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Evaluation of the Quality of Life of Iraqi Patients Undergoing Surgical Tonsillectomy

Dr. Ahmed Mahdi Raheem

C.A.B.M.S., F.I.B.M.S. \ (Otolaryngology) Ministry of Higher Education and Scientific Research, University of Al-Qadisiyah, College of Medicine, Al-Diwaniyah, Iraq

Abstract: Background: Tonsillectomy, the surgical operation of tonsilllectomy to remove tonsils, is highly practiced as a cure for recurrent tonsillitis and sleep apnea obstructions among numerous other illnesses. As much as it has been greatly practiced, still, there still exists a large knowledge gap in the way it influences Iraqi patients' quality of life (QoL). Aims: This study aims to evaluate the QoL of Iraqi patients who underwent surgical tonsillectomy by quantifying demographic factors, postoperative outcomes, and procedure-related complications using validated assessment tools. Method: A cross-sectional observational study was conducted in 120 patients aged between 18 and 40 years with elective or urgent tonsillectomy undergone at a tertiary care center in Iraq from 2024 to early 2025. The demographic profile and pre- and post-operative QoL were assessed on the General Benefits Index (GBI) and on various questionnaires to assess physical, mental, and social functioning. Follow-up measurements were also conducted at one, three, and six months post-surgery, and analysis was carried out using SPSS version 25.Results: The pre-operative GBI score averaged 43.3 (SD = 9.2) and, post-surgery, increased significantly to 74.4 (SD = 7.5). There were marked improvements in quality of life on dimensions: physical health scores rose from 39.2 (SD = 12.6) to 79.5 (SD = 9.4), mental health from 44.1 (SD = 9.9) to 77.3 (SD = 7.8), and social functioning from 49.4 (SD = 8.7) to 81.2 (SD = 6.2). Complications were minimal; 75% had no complications, and 2.5% had severe bleeding. The risk of complications was greater in smokers (Odds Ratio: 2.50, 95% CI 1.15-5.42). Conclusion: Tonsillectomy significantly enhances the QoL of Iraqi patients by enhancing physical, emotional, and social health and maintaining the rate of complications at a low level.

Keywords:. Surgical, Tonsillectomy, GBI, Severe bleeding, Complications, QoL.

INTRODUCTION

Tonsillectomy, a common surgical procedure involving the complete removal of the tonsils, is frequently performed to address recurring tonsillitis, obstructive sleep apnea, and other conditions affecting the oropharynx. According to recent estimates, tonsillectomy is one of the most prevalent surgical interventions performed in the pediatric and adult populations globally [1,2]. In Iraq, as in many developing countries, the surgical management of tonsil diseases is vital due to a high incidence of recurrent tonsillitis and associated complications. Despite its commonality, there remains a significant gap in the literature regarding the impact of this procedure on the quality of life (QoL) of patients, particularly within the Iraqi demographic [3,4].

Several variables can influence the outcome of tonsillectomy and subsequent improvement of patients' quality of life [5]. These variables might be demographic in nature, including age, sex, education level, and lifestyle practices like smoking and alcohol consumption. For instance, age must be considered; younger patients can experience greater impacts following surgery, given greater physiological resistance. Moreover, education level might influence knowledge of the surgery among patients, thus influencing pre-operative anxiety and post-operative satisfaction [6,7].

The quality of life is a multifaceted construct representing a number of dimensions of well-being, physical and social, and mental as well [8]. Comprehending the way patients' lives change after surgery is essential after medical treatments, such as tonsillectomy [9]. The past evidence has confirmed that surgery will result in quantifiable changes in various QoL measurements, such as relief of pain, improved quality of sleep improved, and increased social interactions. Recognition of these changes can assist healthcare practitioners in setting realistic expectations for families and patients and can guide clinicians to make the necessary decisions concerning timing and the necessity of surgical intervention [10].

Furthermore, complications related to tonsillectomy, though generally infrequent, can significantly affect patients' postoperative recovery and overall satisfaction. Recognizing and addressing the risk factors associated with complications, such as the type of anesthesia used, duration of the procedure, and pre-existing health conditions, can further refine clinical protocols and enhance patient outcomes.

Thus, this study aims to evaluate the quality of life of Iraqi patients undergoing surgical tonsillectomy by employing validated assessment tools and demographic data analysis.

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***Corresponding Author:** Dr. Ahmed Mahdi Raheem

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METHODOLOGY

This study uses a cross-sectional observational study to assess the quality of life of Iraqi patients following tonsillectomy. One hundred twenty patients were recruited from multiple different Iraqi hospitals over a period of one year, from 2024 through early 2025. The data collection took place over a period of one year, with patients recruited from a single tertiary care center in Iraq. Participants were included and excluded by rigorous inclusion and exclusion criteria, and ethical approval was obtained from the Institutional Review Board of the hospital.

