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Original Article

IMPACT OF PERIOPERATIVE QUALITY-INTERACTION ON PATIENT SATISFACTION UNDERGOING LAPAROSCOPIC CHOLECYSTECTOMY

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Background: Patient satisfaction is a crucial indicator of healthcare quality that influences patients' outcomes and healthcare facility performance. In surgical context, where anxiety prevails, the perioperative patient-healthcare worker (HCW) interaction matters a lot. This study aimed to assess the association between perioperative quality-interactions and overall patient satisfaction among patient's undergoing cholecystectomy at Qazi Hussain Ahmad Medical Complex (QHAMC), Nowshera. **Methods:** A cross-sectional study was conducted in Department of Surgery, QHAMC, Nowshera from July to October, 2024. Through consecutively sampling technique, a total of 102 patients were asked questions based on modified Clinician and Group-Consumer Assessment of Health care Providers and Systems, Adult Visit Survey. The data was analysed using SPSS-22 with Mann-Whitney U test and Kruskal-Wallis H test. $p<0.05$ was considered statistical significance. **Results:** A total of 102 patients with mean age of 44.0±11.84 years among which 33 (32.4%) male were included. Majority of patients rated their overall health as excellent 38 (37.3%). Mann-Whitney U tests indicated statistically significant difference between HCWs encounters with patient ($p<0.05$). The Kruskal Wallis test revealed significant difference of age group and employment status with overall health rating, and frequency of patient encounter with HCW, whereas, behaviour of HCW with employment status only ($p<0.05$). **Conclusion:** This relationship between perioperative quality-interaction and patient satisfaction undergoing laparoscopic cholecystectomy is significant. While pre and intra operative communication excels, postoperative follow-up and HCWs soft skills require refinement. By addressing demographic disparities and systemic gaps, our setups can align its practices with global patient-cantered care standards.

Keywords: perioperative; quality-interaction; patient satisfaction; surgery

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INTRODUCTION

Patient satisfaction is an essential indicator of healthcare quality influencing clinical outcomes, patient compliance and healthcare facility performance.[1] In surgical contests, where anxiety and uncertainty are heightened, the quality of interactions between patients and surgical teams becomes critical.[2] The interactions is any sort of contact or communication between patient and healthcare workers (HCW). The perioperative period: spinning pre, intra and post-operative phases, presents distinct opportunities for interactions that can alleviate patient concerns, build trust and shape perceptions of overall care.[3]

Laparoscopic cholecystectomy is one of the most common general surgical procedures worldwide and carries specific interventions challenged, from explaining the indication and procedure to managing postoperative expectations.[4] Current research has mostly not addressed the fine-grained study of preoperative interactions, leaving a gap in understanding their specific effect on patient overall satisfaction with health.[1,5] Such a gap is especially prominent in environments such as Pakistan, where patients tend to delay presenting to care due to societal stigmatization, ignorance, and culture.[6] Such delays not only deteriorate clinical states but also disrupt patient-provider communication dynamics, necessitating investigating how customized preoperative interactions may enhance patient perceptions.

This study aims to bridge these gaps by assessing the association between perioperative interactions quality and overall patient satisfaction scores among the patient's undergoing cholecystectomy at Qazi Hussain Ahmad Medical Complex, Nowshera. Employing a modified Clinician and Group-Consumer Assessment of Health care Providers and Systems (CG-

CAHPS) survey tailored to the surgical current context, this research seeks to delineate how interaction at each phase influences patient perceptions. The findings are anticipated to guide interventions enhancing surgical team communication, ultimately improving patient-centered care in cholecystectomy and similar clinical environments.

METHODOLOGY

A cross-sectional study was conducted in Department of Surgery, Surgical A Unit Male and female ward in Qazi Hussain Ahmed Medical Complex (QHAMC), Nowshera, KPK. Patients were consecutively enrolled in single hospital sites from July to October, 2024. A Sample size of 102 was calculated by WHO sample size calculator (version 2.0) using a confidence level of 95%, anticipated population proportion as 93% with 5% of absolute precision. [7] Informed consent was taken from participating patients. We got approval from Institutional review board approval. Our inclusion criteria were 18 years or older, patient who were diagnosed with Gall Bladder Disease upon ultrasound findings by an expert. Patients that were unable or refused to complete the questionnaire were excluded. There were two parts of questionnaire, the first part focused on the demographics of the patient including Age, Sex, Occupations (student, working, retired, and disabled/unemployed). While the second part focused was devised from the Clinician and Group-Consumer Assessment of Health care Providers and Systems (CG-CAHPS) Adult Visit Survey. A total of nine questions were asked from the patient about their experience and perception of healthcare facility. Four questions asked (Nominal, Q1-4) patient interaction with HCW at different stages of the perioperative care with Yes/No options. The next four questions (Ordinal, Q5-8) collected information related to patient satisfaction while interacting with HCW or facility. The ninth question asked the overall satisfaction of patient with the HCW or facility.

