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Factors Influencing Patient Experience and Satisfaction After Emergency Abdominal Surgeries in Saudi Arabia --Manuscript Draft--

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Abstract:	<p>Objective: Patient satisfaction significantly influences healthcare outcomes, including compliance and loyalty, particularly in competitive private healthcare markets. While extensively studied in chronic care, patient satisfaction in emergency abdominal surgeries remains underexplored. This study investigates factors influencing patient experience and satisfaction following emergency abdominal procedures and identifying key influencing factors.</p> <p>Methods: A prospective observational study was conducted on adult patients who underwent emergency abdominal surgeries at Dr. Sulaiman Al-Habib, Al-Suwaidi Hospital. Data were collected within seven days post-discharge using validated Patient-Reported Experience Measures (PREMs). Statistical analysis included the Mann-Whitney U test and multivariable linear regression.</p> <p>Results: Among 102 patients, higher satisfaction was associated with pain control, sufficient information, effective communication, assistance at mealtimes, adequate nurse staffing, and confidence in nursing care. Multivariable analysis indicated that lack of threatening behavior ($B = 1.33$, $p = 0.001$), emotional support from staff ($B = 1.36$, $p = 0.002$), and timely responses to questions by nurses ($B = 1.32$, $p = 0.002$) were independently linked to higher satisfaction.</p> <p>Conclusions: Effective pain management, empathetic care, and timely communication are pivotal to enhancing satisfaction in emergency surgeries. Future research should validate these findings and refine strategies for improving patient experience.</p>

Table 2. (Continue): Patient experience after an emergency abdominal surgery (n=102)

Domain	Items	Never		Sometimes		At all times	
		No	%	No	%	No	%
Information and involvement in treatment	Important questions answered by doctors	3	2.9%	5	4.9%	94	92.2%
	Important questions answered by nurses	2	2.0%	16	15.7%	84	82.4%
	Involvement in decisions about treatment	3	2.9%	12	11.8%	87	85.3%
	Confidence in decisions made about treatment	3	2.9%	9	8.8%	90	88.2%
	Sufficient information given about treatment	2	2.0%	9	8.8%	91	89.2%
	Sufficient explanation of risks and benefits of surgery	6	5.9%	5	4.9%	91	89.2%
	Sufficient explanation of operation details	2	2.0%	8	7.8%	92	90.2%
	Questions answered about surgery	3	2.9%	7	6.9%	92	90.2%
	Sufficient pre-op explanation of what to expect post-operation	8	7.8%	7	6.9%	87	85.3%
	Sufficient explanation from anesthetists	5	4.9%	9	8.8%	88	86.3%
	Sufficient post-op explanation of operation findings	11	10.8%	5	4.9%	86	84.3%
Discharge Process	Involvement in discharge decision-making	18	17.6%	8	7.8%	76	74.5%
	Sufficient notice prior to discharge	4	3.9%	6	5.9%	92	90.2%

	Discharge not delayed	0	0.0%	10	9.8%	92	90.2%
	Provision of written information	20	19.6%	6	5.9%	76	74.5%
	Explanation of purpose of discharge medication	4	3.9%	2	2.0%	96	94.1%
	Explanation how to take discharge medication	3	2.9%	3	2.9%	96	94.1%
	Warning of danger signals to look out for at home	27	26.5%	7	6.9%	68	66.7%
	Consideration of family situation in planning discharge	11	10.8%	7	6.9%	84	82.4%
	Sufficient information given to family	12	11.8%	4	3.9%	86	84.3%
	Information given for who to contact if concerned	22	21.6%	5	4.9%	75	73.5%
	Discharged with required equipment/ home adaptations	18	17.6%	6	5.9%	78	76.5%
	Discharged with all required community/ social care	15	14.7%	6	5.9%	81	79.4%
Overall	Treated with dignity	0	0.0%	2	2.0%	100	98.0%
Experience	Felt well looked after in hospital	3	2.9%	6	5.9%	93	91.2%

