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Observational Research on Quality of Life Before and after Major Surgery: Insights from a Developing Country

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ABSTRACT: Introduction: Changes in health-related quality of life (HRQoL) before and several days after surgery, which may better reflect patients' health status and help provide more efficient perioperative care, have rarely been investigated. Therefore, we sought to assess patients' HRQoL before undergoing major elective surgeries at admission (baseline) and 6 weeks after surgery (follow-up). **Methods**: A prospective cohort study was conducted from October 2021 to March 2022 using the EuroQol-5D (EQ-5D) instrument with a utility score (EQsum) and a visual analog scale (EQ-VAS) for the assessment of HRQOL. Two hundred and ten patients were scheduled for elective major surgery (hepatobiliary, spine and orthopedic, abdominal hernia, lower and upper GI, breast, and endocrine). An-Najah National University Hospital (NNUH) and Rafidia Surgical Hospital (RSH) were enrolled. **Results**: The study included 210 participants, with 126 female (60%) and 84 (40%) male patients. The average age of the subjects was 49 ± 5 years. Approximately 40% of participants were classified as overweight, while approximately two-thirds had completed high school and were unemployed. Additionally, 41% of participants reported having a low income, defined as less than 1750 Shekels. The study showed a statistically significant difference in patients' EQsum scores before and after major surgical interventions. The different components of the EQ-5D were mobility ($p < 0.001$), self-care ($p < 0.002$), daily activities ($p < 0.001$), pain/discomfort ($p < 0.001$), and depression/anxiety ($p < 0.001$). Patients reported improved overall health on the EQ-VAS after surgery ($p < 0.001$). The EQsum scores were greater in the postoperative period, specifically for younger individuals, individuals with higher educational levels, individuals with higher incomes, and smokers. **Conclusion**: This study revealed a noticeable difference in HRQoL between the preoperative period and the postoperative period; therefore, the null hypothesis was rejected for all quality-of-life components: mobility, self-care, activities, anxiety, and pain. Most patients reported having the same HRQoL in both periods, with more than one-third reporting an improvement in the postoperative period. Healthcare providers should be aware of low HRQoL among patients with no formal education, smokers, elderly individuals, and low income to improve their HRQoL.

Keywords: Quality of Life; Major Surgery; Preoperative; Postoperative; EuroQol-5D

INTRODUCTION

Major surgery can cause a metabolic stress response as well as inflammation, both of which can help with anesthetic and postoperative pain management. Shortly after surgery, this stress mechanism that causes exhaustion may impair health-related quality of life (HRQoL), putting patients at risk of both postoperative complications and significant pain [1]. The impact of surgery on a patient's quality of life (QOL) is considerable, but preoperative QOL may significantly influence postoperative recovery. The most common outcomes reported are complications, recurrence rate, and survival. On the other hand, hospitalization, well-being, and QOL are equally essential from the patient's perspective [2].

QOL, or HRQoL, encompasses various factors and assesses multiple facets of patients' daily functioning. According to the World Health Organization (WHO), QOL is described as individuals' subjective perception of their overall life situation within the context of their cultural and value frameworks and in relation to their objectives, anticipations, criteria, and anxieties [3]. Major surgeries are procedures involving general anesthesia or any

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interventions that entail accessing the major body cavities [4].

Typically, the HRQoL is assessed one to two years after a major surgical intervention. Nonetheless, an earlier evaluation of HRQoL, within one to four weeks after the surgical intervention, could provide a more precise representation of a patient's health status. Such early assessment may also provide more efficient perioperative and in-hospital care, especially in situations of short in-hospital stays and immediate recall, ultimately enhancing long-term outcomes. Notably, scant attention has been given to examining changes in HRQoL occurring within several days following surgery, and preadmission analysis of HRQoL is often overlooked in outcome evaluation [5, 6]. HRQoL has only been described in a few earlier studies. Furthermore, there are no determinants for evaluating prehospital health conditions or quality of life on severity scales that describe disease severity, evaluate the effectiveness of treatment, predict outcomes, or assess resource consumption [1].