The data analysis was done using SPSS vr.22. Through the Shapiro-Wilk test, preliminary assessments revealed that the data violated assumptions of normality. The Mann-Whitney U test was used to assess significant differences between binary nominal variables (Gender, Q1-4 of table 2) and ordinal outcomes (Q5-8 of table 2), including overall patient health rating, patient engagement with HCWs, satisfaction with surgical care, and communication quality with HCWs. For categorical independent variables with multiple groups (age group, employment status), associations with ordinal outcomes were analyzed using the Kruskal-Wallis H test. A p-value threshold of <0.05 was applied to determine statistical significance.

RESULT

A total of 102 patients were recruited into the study having mean age of 44.0±11.84 years among which males were 33 (32.4%) and female were 69 (67.6%). The majority of patients were from the age group of 45 to 54 years, i.e., 28 (27.5%) and employed, i.e., 44 (43.1%) Table-1. Moreover, Majority of patients rated their overall health as excellent 38 (37.3%), Figure-1.

A majority of patients (91.2–87.3%) reported effective communication and support from surgical team before and during procedure, though post-surgery explanations (80.4%) and follow-up showed rooms for improvement. patients were extensively engaged (28.4%) throughout the experiences of undergoing the surgical procedure and overall satisfaction with healthcare facility of surgery was high (52.0% satisfied versus very dissatisfied 12.7%). Moreover, patients rated the HCWs behaviour and communication as very good (47.1% and 48.0% respectively), Table-2.

Mann-Whitney U tests indicated no statistically significant difference between male and female patients in their rating the HCWs' encounters (frequency, behaviour, communication, overall health or satisfaction with surgeons as $p>0.05$ for all comparisons). Whereas HCWs encounters with patient revelled statistically significant differences between patients who reported effective pre and pari-surgical communication by surgeon's team (yes group) and those who did not (No group) across all ordinal outcomes ($p<0.05$). Patients in the NO group consistently rated their experiences lower than those in the Yes group. Table-3.

The Kruskal Wallis test revealed significant differences in overall health ratings across age groups, $H(4)= 12.09$, $p=0.017$, and in the frequency of patients encounter with HCW, $H(4)= 9.91$, $p=0.42$. Similarly, overall health rating, frequency of encounter with and behaviour of HCWs resulted in significant differences across employment status, $H(2)= 11.01$, $p=0.004$, $H(2)= 11.10$, $p=0.004$ and $H(2)= 9.53$, $p=0.009$ respectively, Table-4.

DISCUSSION

This study demonstrated a significant association between perioperative quality interaction and patient satisfaction among laparoscopic cholecystectomy patients at QHAMC. The overall rating of patient about their health revealed a mixed perception, yet most of them rated 'excellent', i.e., 37%. These findings align with prior research linking effective provider communication to improved patient satisfaction in surgical settings.[8] While preoperative and intraoperative communication received high satisfaction rating (91.2%–87.3%), postoperative explanations (80.4%) revealed gaps, suggesting

opportunities for improvement care is often deprioritized due to systemic constraints.

A significant number of patients, i.e., 91.2% affirmed that the surgical tea effectively communicated preoperative information. This aligns with evidence that structured preoperative counselling reduces anxiety and enhances compliance.[9] However, the 8.8% who reported inadequate communication (n=9). Their experiences rated significantly lower across all ordinal outcomes. This dichotomy suggests that while preoperative communication is largely successful, even small oversight can detrimentally impact satisfaction, particularly in the settings like Pakistan where delayed presentations amplify patients' vulnerability.[10] Standardizing preoperative checklists could mitigate such risks.