Tables

Table 1. Patient experience after an emergency abdominal surgery (n=102)

Domain	Items	Never		Sometimes		At all times	
		No	%	No	%	No	%
Admission	Sufficient information in ED	2	2.0%	16	15.7%	84	82.4%
	Sufficient privacy in the ED	3	2.9%	10	9.8%	89	87.3%
	Did not experience a long wait for bed in ward	5	4.9%	16	15.7%	81	79.4%
Ward environment	No night-time noise from other patients	2	2.0%	15	14.7%	85	83.3%
	No night-time noise from staff	0	0.0%	17	16.7%	85	83.3%
	High levels of ward cleanliness	7	6.9%	7	6.9%	88	86.3%
	No threatening behavior from other patients or visitors	0	0.0%	3	2.9%	99	97.1%
	High satisfaction with the food	11	10.8%	31	30.4%	60	58.8%
	Sufficient help at mealtimes	12	11.8%	22	21.6%	68	66.7%
	Enough nurses on the ward	9	8.8%	18	17.6%	75	73.5%
	Sufficient privacy for clinical discussions	8	7.8%	3	2.9%	91	89.2%
	Sufficient privacy for examination and treatment	4	3.9%	6	5.9%	92	90.2%
	Confidence and trust in doctors responsible for care	2	2.0%	9	8.8%	91	89.2%

Patients-staff interaction	Satisfaction with level of seniority of medical staff	2	2.0%	15	14.7%	85	83.3%
	Did not experience doctors talking in front of patients as if not present	4	3.9%	7	6.9%	91	89.2%
	Confidence and trust in nurses	4	3.9%	20	19.6%	78	76.5%
	Did not experience nurses talking in front of patients as if not present	6	5.9%	12	11.8%	84	82.4%
	Staff to talk to about worries and fears	14	13.7%	15	14.7%	73	71.6%
	Sufficient emotional support from staff	9	8.8%	19	18.6%	74	72.5%
	No pain	0	0.0%	49	48.0%	53	52.0%
	Sufficient pain control from staff	6	5.9%	20	19.6%	76	74.5%

ED, emergency department.

Table 3. Analysis of the association between individual patient-reported experience measures and overall patient-reported satisfaction, and multivariate linear regression of significant variables

Items	Overall satisfaction				p-value [#]	B	95% CI	p-value
	At all times		Sometimes/never					
	Mean	SD	Mean	SD				
Sufficient information in ED	9.02	1.22	7.44	2.01	.024*			
Sufficient privacy in the ED	8.89	1.45	7.77	1.59	.059			
Did not experience a long wait for bed in ward	8.91	1.32	8.10	2.00	.682			
No night-time noise from other patients	8.80	1.48	8.47	1.66	.663			
No night-time noise from staff	8.89	1.39	8.00	1.87	.628			
High levels of ward cleanliness	8.94	1.32	7.50	2.03	.075			
No threatening behavior from other patients or visitors	8.81	1.44	6.67	2.52	.002*	1.33	(0.78-3.14)	.001*
High satisfaction with the food	9.13	1.17	8.19	1.76	.069			

Sufficient help at mealtimes	9.22	1.09	7.79	1.77	.001*	1.78	(0.88-3.47)	.001*
Enough nurses on the ward	9.07	1.23	7.85	1.83	.003*	1.52	(0.36-2.87)	.002*
Sufficient privacy for clinical discussions	8.89	1.39	7.55	1.97	.063			
Sufficient privacy for examination and treatment	8.87	1.44	7.60	1.71	.074			
Confidence and trust in doctors responsible for care	8.93	1.39	7.18	1.60	.096			
Satisfaction with level of seniority of medical staff	9.05	1.18	7.24	2.02	.003*	1.65	(0.42-2.69)	0.002*
Did not experience doctors talking in front of patients as if not present	8.91	1.29	7.36	2.38	.051			
Confidence and trust in nurses	9.12	1.18	7.54	1.82	.005*	1.29	(0.29-2.87)	.003*
Did not experience nurses talking in front of patients as if not present	9.05	1.32	7.33	1.57	.001*	1.39	(0.58-2.68)	.001*
Staff to talk to about worries and fears	9.04	1.37	8.00	1.60	.074			
Sufficient emotional support from staff	9.20	1.06	7.54	1.84	.002*	1.36	(0.45-2.22)	.002*