HRQoL measurements have been widely performed internationally before major surgeries and/or surgical adjustments. There are currently several instruments and metrics listed in academic databases, but the findings of these studies are very different. A prospective study at the Sanjay Gandhi Postgraduate Institute of Medical Sciences in India revealed that after supratentorial glioma surgery, major HRQoL indicators improved significantly [7]. Similarly, a different prospective study from the Czech Republic showed that although older, critically ill patients had poor preoperative HRQoL, they significantly improved after surgery [8]. A popular health instrument created in Europe and used worldwide is the European Quality of Life Scale 5. The EuroQol Group developed the tool to offer a summary measure of health for use in clinical and financial decision-making and a measure of one's overall health status [9]. This tool includes an index value that enables identification in population surveys and healthcare evaluations, along with a brief descriptive profile validated across various health and illness categories. Since the EQ-5D tool is given to respondents directly, it can be used in various contexts, including mail surveys, in-person interviews, and clinics [9].

To our knowledge in Palestine, there is a gap in knowledge regarding the quality of life of patients before and after undergoing major elective surgeries. Despite the success of surgical interventions in improving health outcomes and overall well-being, there is a lack of comprehensive understanding of how these procedures might impact patients' quality of life, preoperatively and postoperatively. This knowledge gap obstructs healthcare providers' ability to adequately assess and address patients' needs and concerns, consequently affecting the delivery of patient-centered care. Bridging this gap through research is necessary to enhance the effectiveness of surgical interventions and optimize patient outcomes in the Palestinian healthcare system.

There is no research on how HRQoL varies before and after surgery in Palestine. This could, therefore, improve postoperative care and benefit the patient's health. To compare HRQoL scores between the preoperative and postoperative periods and to identify the factors associated with patients' HRQoL before and after surgery, the present study aimed to assess patients' HRQoL before and after surgery using the EQ-5D, which includes utility scores and visual analog scale scores. This study is important because it provides information on HRQoL changes before and after major elective procedures. This information is crucial for assessing the effectiveness of perioperative care. These findings may be advantageous by enabling healthcare professionals to deliver more patient-centered care, which improves health outcomes and overall satisfaction. The development of tailored interventions to improve patients' health outcomes may be made possible by identifying patients more likely to experience improvements in HRQoL following surgery by predicting factors linked to changes in HRQoL after surgery.

METHODS

Study design

A prospective cohort study assessed the correlation between pre- and postmajor elective surgical operations and HRQoL. The research employed a questionnaire comprising various sections encompassing the widely used EQ-5D assessment tool to evaluate overall QoL.

Study setting

The data were collected from the general surgery departments of An-Najah National University Hospital (NNUH), a tertiary care hospital in the northern part of the country, and Rafidia Surgical Hospital (RSH), a major governmental surgical hospital in the city of Nablus Palestine.

Study population

Adult patients who underwent major elective surgeries such as hepatobiliary, spine and orthopedic, abdominal hernia, lower and upper GI, breast, and endocrine procedures at both hospitals were invited to participate in the study. A total of 210 patients were conveniently selected from both hospitals: 38 from NNUH and 172 from RSH.

Data collection form

The research compiled data from three main sections. The initial segment included sociodemographic information such as age, sex, occupation, education level, place of residence, monthly income, smoking habits, and BMI. The second section collected clinical information, including participants' diagnoses, surgical procedures, and any accompanying health conditions. The third section evaluated participants' overall quality of life before and after surgery using the European Quality of Life Scale 5 Dimensions (EQ-5D) assessment tool [10]. This tool gauged self-care abilities, mobility, daily activities, levels of pain/discomfort, and feelings of anxiety/depression [10]. Although the questionnaire incorporates a joint dimension for anxiety and depression, it might not offer a clear distinction between the two states. Anxiety typically encompasses emotions of apprehension, tension, or uneasiness regarding future uncertainties, whereas depression involves feelings of sadness, despair, or disinterest in activities. Participants rated their level of impairment in each dimension on a scale from no problems to extreme problems (1 (best response) to 5 (worst response)), 0: no problem, 1-2: slight, 3: moderate, 4: severe, and 5: unable to perform. These ratings provided quantitative data on HRQoL, allowing for comparisons before and after surgery to evaluate changes in overall health status. Additionally, it features a visual analog scale called the EQ-VAS, which allows individuals to rate their health and quality of life on a scale from 0 to 100, providing a single index value for overall health perception. The EQ-5D provided insights into patients' issues across these domains, with results consolidated into a single summary index (EQsum), ranging from 1.00 (indicating optimal

health) to 0 (indicating death). The Arabic version of the EQ-5D was used following developer guidelines and permissions [11-18]. Two academic experts in QOL research and statistical analysis from An-Najah University's Faculty of Medicine and Health Sciences reviewed the questionnaire for face validity, content validity, and clinical accuracy to ensure the study's integrity. Data collection involved face-to-face interviews during the perioperative period and phone interviews postoperatively. The questionnaire underwent pilot testing on 15 subjects to gauge readability and completion time [19].

