0.45-2.67)	0.84	1.15	(0.43-3.08)	0.78	1.41	(0.55-3.58)	0.47
N/A sex			0.84			0.32			0.62
Male	1.43	(0.35-5.87)	0.62	2.68	(0.62-11.6)	0.19	1.76	(0.31-9.96)	0.52
Female	0.97	(0.74-1.26)	0.8	1.15	(0.85-1.57)	0.36	1.12	(0.85-1.49)	0.42
Spanish speaking	0.8	(0.37-1.75)	0.58	1.08	(0.44-2.63)	0.87	1.05	(0.47-2.35)	0.92
Age, years	0.98	(0.98-0.99)	<0.01	0.99	(0.98-0.99)	<0.01	0.98	(0.97-0.99)	<0.01
N/A mode of transportation			0.3			0.01			0.3
Arrive in ambulance	1.42	(0.60-3.37)	0.43	1.03	(0.38-2.79)	0.95	0.57	(0.20-1.57)	0.27
Arrive by other method	1.05	(0.47-2.37)	0.9	0.54	(0.21-1.41)	0.21	0.49	(0.19-1.30)	0.15
Time spent in ED, hours	1	(1.00-1.00)	0.23	1	(1.00-1.00)	0.19	1	(1.00-1.00)	0.38

Abbreviations: aOR, adjusted odds ratio; ED, emergency department; N/A, not available; Sig, significance.

their pain. This could be due to a multitude of reasons. One study focusing on patient demographics (10) and patient/physician interactions concluded that both of these factors influence patient satisfaction in regard to pain management. The study showed the perceived notion that patients feel as though physicians do not care of their pain as well as physicians assuming that patients exaggerated their reported pain. The focus on demographics was further looked at in another study finding that older ED patients were administered pain medication less than their younger counterparts (11).

In efforts to resolve these issues, EDs can focus on educating their staff on these biases and how they impact the patient's perception not only of the ED but on the actual care received by the patient (12-13). Some of these biases may even be unknown to physicians at times. This could be done using a longitudinal approach which assesses the EDs staff perception of pain requesting before and after the educational intervention, while also assessing patient's perceptions of pain relief.

Hallway Placement

Among the responses that pertained to hallway placement, many included quotes related to issues about being forgotten or ignored by ED staff, delayed time for patients to be seen, and lack of privacy, among others. The association between hallway placement and negative patient satisfaction ratings

is not something new and has been noted in previous studies (14-15). Recommendations include adjustments to boarding location, with one study showing patient boarding preference to be the ED inpatient ward (16). Others include emphasis of caring and empathetic communication styles with patients to ensure that patients to not feel forgotten or as if their issues do not matter (17).

All emotions emphasized by patient responses demonstrate frustrations, which contribute an additional stressor on top of the physical pain experienced. To address this, EDs should consider understanding emotional distress patients experience, as well as find effect ways to convey emotional support (18).

Understanding Process Issues

The impacts of UEDP can also be seen by the qualitative examples. Responses pertaining to overall assessment included patient comments toward confusion of why there were long wait times, team member roles, validation of patient concerns by ED staff, and duration time of the patient seen by the physician, among others. Recommendations include continuous communication between ED staff members and patients, including their family through the time of the visit. Simple tasks, such as staff introducing themselves and being clear when discussing why they are approaching a patient, can create a trusting environment and serve as means to build a positive relationship with the patient throughout

Table 3. Illustrative Quotes From Open-Ended Patient Responses.