No pain	8.64	1.59	8.86	1.41	.634			
Sufficient pain control from staff	9.11	1.16	7.69	1.89	.005*	1.24	(0.25-3.24)	.003*
Important questions answered by doctors	8.88	1.47	7.13	.83	.052			
Important questions answered by nurses	9.00	1.36	7.56	1.62	.004*	1.32	(0.54-3.12)	.002*
Involvement in decisions about treatment	8.97	1.36	7.47	1.73	.064			
Confidence in decisions made about treatment	8.93	1.40	7.33	1.56	.056			
Sufficient information given about treatment	8.98	1.34	6.82	1.47	.002*	1.39	(0.36-2.98)	.001*
Sufficient explanation of risks and benefits of surgery	8.92	1.40	7.27	1.62	.067			
Sufficient explanation of operation details	8.92	1.41	7.10	1.45	.077			
Questions answered about surgery	8.90	1.41	7.30	1.70	.096			
Sufficient pre-op explanation of what to expect post-op	8.91	1.42	7.80	1.70	.114			

Sufficient explanation from anesthetists	8.91	1.45	7.71	1.49	.099			
Sufficient post-op explanation of operation findings	8.98	1.41	7.50	1.41	.085			
Involvement in discharge decision-making	8.91	1.39	8.27	1.76	.714			
Sufficient notice prior to discharge	8.92	1.29	7.10	2.33	.054			
Discharge not delayed	8.86	1.33	7.70	2.50	.065			
Provision of written information	9.13	1.18	7.62	1.79	.705			
Explanation of purpose of discharge medication	8.79	1.47	8.00	2.00	.663			
Explanation how to take discharge medication	8.79	1.47	8.00	2.00	.698			
Warning of danger signals to look out for at home	8.99	1.38	8.26	1.66	.687			
Consideration of family situation in planning discharge	8.92	1.42	7.94	1.70	.432			
Sufficient information given to family	8.87	1.40	8.06	1.91	.715			

Information given for whom to contact if concerned	8.88	1.41	8.37	1.71	.778			
Discharged with required equipment/ home adaptations	8.88	1.27	8.29	2.07	.706			
Discharged with all required community/ social care	8.83	1.45	8.43	1.72	.772			
Treated with dignity	8.83	1.39	4.50	.71	<.001*			
Felt well-looked after in hospital	9.04	1.12	5.67	1.58	<.001*			

Patient-reported satisfaction data are mean overall satisfaction score out of 10.

#: Mann-Whitney test. * $P < 0.05$ (significant)

B, adjusted regression coefficient; CI, Confidence interval; ED, emergency department; SD, standard deviation.

Factors Influencing Patient Experience and Satisfaction After Emergency Abdominal Surgeries in Saudi Arabia

Abstract:

Objective: Patient satisfaction significantly influences healthcare outcomes, including compliance and loyalty, particularly in competitive private healthcare markets. While extensively studied in chronic care, patient satisfaction in emergency abdominal surgeries remains underexplored. This study investigates factors influencing patient experience and satisfaction following emergency abdominal procedures and identifying key influencing factors.

Methods: A prospective observational study was conducted on adult patients who underwent emergency abdominal surgeries at Dr. Sulaiman Al-Habib, Al-Suwaidi Hospital. Data were collected within seven days post-discharge using validated Patient-Reported Experience Measures (PREMs). Statistical analysis included the Mann-Whitney U test and multivariable linear regression.