During the perioperative period, we conducted face-to-face interviews with participants.

During the postoperative period, we scheduled phone interviews with participants. We administered the questionnaire over the phone, read each question aloud, and recorded responses. Participants were encouraged to provide feedback on readability and clarity, and we recorded the time taken for each interview.

Following each interview, participants were asked to share their thoughts on the questionnaire's readability, clarity, and overall experience. Based on feedback and completion time analysis, we revised the questionnaire to enhance readability and comprehension, making necessary adjustments to improve clarity and streamline formatting.

Ethical considerations

The current investigation was subjected to the scrutiny and approval of the An-Najah National University Institutional Review Board (Med Sep 2021/68). Furthermore, the research team obtained permission from the NNUH and the Palestine Ministry of Health to commence the study. The study's details were explicitly communicated to the prospective participants, and their informed verbal consent was duly acquired.

Statistical analysis

The data analysis was conducted utilizing IBM-SPSS version 21 from Chicago, IL, USA. Categorical variables are presented as frequencies and percentages, while continuous variables are expressed as either means and standard deviations or medians and interquartile ranges. The normality of continuous variables was assessed through the Kolmogorov–Smirnov test. Cronbach's alpha was calculated to assess the internal consistency and reliability of the scale, with a value of $\alpha = 0.85$ indicating good reliability. Baseline patient demographics were examined using the Kruskal–Wallis, Fisher's exact, and Mann–Whitney U tests. The results are reported as percentages or medians with interquartile ranges (IQRs). The analysis of the EQ-5D domains involved McNemar's test to identify changes in individual domains, categorized as deteriorated, equal, or improved, over the follow-up period. The Wilcoxon test was used to compare the EQsum and EQ-VAS scores between baseline and follow-up, with statistical significance set at a P value less than 0.05. Finally, changes in the EQsum and EQ-VAS between baseline and follow-up were categorized as worse, equal, or improved.

RESULTS

In this investigation, a cohort of 218 individuals who had undergone elective surgical procedures were invited to participate. Of these, 210 consented to participate, yielding a response rate of 96.33%.

Sociodemographic and clinical characteristics

The study sample consisted of participants with a mean age of 49 ± 5 years, with 23.33% being older than 60 years. Females constituted slightly more than half of the participants, accounting for 60% of the sample. In addition, 41.9% of the participants were smokers, 33.33% were obese, and 52.4% had comorbidities such as diabetes mellitus, hypertension or ischemic heart disease. 25.23% of the participants had an educational status of 'graduate,' and 3.80% had no formal education. Participants without an occupation comprised 61.9%, and those with the lowest income level, <1750, comprised 41.42% (Table 1).

Table (1): Sociodemographic characteristics of the participants.

Variables	N (%)
Age	
<30	28(13.33)
30-60	133(63.33)
>60	49(23.33)
Gender	
Male	84(40)
Female	126(60)
BMI	
Underweight	2(0.95)
Normal	55(26.19)
Overweight	83(39.5)
Obese	70(33.33)
Smokers	
Yes	88(41.9)
No	122(58.1)
Comorbidities (HTN, DM or IHD)	
Yes	100(47.62)
No	110(52.38)
Education	
No formal education	8(3.80)
Primary	15(7.14)
Secondary	134(63.80)
Graduated	53(25.23)
Employment	
Employed	80(38.1)
unemployed	130(61.9)
Income	
<1750	87(41.42)
1750-3000	77(36.66)
3000-5000	36(17.14)
>5000	10(4.76)

EQ-5D health status

During the preoperative phase, patients who reported the most unfavorable health status across the EQ-D5 dimensions had the following distributions: mobility 5 (2.38%), self-care 3 (1.42%), usual activities 10 (4.76%), pain and/or discomfort 14 (6.66%), and depression and/or anxiety 3 (1.42%). This information is illustrated in (Figure 1).