During surgery, 92.2% felt well-informed by the surgeons and 87.3% praised anaesthesiologists' interaction. However, 12.7% dissatisfied with anesthesia explanations reported poorer ratings of HCW behaviour and communication, though these differences were non-significant. This contrasts with the studies emphasizing anesthesia communication as pivotal for trust-building.[11] The non-significance here may reflect small subgroup sizes of cultural factors where patients hesitate to critique authority figures.[12]

Only 80.4% of the patients felt adequately informed post-surgery. This aligns with global trends where postoperative care is fragmented.[13] Notably, the 'no' group (n=20) rated HCW behaviour and communication lower, though differences were non-significant (p>0.05). This suggests systemic issue such as understaffing or time constraints, rather than individual shortcomings. Implementing structured discharge protocols, could bridge this gap.[14]

Contrary to studies highlighting gender disparities in surgical care[15], this study found no significant differences between male and female patients. This may reflect gender-neutral communication protocols or cultural norms where Pakistani patients prioritize respect for HCWs over gendered critiques. Further qualitative research is needed to explore this paradox.

Age and employment status significantly influenced satisfaction. Older patients (45–54 years) and employed individuals reported higher satisfaction with p=0.004. Conversely, unemployed patients rated encounters lower, mirroring socioeconomic disparities in healthcare access.[16] Retired individuals, despite their age, reported moderate satisfaction (mean rank= 61.4), suggesting that financial security or health literacy may buffer communication challenged. These findings advocate for targeted support for vulnerable groups, such as unemployed patients, who constituted 32.4% of the cohort.

While our cross-sectional design and reliance on self-reported data limit causal conclusions and introduce recall bias, applying robust non=parametric analyses ensured if insights despite non-normal distribution. Future longitudinal studies with embedded qualitative interviews would better elucidate satisfaction trajectories and explain lower postoperative rains. To address the identified gaps, we recommend standardizing postoperative follow up through posy discharge calls or digital reminders, training HCWs in empathetic, culturally sensitive communication and implementing tailored strategies for older and unemployed patients. Moreover, the modified CG-CAHPS shall be checked for item analysis and tailored tool shall be designed that could continuously monitor and enhance patient satisfaction.

CONCLUSION

This study highlights the important relationship between perioperative quality interaction and patient satisfaction in laparoscopic cholecystectomy. While pre and intra operative communication excels, postoperative follow-up and HCWs soft skills require refinement. By addressing demographic disparities and systemic haps, our setups can align its practices with global patient-centred care standards.

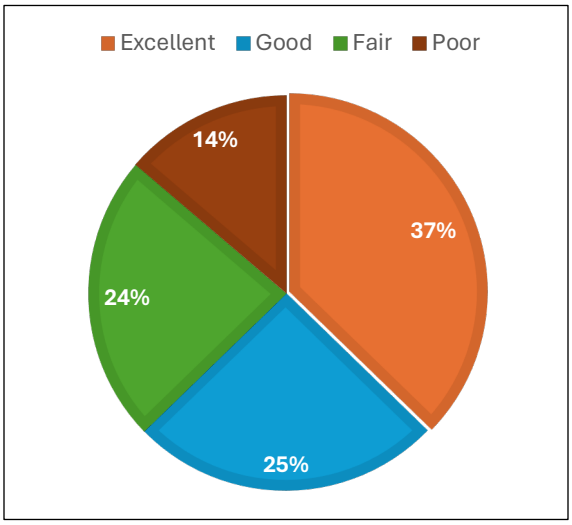

Figure-1: Overall health rating of the participants (n=102)

Table-1: Demographics frequencies of the participants (n=102)

Variable		Frequencies)	Percentages
Gender	Male	69	67.6
	Female	33	32.4
Age Group (years)	35 to 44	26	25.5
	45–54	28	27.5
	55–64	26	25.5
	65–74	16	15.7
	≥75r	6	5.9
	Employed	44	43.1