Results: Among 102 patients, higher satisfaction was associated with pain control, sufficient information, effective communication, assistance at mealtimes, adequate nurse staffing, and confidence in nursing care. Multivariable analysis indicated that lack of threatening behavior ($B = 1.33$, $p = 0.001$), emotional support from staff ($B = 1.36$, $p = 0.002$), and timely responses to questions by nurses ($B = 1.32$, $p = 0.002$) were independently linked to higher satisfaction.

Conclusions: Effective pain management, empathetic care, and timely communication are pivotal to enhancing satisfaction in emergency surgeries. Future research should validate these findings and refine strategies for improving patient experience.

Keywords: Patient experience, Emergency abdominal surgery, Patient satisfaction, PREMs, Healthcare quality.

Introduction

Patient perceptions and satisfaction are strongly associated with improved medical compliance, decreased utilization of medical services, fewer malpractice claims, and greater willingness to return to the health care provider.^{1,2}

Furthermore, positive patient experiences have consistently been linked to clinical efficacy and patient safety across various disease domains.³ As a result, patient-reported experience measures (PREMs) have been established to evaluate patients' experiences, aiding in the development of strategies to improve healthcare quality.⁴ However, up to this point, PREM working has primarily either addressed generic or focused on chronic healthcare issues.^{5,6} Unfortunately, to our knowledge, only few studies have assessed the perception and satisfaction of patients after emergency abdominal surgeries.^{7,8}

Perception and satisfaction of patients in such a difficult situation must be addressed and resolved to improve patient outcomes since most patients present with pain and anxiety, and their time within the hospital might be difficult due to unplanned admission and waiting periods. Certainly, the satisfaction of patients with their experience in the emergency department (ED) is an important outcome measure that reflects the quality of care provided. Researchers and healthcare professionals have identified several predictive variables that can influence satisfaction in this setting, including factors such as pain control, information provided, interpersonal interactions, and perceived waiting time.^{9,10,11} Understanding and addressing these predictive variables can help healthcare organizations improve patient satisfaction and enhance the overall ED experience for individuals seeking urgent medical care.

The aim of this study was to investigate the correlation between the experience and satisfaction of patients who underwent an emergency abdominal procedure in the

general surgery department as well as to identify variables that can influence patient satisfaction.

Methods

Study design

This prospective observational study evaluated patient perceptions and satisfaction following emergency abdominal surgeries. Data were collected using validated Patient-Reported Experience Measures (PREMS) questionnaires adapted from previously published research⁷. The questionnaire had 47 questions covering the admission process, ward environment, patient–staff interaction, pain management, information and involvement in treatment, discharge process, and overall experience. The first 46 questions utilized a three-point Likert scale, where participants indicated whether they experienced a particular variable "at all times" (1), "sometimes" (2), or "not at all" (3). The final question asked participants to rate their overall satisfaction from admission to discharge on a scale of 0 (worst) to 10 (best).

Data collection

Patients aged >18 years who underwent an emergency abdominal procedure in the General Surgery Department at Dr. Sulaiman Al-Habib, Al-Suwaidi Hospital were included. Patients received the questionnaire and data were collected within seven days post-discharge, either in person upon discharge or via social media applications (e.g., WhatsApp) for those who had already left the hospital. Ethical approval was granted from the Standing Committee of Bioethics Research (SCBR) (No: 179/2023). Written consent was obtained from each patient.

Sample size

During the four-week study period, 138 emergency abdominal procedures were performed. Using a 95% confidence level and a 5% margin of error, the ideal sample size was determined to be 102 patients, ensuring adequate power to detect statistically significant associations between patient experiences and satisfaction.