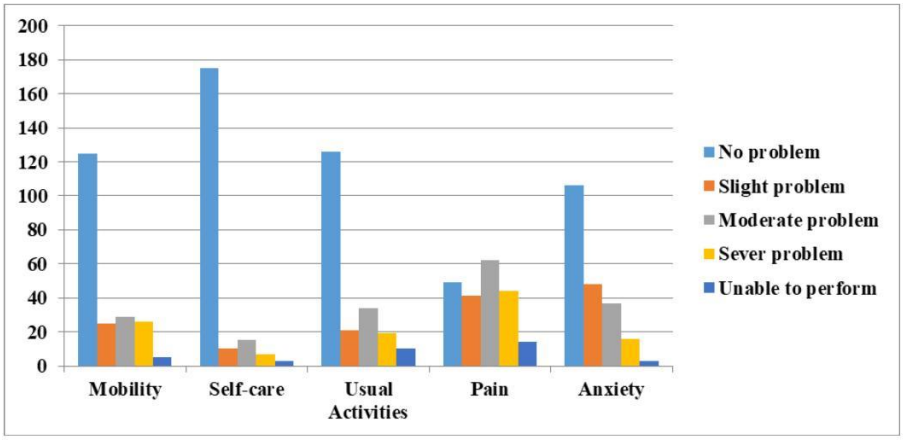

Figure (1): Distribution of health-related quality of life measures in different European Quality of Life scale 5 (EQ-5D) dimensions for preoperative patients.

Furthermore, in the postoperative phase, patients who reported the most unfavorable health status across the EQ-D5 dimensions had the following distributions: mobility, 2 (0.95%); self-care, 2 (0.95%); usual activities, 8 (3.8%); pain and/or discomfort, 0 (0%); and depression and/or anxiety, 2 (0.95%). A graphical representation of these data can be found in (Figure 2).

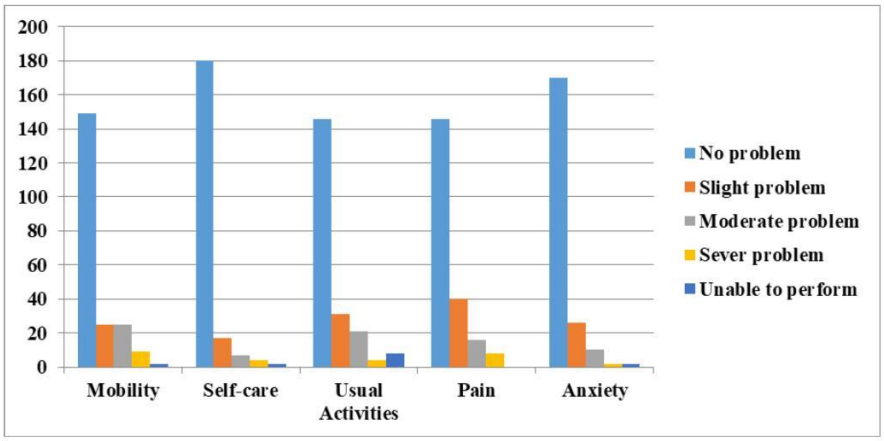

Figure (2): Distribution of health-related quality of life measures in different European Quality of Life scale 5 (EQ-5D) dimensions for postoperative patients.

There were statistically significant differences in all the European Quality of Life Scale domains before and after major surgery (Table 2). All the domains showed statistically significant improvement (McNemar test <0.001 in all domains except self-care, which was <0.002). During the follow-up 6 weeks after surgery, 2 patients had worsened mobility, 49 patients had improved mobility, and 159 patients' mobility status remained unchanged. One patient reported a worsened ability to self-care, 20 reported an improved ability, and 189 remained unchanged. Eight patients reported a worsened ability to perform the usual activities, 56 reported an improvement, and 146 remained the same.

Regarding pain/discomfort, 5 patients reported worsened pain, 148 reported less pain, and 57 reported the same pain level before and after surgery. The last domain of the questionnaire is depression/anxiety. Seven patients reported a worsened status of anxiety, 88 reported that anxiety and depression decreased after surgery, and 115 patients reported the same level of anxiety and depression. (Table 3)

Table (2): Patients reporting problem levels in the EQ-5D domains before and after major surgery.