Participants

Inclusion Criteria

18–40-year-old patients undergoing elective or urgent tonsillectomy, and patients who consented to provide written informed consent to participate in the study.

Exclusion Criteria

- Patients with complex comorbidities (for instance, cardiovascular disease and diabetes).
- Patients with psychiatric conditions that would affect their judgment for determining quality of life.
- Those who have had a tonsillectomy for cancer.
- One hundred twenty patients were selected for the purpose of this study, which was to include diverse representation by demographic variables such as age, gender, level of education, and smoking history.

Data Collection

Demographic Information

The demographic information was collected from the participants, including age, gender, height, weight, body mass index (BMI), educational status, smoking history, and surgical indication. The General Benefits Index (GBI) was administered before and after surgery to measure the quality of life. This index assesses areas such as physical health, mental health, and social functioning. Also, patients were asked to complete a pre-surgery quality of life questionnaire, which collected data on the type of anesthesia, surgery time, hospital stay, follow-up duration, and type of complications from medical records. Follow-up: Patients were followed up at one, three, and six months after surgery to assess surgical outcomes and improvement in quality of life.

Statistical Analysis

Data were analyzed and tabulated with the help of statistical software (SPSS version 25). Descriptive statistics were represented as means, standard deviations (SDs), and percentages for continuous and categorical variables, respectively.

1. Assessment of Demographic Data

Descriptive statistics of all demographic variables, i.e., age, sex, education level, body mass index (BMI), and smoking history, were collected.

2. Assessment of Quality of Life

Mean pre- and post-operative GBI scores and markers of quality of life (physical, mental, and social functioning) were compared using paired t-tests to identify the effectiveness of the operation.

3. Complications and outcomes of surgery

The incidence and nature of complications of surgery were recorded, and percentages for both were calculated.

4. Regression and Correlation Analysis

Logistic regression analysis was performed in order to identify risk factors for post-operative complications, while linear regression was performed to analyze the relationship between continuous variables and quality of life scores. Pearson correlation coefficients were ascertained in order to look into relationships between variables.

5. Chi-square Tests

Chi-square tests were employed to determine associations between categorical variables (gender and complications, education and quality of life, smoking, and complications) with a statistical significance level at $p < 0.05$.

Presentation of Results

Study results are tabulated and presented in tables for ease and clarity. They include demographic results, GBI overall scores, patient quality of life assessment, surgical outcome assessment, logistic regression analysis for risk factors, Pearson correlation analysis, and chi-square results indicating relationships between variables.

Through a comprehensive analytical approach, the study aims not only to measure the extent of quality of life improvement after tonsillectomy but also to identify potential risk factors and complications that may impact patient outcomes. The approach provides a step-by-step, detailed proposal for evaluating the impact of surgical tonsillectomy on the quality of life of Iraqi patients with assured rigorous data collection and analysis to direct future health care practice.

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RESULTS

This table summarizes the demographic and clinical characteristics of the 120 Iraqi tonsillectomy patients. The age mean of the cohort is 26.3 years with a standard deviation of 6.5, reflecting a predominantly young adult population. Gender distribution shows a slight predominance of females (55%) compared to males (45%).

The mean height is 166.5 cm (SD = 9.1) and the mean weight is 69.3 kg (SD = 14.0), which can be utilized in order to calculate the Body Mass Index (BMI) of 23.2 (SD = 3.6), positioning the majority of this sample in a normal weight category according to WHO standards.

Education level indicates 50% of the patients are with higher education, each sharing an equal share at 25% for secondary education and primary education. In 20.8% of the cohort, smoking was witnessed, while alcohol usage is less frequent at 12.5%.

The most common indications for tonsillectomy are recurrent tonsillitis (60%) and obstructive sleep apnea (20%), and the remaining 20% is covered by other indications. This indicates a high prevalence of infectious and obstructive indications for surgery. The mean time after operation is 1.3 years, which means follow-up evaluations are quite near when the operation is performed.

Table 1: Assessment Demographics results of Iraqi patients which undergoing surgical tonsillectomy

Variable	Mean (SD)	Percentage (%)
Age (years)	26.3 (6.5)	
Sex (Male)		45
Sex (Female)		55
Height (cm)	166.5 (9.1)	
Weight (kg)	69.3 (14.0)	
Body Mass Index (BMI)	23.2 (3.6)	
Education (Primary)	30	25
Education (Secondary)	30	25
Education (Higher)	50	50
Smoking (Yes)	25	20.8
Alcohol (Yes)	15	12.5
Indications for Tonsillectomy		
- Recurrent Tonsillitis		60
- Sleep Apnea		20
- Other		20
Years Since Operation	1.3 (0.4)	

The pre-operative mean score of 43.3 (SD = 9.2) on the GBI is indicative of a moderate level of pre-surgery HRQoL. Post-operatively, the mean score increases significantly to 74.4 (SD = 7.5), reflecting a large change in patient-reported outcomes. The change highlights the effectiveness of tonsillectomy in enhancing overall health status and quality of life.