Data analysis

Following data extraction, the data were revised, coded, and entered into SPSS version 22 (SPSS, Inc. Chicago, IL, USA). All statistical analyses were performed using two-tailed tests. A P-value less than 0.05 was considered statistically significant. Questions were structured using a three-point Likert scale, with participants being asked if they had experienced a particular variable at all times (1), sometimes (2), or not at all (3). All negative statements had a reversed score. Responses were categorized into "at all times (1)" and "sometimes/never (2 and 3)". Descriptive analysis based on frequency and percent distribution was conducted for all variables including the time experience variable. The satisfaction level was defined as "not satisfied", "in-between", and "satisfied" based on the satisfaction score of 1–3, 4–6, and 7–10, respectively, and the overall satisfaction level was plotted. The relation between experiencing a situation at all times and the mean overall satisfaction score was assessed using the Mann–Whitney U test. Multivariable linear regression models were built using a stepwise approach by selecting the most significant factors associated with satisfaction in univariate analysis. Model fit was assessed using likelihood ratio tests/Akaike information criteria. No first-order interactions were identified, and appropriate model diagnostics were checked, including

outliers/influential observations, normality of residuals, and heteroscedasticity. Data are presented as means with standard deviations for comparison.

Results

A total of 102 eligible patients underwent emergency abdominal procedures in the general surgery department. Tables 1 and 2 show the experience of patients after the procedures. All satisfaction scores are based on comparisons between participants who experienced each item "at all times" versus "sometimes" or "never."

Admission

Privacy in the ED and shorter waiting times for a bed in the ward were linked to higher satisfaction levels among patients. Providing sufficient information in the ED was significantly correlated with a higher overall satisfaction score (9.02 ± 1.22 for "at all times" vs 7.44 ± 2.01 for "sometimes/never", $p=0.024$) (Table 3).

Ward environment

Although not statistically significant, factors like ward cleanliness and reduced nighttime noise were associated with higher satisfaction. In contrast, sufficient help at mealtimes (9.22 ± 1.09 vs. 7.79 ± 1.77 , $p=0.001$) and the presence of enough nurses in the ward (9.07 ± 1.23 vs. 7.85 ± 1.83 , $p=0.003$) were significantly associated with higher satisfaction levels. However, sufficient privacy for clinical discussions, as well as for examination and treatment, did not show significant associations with increased satisfaction (Table 3).

Patient–staff interaction

Confidence and trust in healthcare providers were key factors influencing patient satisfaction. Trust in nurses significantly associated with a higher satisfaction level (9.12 ± 1.18 vs. 7.54 ± 1.82 , $p=0.005$), whereas trust in doctors showed a positive trend but did not reach statistical significance (8.93 ± 1.39 vs. 7.18 ± 1.60 , $p=0.096$). Satisfaction with the seniority level of medical staff (9.05 ± 1.18 vs 7.24 ± 2.02 , $p=0.003$) was also significantly linked to higher satisfaction. Not experiencing doctors or nurses talking in front of patients as if they were not present was associated with a higher satisfaction level, with a significant finding for nurses (9.05 ± 1.32 vs. 7.33 ± 1.52 , $p=0.001$). The availability of staff to discuss concerns and provide emotional support was another critical factor; while the availability to address worries and fears trended toward significance (9.04 ± 1.37 vs 8.00 ± 1.60 , $p=0.074$), providing sufficient emotional support significantly enhanced satisfaction (9.20 ± 1.06 vs 7.54 ± 1.84 , $p=0.002$). Patients who felt well cared for in the hospital (9.04 ± 1.12 vs. 5.67 ± 1.58 , $p<0.001$) and treated with dignity (8.83 ± 1.39 vs. 4.50 ± 0.71 , $p<0.001$) were significantly more satisfied with their overall experience (Table 3).

Pain management

Pain management was another significant factor; adequate pain control correlated with significantly higher satisfaction scores (9.11 ± 1.16 vs. 7.69 ± 1.89 , $p=0.005$), although the experience of being completely pain-free was not found to significantly affect the overall satisfaction (Table 3).

Information and involvement with treatment

Addressing patients' important questions was linked to higher satisfaction levels, with nurse responses showing a particularly significant effect on overall satisfaction (9.00 ± 1.36 vs 7.56 ± 1.62 , $p=0.004$).

Providing sufficient information about treatment was also significantly associated with greater satisfaction (8.98 ± 1.34 vs 6.82 ± 1.47 , $p=0.002$). However, other aspects, such as involving patients in treatment decisions, instilling confidence in those decisions, and providing detailed explanations of procedure risks, benefits, and postoperative expectations, did not demonstrate statistical significance in this study (Table 3).