EQ5D domain	Problems	Before Surgery N (%)	After Surgery N (%)	p*
Mobility	No problem	125(59.5)	149(71)	< 0.001
	Slight	25(11)	25(11.9)	
	Moderate	29(13.8)	25(11.9)	
	Severe	26(12.4)	9(4.3)	
	Unable to perform	5(2.4)	2(1.0)	
Self-care	No problem	175(83.3)	180(85.7)	<0.002
	Slight	10(4.8)	17(8.1)	
	Moderate	15(7.1)	7(3.3)	
	Severe	7(3.3)	4(1.9)	
	Unable to perform	3(1.4)	2(1.0)	
Usual Activities	No problem	126(60)	146(69.5)	<0.001
	Slight	21(10)	31(14.8)	
	Moderate	34(16.2)	21(10)	
	Severe	19(9)	4(1.9)	
	Unable to perform	10(4.8)	8(3.8)	
Pain/Discomfort	No problem	49(23.3)	146(69.5)	<0.001
	Slight	41(19.5)	40(19)	
	Moderate	62(29.5)	16(7.6)	
	Severe	44(21)	8(3.8)	
	Unable to perform	14(6.7)	0	
Depression/Anxiety	No problem	106(50.5)	170(81)	<0.001
	Slight	48(22.9)	26(12.4)	
	Moderate	37(17.6)	10(4.8)	
	Severe	16(7.6)	2(1.0)	
	Unable to perform	3(1.40	2(1.0)	
* McNamara's Test				

Table (3): Direction of change in each EQ-5D domain post-surgery.

EQ-5D domain	Worsened	Same	Improved
	N (%)	N (%)	N (%)
Mobility	2 (0.95%)	159 (75.71%)	49 (23.33%)
Self-care	1 (0.47%)	189 (90%)	20 (9.52%)
Usual activities	8 (3.80%)	146 (69.5%)	56 (26.66%)
Pain/discomfort	5 (2.38%)	57 (27.14%)	148 (70.47%)
Depression/Anxiety	7 (3.33%)	115 (54.76%)	88 (41.90%)

The median EQ-VAS score before surgery was 72.14 (interquartile range: 60-85), and the median EQ-VAS score after surgery was 80.85 (interquartile range: 75-90). In addition, a significant difference between the two scores in the preoperative and postoperative periods was found ($p < 0.001$) (Table 4).

Table (4): Overall Self-related health states (EQ-VAS) before and after surgeries.

Before surgery	After Surgery	P value
Median (Q1-Q3)	Median (Q1-Q3)	
72.14 (60-85)	80.85 (75 -90)	<0.001*

* Wilcoxon Test		

Table 5 demonstrates that substantial discrepancies existed in the preoperative state among the participant groups based on their education level and income, with a p-value <0.005. Conversely, no statistically significant differences were evident with sex, age, BMI, employment status, comorbidities, or smoking status. During the postoperative period, age, education level, income, and smoking status were significantly different between the participant groups, while sex, BMI, employment status, and comorbidities were not substantially different.

Table (5): Effect of sociodemographic and clinical characteristics on participants' quality of life.

Variable	Value	N (%)	Pre-Surgery Mean Rank	P value	Post-Surgery Mean Rank	P value
Gender	Male	84(40)	107.67	0.673	109.01	0.453
	Female	126(60)	104.06		103.16	
Age	<30	28(13.33)	125.73	0.58	116.14	0.006
	30-60	133(63.33)	106.35		111.33	
	>60	49(23.33)	91.63		83.59	
BMI	Underweight	2(0.95)	143.75	0.446	72.5	
	Normal	55(26.19)	98.48		102.04	
	Overweight	83(39.5)	111.95		107.51	
	Obese	70(33.33)	102.28		106.78	0.783
Education	No formal education	8(3.80)	78.75	0.019	74.69	<0.001
	Primary	15(7.14)	73.43		51.8	
	Secondary	134(63.80)	103.97		107.24	
	Graduated	53(25.23)	122.47		120.94	

Employment	Employed	80(38.1)	115.51	0.066	114.72	0.063
	Unemployed	130(61.9)	99.59		100.05	
Income	< 1750	87(41.42)	92.84	0.001	83.29	<0.001
	1750-3000	77(36.66)	106.39		116.06	
	3001-5000	36(17.14)	138.83		141.03	
	>5000	10(4.76)	88.75		89.3	
Comorbidities	Yes	100(47.6)	99.14	0.148	101.31	0.295
	No	110(52.4)	111.28		109.31	
Smoking	Smoker	88(41.9)	106.15		116.05	0.019
	Nonsmoker	122(58.1)	105.03	0.895	97.89	

Our results revealed that the type of surgery performed can significantly impact a patient's preoperative and early postoperative QoL. Additionally, there was a notable improvement in QoL following surgery ($p<0.001$), indicating that the procedure can have a positive effect on a patient's overall well-being (Table 6).