Issue mentioned	
UEDP	"I felt like the nurse I had did not feel as though my injury was serious, and generally acted like it was a bother to them that I was even there. They mentioned a couple of times how busy they were with "real traumas." When I questioned about what physician told us regarding some test; after waiting 2 hours for the tests, the nurse became a little condescending & argumentative, with both of us."
Communication, hallway placement, UEDP	"I am a clinician myself - so I understand the importance of having empathy for my patient, I know the ED is a busy place and various team members see one patient—if at least the patient could not be forgotten about or made to feel as if they were forgotten about. This happened to me many times that day."
Communication, hallway Placement, UEDP	"I just put the responsibility on the hospital administrators for not having enough doctors to be able to take care of the demands without so much delay."
Communication, hallway placement, UEDP	"I had been to the ER the week before this visit, and because we waited 4 1/2 hours before getting into the ER and then an additional 3 hours lying on a bed in the hallway, I'm not sure I'd recommend the ED without reservations due to the long wait time."
Pain management, communication, UEDP, caring/empathy	"If triage nurse took me seriously and listened, I would have avoided pain, discomfort & possibly blood lost."
Hallway placement	"Nurses told me they were very busy treating patients who needed it more. Showed me to a bed in the hallway that my daughter had to help me get onto - maybe they could observe me from wherever they were at but they did not come to check on me very often—felt like they were not paying attention."
Communication, UEDP, caring/empathy	"Doctor took short cuts in treatment never look in eyes, mouth, throat check legs or even check my heart rhythm."
Pain management, communication, caring/empathy	"I felt as if I was just a nuisance and that they had more important issues. I was in real pain with a fever and no one seemed to care. Oh yes, the doctor said he was going to confer with his compatriot about the figures my daughter pointed out. He never returned!"
Communication, hallway placement	"He stated I've seen this a million times wrote my prescriptions and sent me home."
Hallway placement, UEDP, caring/empathy	"They were both very nice and both took the time to listen and speak to me to really get to the bottom of my problem."
Pain management	"Both doctors I saw barely spent 2 minutes in the room. They did not express any concern for the amount of pain I was in and looked at me as if I wasn't a person. They also kept asking questions that they should have had access to being that I came there by ambulance from an urgent care center.
Pain management, communication, hallway placement, UEDP, caring/empathy	"After waiting to be seen for 5-6 hours or more, in pain, the nurse was very rude because I told her the muscle relaxer pill she was giving me would not touch my pain, from many similar visits for the same pain syndrome. I have a lot of experience with this! She then snapped at me . . . do you want to be treated or not?! She was very short with me and wanted nothing to do with treating me! Triage: I was the only patient in the waiting room writhing in pain for > 5 hours. Everyone else was sleeping while they waited. I was in the hallway."
Pain management, communication, UEDP	"As I had been in the ER in November 2016 for back pain, everyone seemed to assume it was the same condition. It was not. The pain was on my lower right side wrapping around towards my belly (thus the concern for appendicitis)."

Abbreviations: ED, emergency department; ER, emergency room; UEDP, understanding of ED procedure.

their ED stay (19). With one study that noticed significant differences in increased satisfaction scores when physicians smiled, made eye contact, and acknowledged long wait times (20), this could be facilitated using navigators (21) who explain processes as staff continuously checkup on patients and families. Other work regarding physician–patient communication has demonstrated high overall satisfaction among patients who reported their physician actively listening and considering their input toward their care (22). Patients can be allowed to take an active role in their care planning through being given information on the risks and benefits of each treatment option in ways that avoid misunderstandings and help mitigate feelings of being ignored or that their issues are not being addressed (23).

As seen, most patient comments include multiple factors that lead to negative satisfaction ratings. Although previous recommendations could all serve as mitigators for patient issues, our analysis revealed UEDP to be the most influential indicator of negative ratings of nurses, physicians, and overall assessment. This finding points to the importance of communication regarding patient care throughout the ED encounter and follow-up care after discharge.

Limitations

This multivariate analysis of PG survey responses is useful to better understand how patients experience receiving ED care, but further research is needed. While this study incorporated numerous response domains (nurses, doctors, overall experience) to assess the reliability of variables to response outcomes, retrospective approaches may exhibit recall or misclassification biases. Future studies would benefit from adopting a time-series design of patient treatment experiences in the ED.

Additionally, future research would benefit from controlling for other potentially confounding variables. For instance, the location of the EDs discussed in this analysis includes a population that is of a diverse community with 29.3% of the population identifying as Hispanic or Latino and 17.8% identifying as Black or African American. The current collection of data came from predominantly English-speaking women, showing an over-representation of a certain group of individuals. Including racial or ethnic demographic data for survey responses can help researchers better understand what different patient populations find most important and influential toward their experience in ED settings.

Conclusion

The findings from this retrospective mixed-methods study suggest pain management, UEDP, and hallway placement as key drivers of higher odds of negative patient experiences while receiving care in the ED. Multivariate logistic regression modeling indicated UEDP as a strong predictor of negative satisfaction ratings of nurses, doctors, and overall assessment. These findings point to a variety of interventions which can be used to tackle the issues commented by patients which include ED staff education, adjustment for boarding patients, and frequent communication with patients throughout the course of their ED visit. Continued research is needed with a prospective approach and multivariable analyses, while also focusing on collecting surveys from a diverse group of patients.

Declaration of Conflicting Interests

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Supplemental Material

Supplemental material for this article is available online.

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