Discharge process

During the discharge process, various factors were analyzed to determine their association with patient satisfaction. Sufficient notice prior to discharge (8.92 ± 1.29 vs. 7.10 ± 2.33 , $p=0.054$), discharge without delay (8.86 ± 1.33 vs. 7.70 ± 2.50 , $p=0.065$), provision of written discharge information (9.13 ± 1.18 vs. 7.62 ± 1.79 , $p=0.705$), explanation of the purpose of discharge medication (8.79 ± 1.47 vs. 8.00 ± 2.00 , $p=0.663$), explanation on how to take the discharge medication (8.79 ± 1.47 vs. 8.00 ± 2.00 , $p=0.698$), warning of danger signals to look out for at home (8.99 ± 1.38 vs. 8.26 ± 1.66 , $p=0.687$), consideration of family situations in planning discharge (8.92 ± 1.42 vs. 7.94 ± 1.70 , $p=0.432$), sufficient information given to the family (8.87 ± 1.40 vs. 8.06 ± 1.91 , $p=0.715$), and information on whom to contact if concerned (8.88 ± 1.41 vs. 8.37 ± 1.71 , $p=0.778$) were associated with a higher satisfaction score (Table 3). While none of these factors showed statistical significance, they highlight areas for potential improvement in the discharge process to enhance patient satisfaction.

Multivariable analysis

The multivariable analysis identified key factors independently associated with higher patient satisfaction while accounting for the influence of other variables. The final model, which had a strong fit ($R^2 = 0.77$), highlighted several factors that significantly impacted satisfaction scores (Table 3). Lack of threatening behavior from other patients or visitors showed a notable improvement in satisfaction, with an increase of $B = 1.33$ points in their overall satisfaction score ($p = 0.001$). Sufficient emotional support from staff had a similarly strong effect, increasing satisfaction by $B = 1.36$ points ($p = 0.002$). Nurses' answering patients' important questions significantly boosted satisfaction, increasing scores by $B = 1.32$ points ($p = 0.002$). Other factors that were independently associated with higher satisfaction included: Sufficient help at mealtimes ($B = 1.78$), enough nurses in the ward ($B = 1.52$), satisfaction with the level of seniority of medical staff ($B = 1.65$), confidence and trust in nurses ($B = 1.29$), not experiencing nurses talking in front of patients as if not present ($B = 1.39$), sufficient emotional support from staff ($B = 1.36$), sufficient pain control from staff ($B = 1.24$), important questions answered by nurses ($B = 1.32$), and sufficient information given about treatment ($B = 1.39$) were all associated with a higher satisfaction score while keeping all other factors constant.

Discussion

This study provides important insights into factors influencing patient satisfaction following emergency abdominal surgeries. The findings underscore the complex nature of patient satisfaction, which involves aspects related to the admission process, ward environment, pain control, interactions between patients and staff, the provision of information and involvement in treatment, as well as the discharge process.

Numerous studies¹²⁻¹⁵ have evaluated patient-reported outcomes in emergency general surgery. However, to our knowledge, only four studies^{7,8,9,16} included multivariate analyses or attempted to identify factors linked to higher satisfaction. Similar identified factors are discussed in the following section.

Admission and ward environment

The study underscores the importance of the initial admission process and ward environment in shaping patient satisfaction. Key factors such as providing sufficient information, ensuring privacy in the emergency department (ED), and minimizing waiting times for a bed were positively associated with satisfaction. However, among these, only the provision of adequate information in the ED showed a statistically significant correlation with overall satisfaction. This finding is consistent with other research⁸, which also identified privacy as a significant contributor to patient satisfaction.

Interestingly, neither this study nor previous ones^{7,8} found a strong association between shorter waiting times for ward admission and satisfaction. This suggests that ensuring sufficient information and privacy in the ED is to be prioritized over providing faster admission.