Table (6): Changes in quality of life-based on the type of surgery.

Type of surgery	N*	Pre-surgery		Post-Surgery		
		Median (IQR) Score	Mean Rank	Median (IQR) Score	Mean Rank	P value#
Hepatobiliary	55	0.75 (0.7- 0.85)	111.92	0.9 (0.8 - 0.93)	119.99	<0.001
Spine and Orthopedics	37	0.6 (0.4 - 0.7)	48.20	0.7 (0.55 - 0.8)	53.43	
Abdominal hernia	47	0.8 (0.7 - 0.85)	129.44	0.9 (0.8 - 0.95)	126.19	
Lower GI	31	0.75 (0.6 - 0.8)	105.94	0.85 (0.75 - 0.9)	108.97	
Upper GI	4	0.825 (0.35 - 0.96)	126.13	0.85 (0.55 - 1.0)	112.75	
Breast and Endocrine	26	0.775 (0.7 - 0.86)	119.37	0.8 (0.75 - 0.9)	99.87	

*10 cases that did not belong to the abovementioned categories were excluded.
#Kruskal–Wallis Test.

DISCUSSION

Our study represents a general analysis of HRQoL in patients who underwent elective major surgical operations in the Northern West Bank in Palestine, specifically at Najah National University and Rafidia Governmental Hospital. Assessing the patient's pre-surgery QoL can be used to identify potential risk factors and areas of concern that may impact postoperative recovery. Continuous assessment of QoL post-surgery helps monitor the patient's progress in recovery and identify any changes or complications. Post-surgery QoL assessments can modify care plans as needed, such as adjusting medication regimens, rehabilitation programs, or psychosocial support.

The EQ-5D scale components were used to measure HRQoL before and 6 weeks after surgery. Although there have been multiple studies regarding HRQoL after surgery, few studies have evaluated HRQoL before and after surgery and compared it. This study emphasizes the importance of assessing patients' QoL before and after surgery to provide better perioperative care. As part of the preoperative evaluation, healthcare providers should assess patients' QoL and use this information to develop personalized care plans. Postoperative QoL monitoring can assist in identifying patients who may require additional assistance during their recovery.

The pre-and postoperative HRQoL scores for the EQ-5D components, including mobility, self-care, daily activities, anxiety, and pain, were significantly different ($p<0.001$). It is noteworthy, nevertheless, that most participants had good HRQoL prior to surgery, and in the six weeks following surgery, HRQoL either remained the same or improved. Additionally, a sizable portion of participants demonstrated an improvement in their EQ-VAS score—the final component of the EQ-5D, which gauges the patient's subjective feelings about their health—during the follow-up period, suggesting that their health improved. Second, the participants said they were happy with how the surgery was. Third, a wide range of clinical and sociodemographic factors affect HRQoL. Like many other studies, our study used the EQ-5D.

These four findings are reliable instruments for evaluating quality of life in several contexts [19-21]. In addition to being a tool for estimating quality of life, the EQ-5D can be used to gauge satisfaction and improvements after major surgery. The results of this study align with other research demonstrating noteworthy enhancements in the EQ-5D score in the postoperative phase following major surgery. For instance, a prospective study on health-related quality of life following surgery in supratentorial gliomas revealed improvements in most HRQoL parameters [7]. However, additional research on the preoperative and early postoperative quality of life after major surgery was published in Switzerland in 2015 [22-25].

In our study, more than half of the patients reported the same HRQoL. Approximately one-third of the patients reported an improvement in their HRQoL after surgery. Less than 3% of the patients demonstrated a worsened HRQoL after surgery. These changes after surgery were influenced by age, income, and education level (and smoking).

Age was found to not affect the HRQoL in the preoperative period ($p>0.01$), but it had a very significant effect ($p<0.001$) on the HRQoL in the postoperative period. Patients under 30 years old had the highest mean rank of 116.14, indicating that they experienced the greatest improvement in their postoperative HRQoL, which the greater physical activity of younger people, fewer comorbidities, and fewer possible surgical complications can explain. Many studies have reported similar results regarding the beneficial effect of young age on HRQoL [15, 26].

Education status has been shown to have a role in improving quality of life. Our study showed that people who graduated from college or university had the highest mean rank in the preoperative and postoperative periods compared to other levels of education. This may be due to the awareness and understanding of educated patients regarding their health status, diseases, and their impact and the importance of treatment and treatment adherence [15, 27]. Many studies found the same results regarding the effect of education on HRQoL [28, 29].