Employment status	Retired	25	24.5
	Unemployed	33	32.4

Table-2: Frequencies and percentages of the questions used in the study

Q. No	Questions	Frequency	Percent
1	**Before surgery, did the surgeon's team effectively communicate essential information, provide clear preparation instructions, and listen to your concerns?**		
	Yes	93	91.2
	No	9	8.8
2	**During your surgery phase, did your surgeon keep you well informed and help you feel at ease?**		
	Yes	92	90.2
	No	10	9.8
3	**Did the anaesthesiologist clearly explain the anesthesia process, answer your questions, and make you feel comfortable?**		
	Yes	89	87.3
	No	13	12.7
4	**After your surgery, did your surgeon and their team adequately explain recovery expectations, follow up on your care, and address your concerns?**		
	Yes	82	80.4
	No	20	19.6
5	**How would you rate the overall frequency of your encounters with health care workers?**		
	Minimal Engagement	9	8.8
	Limited Engagement	10	9.8
	Moderate Engagement	13	12.7
	Regular Engagement	20	19.6
	Frequent Engagement	17	16.7
	Extensive Engagement	33	32.4
6	**Overall, how satisfied are you with your care provided at surgical procedure?**		
	Very Satisfied	29	28.4
	Satisfied	53	52.0
	Dissatisfied	7	6.9
	Very dissatisfied	13	12.7
7	**How would you rate the overall behavior of the health care worker during your encounter(s)?**		
	Very Good	48	47.1
	Good	34	33.3
	Average	9	8.8
	Bad	8	7.8
	Very Bad	3	2.9
8	**How would you rate the overall communication of the health care worker?**		
	Very Good	49	48.0
	Good	35	34.3
	Average	6	5.9
	Bad	6	5.9
	Very Bad	6	5.9
	Total	102	100.0

Table-3: Mann-Whitney U test results across grouping variables

Ordinal Variable		N	Overall health rating				Frequency of encounters with healthcare workers				Behaviour of healthcare workers				Communication of healthcare workers			
			Median (IQR)	95% CI Min-Max	U	*P*	Median (IQR)	95% CI Min-Max	U	*p*	Median (IQR)	95% CI Min-Max	U	*p*	Median (IQR)	95% CI Min-Max	U	*P*
Gender	Male	33	2 (2)	1.8–2.6	1109	0.828	4 (3.5)	3.5–4.8	1123	0.978	1 (2)	1.5–2.4	1135	0.978	1 (1)	1.4–2.4	1085	0.681
	Female	69	2 (2)	1.9–2.4			4 (3.0)	3.9–4.5			2 (1)	1.6–2.0			2 (1)	3.9–4.7		
Pre-Surgical	Yes	93	2 (2)	1.9–2.2	60	0.00	5 (2.5)	4.3–4.8	00	0.00	1 (1)	1.5–1.8	31	0.00	1 (1)	1.5–1.8	37	0.00
	No	9	4 (0.5)	3.4–4.1			--	--			4 (2)	3.3–4.7			5 (1.5)	3.4–5.2		
Surgery Phase	Yes	92	2 (2)	1.8–2.2	115	0.00	5 (2)	4.1–4.8	90	0.00	1 (1)	1.5–1.9	62.50	0.00	1 (1)	1.5–1.9	70	0.00
	No	10	3.5 (1)	3.1–3.9			--	--			3.5 (1)	3.1–3.9			3.5 (1)	3.1–3.9		
Anaesthesiologist	Yes	89	2 (2)	1.8–2.3	372	0.031	5 (2)	4.0–4.8	247	0.001	1 (1)	1.6–2.1	498	0.383	1 (1)	1.7–2.2	545	0.715
	No	13	3 (1)	2.2–3.2			--	--			2 (0.5)	1.5–2.2			2 (1)	1.4–2.0		
Post-Surgical	Yes	82	2 (2)	1.9–2.4	796	0.833	5 (3)	3.9–4.7	640	0.120	2 (1.2)	1.7–2.2	690	0.238	2 (1)	1.7–2.2	710	0.314
	No	20	2 (2)	1.6–2.5			--	--			1.5 (1)	1.3–1.7			1.5 (1)	1.3–1.7		

Table-4: Kruskal-Wallis Test of multivariate ordinal variables.

Ordinal Variable		N	Overall health rating			Frequency of encounters with healthcare workers			Behavior of healthcare workers			Communication of healthcare workers		
			Mean Rank	*H*	*p*	Mean Rank	*H*	*p*	Mean Rank	*H*	*p*	Mean Rank	*H*	*P*
Age group	35–44	26	46.1	12.09	0.017	54.8	9.91	0.042	48.6	6.82	0.146	49.6	7.18	0.127
	45–54	28	51.1			50.6			55.8			55.8		
	55–64	26	46.0			54.1			48.1			46.7		
	65–74	15	73.4			34.6			61.7			62.1		
	≥75	6	45.0			74.6			31.3			32.0		
Employment status	Employed	44	40.9	11.01	0.004	61.8	11.10	0.004	43.1	9.53	0.009	43.7	8.07	0.18
	Retired	25	61.4			48.6			51.6			52.1		
	Unemployed	33	58.1			40.0			62.6			61.5		

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