Regarding the ward environment, we found that sufficient help at mealtimes and having enough nurses in the ward were significantly associated with higher overall satisfaction. The significant association between having enough nurses in the ward and overall satisfaction was also observed in a previous study,⁸ where having enough nurses in the ward was the only significant factor related to the ward environment. However, Jones et al. reported several ward environment factors associated with significantly higher overall satisfaction, including no nighttime noise from staff, a high

level of ward cleanliness, sufficient privacy for clinical discussions, as well as sufficient privacy for examination and treatment. However, none of these factors were significant in our study or the previously published study.⁸

Patient–staff interaction

Interactions between patients and healthcare staff emerge as a critical determinant of satisfaction. We identified several factors significantly associated with higher overall satisfaction, which were also observed in other studies,⁷⁻⁹ including confidence and trust in nurses, sufficient emotional support from staff, and sufficient pain control from staff. Additionally, we found that patients who did not experience nurses talking in front of them as if they were not present were significantly more satisfied, although this significance was not supported by any other study. While this study focused on patient-reported experiences, future research should explore the impact of engaging companions through structured updates as communication with patient companions is essential in reducing anxiety and improving satisfaction, especially in emergency settings¹⁷.

Pain management

Pain management plays a critical role in shaping patient satisfaction, yet its dynamics can be complex. While effective pain control is consistently associated with higher satisfaction levels across studies^{7,8,9}, the actual experience of being pain-free does not always correlate with increased satisfaction. This suggests that patients value the perception that healthcare providers are making every effort to manage their pain, which reinforces the importance of empathy, clear communication, and attentive care.

Studies have shown that patients are 4.86 times more likely to be satisfied if pain is effectively controlled and 9.92 times more likely if they feel the staff's attempts to manage pain are adequate¹⁸.

Interestingly, patients with higher pain intensity scores may still report satisfaction with pain management if they perceive the efforts of healthcare staff as sufficient, underscoring the impact of perceived effort over outcome¹⁹.

Nursing interventions, a cornerstone of effective pain control, further tie into patient satisfaction by addressing related factors such as communication and emotional support²⁰. Daily rounds that emphasize open dialogue-such as explaining the realistic goals of pain management and inviting feedback on medication efficacy-help foster trust and ensure that patients feel their concerns are addressed. These strategies align with evidence that satisfaction stems not just from clinical outcomes but from the perception of being cared for and heard.

Information and involvement with treatment

Important questions answered by doctors and nurses have been shown to be significantly associated with higher overall satisfaction in previous studies.^{7,8} However, in our study, only nurses answering important questions was significantly associated with higher overall satisfaction. Sufficient information given about treatment was another factor significantly associated with higher overall satisfaction, corroborated by other studies.^{7,8} Jones et al. and Kinnear et al. reported significant associations of involvement in decisions about treatment, confidence in decisions made about treatment, sufficient explanation of risks and benefits of surgery, sufficient explanation of operation details, sufficient pre-operative explanation of what to expect post-operatively, and sufficient post-operative explanation of surgical findings with overall

satisfaction. However, none of these factors were significant in our study. Studies using different questionnaires also noted that patient satisfaction was associated with listening by nurses and doctors, respect from doctors, as well as shared decision-making, and inversely correlated with the level of education of patients.^{9,16}

Discharge process

The discharge process is a critical transition period for patients, during which several factors were identified to be associated with satisfaction in this study. Sufficient notice prior to discharge and timely provision of discharge information were positively correlated with patient satisfaction. However, these factors did not achieve statistical significance, indicating the need for further research to explore their impact more comprehensively. On the other hand, being treated with dignity and feeling well looked after in the hospital were significantly associated with higher overall satisfaction. These findings align with those of other studies.^{7,8}

While this study provides valuable insights, it is not without limitations. The single-center design and relatively small sample size may limit the generalizability of the findings. Additionally, this study did not systematically evaluate certain factors, such as family communication and updating about the patient's condition, which may have provided a more comprehensive understanding of patient experiences. Future research should involve larger, multicenter studies to validate these findings and explore the impact of targeted interventions, such as staff training programs and enhanced communication protocols, on improving patient satisfaction.