This study has shown that income has a strong effect on HRQoL in both the preoperative and postoperative periods. Patients with an income ranging between 3000

and 5000 kg/m2 had better quality of life than patients with a lower income. This means that the higher the income is, the better the quality of life. However, our study showed that patients with incomes greater than 5000 did not have a strong effect, which is explained by the mean income in Palestine, which ranges between 3000 New Israel Shekel (NIS) and 5000 NIS [30, 31].

Smoking had a significant effect on HRQoL only in the postoperative period ($p<0.05$), with smokers having a higher mean rank than nonsmokers, which indicates

Sex, BMI, employment status, and comorbidities did not affect quality of life either before or after surgery.

Although an improvement in the patient's HRQoL was observed, nearly 11% of the patients reported a worsening in one of the EQ-5D components, including mobility, self-care, usual activities, pain/discomfort, and depression/anxiety, after discharge compared to baseline. The worsening of quality of life may be due to multiple factors, including noncompliance with postoperative care, ranging from wound dressing to drug compliance and follow-up clinic visits. This might also be related to the presence of other serious illnesses, such as cancer and genetic diseases. Additionally, old age (>60 years) was found to have the lowest mean rank, which might be one of the causes of worsening HRQoL.

The mean rank after surgery was greater for the EQ-VAS, the second component of the HRQoL questionnaire. This means that most patients reported a better score on the scale 6 weeks after surgery [32].

Strengths and limitations

The strengths of this study included its multicenter design and relatively sufficient sample size. Moreover, this was the first study conducted in the West Bank, Palestine, to compare certain aspects of HRQoL before and after major surgeries. Furthermore, the study employed the EQ-5D, a widely recognized and validated assessment tool for evaluating HRQoL. Nonetheless, this investigation had several limitations: its prospective cohort design rendered it vulnerable to follow-up errors, as some patients were lost to follow-up, leading to unavailable data, and some patients succumbed to their illnesses; the cross-sectional design of this study made it difficult to detect the presence of cause-effect relationships; the use of a convenience sampling approach diminished the ability to generalize the findings to a broader population of patients undergoing major elective surgery; we did not differentiate between patients undergoing open or laparoscopic surgeries; and we did not assess whether there was variation in the scores of patients undergoing abdominal surgeries versus those undergoing other kinds of surgeries, such as orthopedic surgery.

Specifically, its prospective cohort design rendered it vulnerable to loss to follow-up errors, as some patients were lost to follow-up, leading to unavailable data, and some patients succumbed to their illnesses. Last, despite the wide acceptance and usage of the employed assessment tool for monitoring HRQoL, utilizing other tools in conjunction with or in place of it might have produced more accurate data to determine HRQoL.

CONCLUSION

This study provided a preliminary understanding of how these surgical procedures impact patients' quality of life, preoperatively and postoperatively. This information will help healthcare providers adequately assess and address patients' needs and concerns, ultimately improving the delivery of patient-centered care. By conducting this study, we attempted to bridge the gap in knowledge in this area to enhance the effectiveness of surgical interventions and optimize patient outcomes in Palestinian healthcare.

In conclusion, there was a noticeable difference in HRQoL in the preoperative period compared to the postoperative period; therefore, the null hypothesis was rejected for all quality-of-life components: mobility, self-care, activities, anxiety, and pain. Most patients reported having the same HRQoL in both periods, with more than one-third reporting an improvement in the postoperative period. The study's recommendations include the importance of healthcare providers considering patients' QoL as an important aspect of their care before and after surgery. This can be accomplished through routine QoL assessments, personalized care plans, and postoperative QoL monitoring. Furthermore, interventions such as smoking cessation and education programs should be implemented to address the factors that negatively affect patients' QoL. Finally, this study emphasizes the significance of improving the QoL of patients undergoing major surgery in developing countries.

DECLARATIONS

Consent for Publication

Not applicable.

Data Availability

The data relevant to this study are provided within this manuscript.

Author Contributions

AAT, AB, and SZ were involved in the conception and design of the work, analysis, and interpretation of data, as well as the drafting and final approval of the manuscript. LS, NHA, and NNA were involved in the data acquisition, analysis, drafting of the work, and final approval of the version to be published. This research is based on a student project. All authors approved the final manuscript.

Competing Interests

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