Conclusion

This study identifies key factors influencing patient satisfaction following emergency abdominal surgeries, emphasizing the importance of pain management, communication, emotional support, and nursing care. Effective pain control was a critical determinant of satisfaction, yet the perception that healthcare providers made every effort to address patient discomfort played an equally significant role. This underscores the value of empathy, clear communication, and attentiveness in fostering trust and ensuring a positive patient experience.

Additional determinants of satisfaction included sufficient information and privacy in the emergency department, adequate nursing care, and personalized support, such as assistance at mealtimes. Confidence and trust in healthcare providers, particularly nurses, further contributed to higher satisfaction, highlighting their pivotal role in addressing patients' emotional and clinical needs.

While some factors did not achieve statistical significance, the observed trends underscore opportunities for healthcare providers to enhance patient satisfaction through a compassionate and patient-centered approach. Focusing on clear communication, realistic pain management goals, and proactive support can improve both clinical outcomes and patient loyalty.

Future research with larger, more diverse populations is needed to validate these findings and explore additional strategies to optimize the quality of care in emergency surgical settings. By addressing these key areas, healthcare providers can enhance the overall patient experience and build stronger patient-provider relationships.

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We sincerely thank the reviewers for their thorough evaluation and constructive feedback, which has greatly enhanced the quality of our manuscript.

Below, we addressed each comment, outlining the changes made in the revised manuscript. All modifications have been highlighted in the revised version for clarity.

Title Page

Reviewer # 1: Needs major revisions.

Response: The title page has been revised to ensure it meets the journal's guidelines and accurately reflects the content of the manuscript. Specifically, we have clarified the title, authorship details, and institutional affiliations.

Abstract

Reviewer # 1: Needs revision.

Response: The abstract has been updated to provide a clearer summary of the study's objectives, methodology, results, and conclusions. Additional details regarding key findings, including pain management satisfaction and communication with patient companions, have been incorporated.

Keywords

Reviewer # 1: OK.

Response: No changes were made

Introduction

Reviewer # 1: OK.

Response: No changes were made

Materials and Methods

Reviewer # 1: Needs revision.

Response: The materials and methods section has been revised, with adding new section for sample size

Results (including Data Analysis & Statistical Analysis, Ethics Committee approval)

Reviewer # 1: Needs revision.

Response: The Results section has been revised

Discussion

Reviewer # 1: Needs revisions.

Response: The Discussion section has been thoroughly revised to address the major factors you highlighted:

Pain management: We have added a new section regarding the pain management

References

Reviewer # 1: OK.

Response: No changes were made

Tables

Reviewer # 1: OK.

Response: No changes were made

Illustrations

Reviewer # 1: OK.

Response: No changes were made

Conformity with Instructions for Authors

Reviewer # 1: OK.

Response: The manuscript has been reviewed to ensure full conformity with the journal's Instructions for Authors.

Reviewer #1: There are major factors for patients satisfaction which were not covered ,These factors are important for future plans to improve care for a Private hospital in such a competitive health market.

- 1- Pain management satisfaction was only 50% ? what was the recommendation to improve this ? nothing was mentioned in this paper about this point
- 2-Communication with patient companion ,no data about this factor
- 3- Communication at least two times daily updating the patients family by phone,nothing was mentioned about this factors effect ?

Response:

1. We have added statements across the abstract, results, and discussion to emphasize pain management and included recommendations to address this factor.
2. We recognize the importance of engaging patient companions. A statement has been added to the discussion emphasizing this and proposing future research to explore its impact.
3. Although this factor was not analyzed, we have acknowledged it as a limitation in the discussion and recommended its inclusion in future studies.

Factors Influencing Patient Experience and Satisfaction
After Emergency Abdominal Surgeries in Saudi Arabia

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Disclaimers:

None.

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None

Running title: Patient Experience After Emergency Abdominal Surgery