Table 2: GBI-Total Score

GBI-Total Score	Mean (SD)
Pre-Operative	43.3 (9.2)
Post-Operative	74.4 (7.5)

Patients' Quality of Life Assessment Based on a Pre-Surgical Resection Questionnaire

Pre-surgical and post-surgical quality of life are measured on three dimensions: physical health, mental health, and social functioning.

Physical health scores were higher post-operatively at 79.5 (SD = 9.4) than pre-operatively at 39.2 (SD = 12.6).

Mental well-being also improved from 44.1 (SD = 9.9) to 77.3 (SD = 7.8).

Social functioning was bettered from 49.4 (SD = 8.7) to 81.2 (SD = 6.2).

These are suggestive of dramatic post-operative improvements in all aspects of quality of life, in favor of tonsillectomy as a valuable intervention.

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Table 3: Assessment of Patients' Quality of Life According to a Pre-Surgical Resection Questionnaire

Quality of Life Indicator	Pre-Surgery (Mean, SD)	Post-Surgery (Mean, SD)
Physical Health	39.2 (12.6)	79.5 (9.4)
Mental Health	44.1 (9.9)	77.3 (7.8)
Social Functioning	49.4 (8.7)	81.2 (6.2)

The most common type of anesthesia utilized was general anesthesia, utilized in 62.5% of the cases, followed by local (25%) and regional (12.5%) anesthesia.

Duration of the operation process primarily ranged from 1 to 2 hours (58.3%), which was within the expected level of working efficiency.

Hospitalization was mostly less than or equal to 3 days (75%), confirming the safety of the procedure and the low risk of prolonged recovery.

Follow-up was typically performed within 1 to 3 months post-surgery for 66.7% of patients, hence addressing any emergent issues urgently.

Complications were largely superficial, with 75% of patients having no complications at all. Severe complications were relatively rare, with only 2.5% having severe bleeding.

Table 4: Surgical Outcome Evaluation (Type of Anesthesia Used, Duration of Surgical Procedure, Hospital Stay, Follow-up Period, Type of Complications)

Evaluation Criteria	Number (n = 120)	Percentage (%)
Total Patients Evaluated	120	100
Type of Anesthesia Used		
- General Anesthesia	75	62.5
- Local Anesthesia	30	25.0
- Regional Anesthesia	15	12.5
Duration of Surgical Procedure		
- Less than 1 hour	30	25.0
- 1 to 2 hours	70	58.3
- More than 2 hours	20	16.7
Type of Surgery		
- Elective Surgery	90	75.0
- Emergency Surgery	30	25.0
Hospital Stay		
- Less than 1 day	15	12.5
- 1 to 3 days	75	62.5
- More than 3 days	30	25.0
Follow-up Period		
- Less than 1 month	20	16.7
- 1 to 3 months	80	66.7
- More than 3 months	20	16.7
Type of Complications		
- None	90	75.0
- Minor Complications	20	16.7
- Nausea/Vomiting	10	8.3
- Fever	5	4.2
- Wound Infection	5	4.2
- Major Complications	10	8.3
- Severe Bleeding	3	2.5
- Anesthesia Reaction	2	1.7
- Organ Damage	5	4.2

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Table 5: Evaluation of Logistic Regression Results for Risk Factors

Risk Factor	Odds Ratio (95% CI)
Age (per year)	1.05 (1.02 - 1.08)
BMI (per unit)	1.10 (1.03 - 1.17)
Smoking	2.50 (1.15 - 5.42)
Education (Secondary vs. Higher)	1.90 (0.95 - 3.80)

Table 6: Pearson Correlation of All Parameters with Quality of Life

Parameter	Pearson Correlation Coefficient (r)
Age	-0.15
BMI	-0.23
Years Since Operation	0.30
Pre-Operative GBI Score	0.65
Post-Operative GBI Score	0.85

Table 7: Chi-Square Results (Sex and Complications, Education and Quality of Life, Smoking and Complications)

Variable	Chi-Square (χ^2)	p-value
Sex and Complications	4.23	0.02
Education and Quality of Life	10.12	0.003
Smoking and Complications	5.67	0.017

DISCUSSION

Tonsillectomy, or the surgical removal of the tonsils, is regularly performed to treat recurrent tonsillitis, sleep apnea, and other related conditions [11,12,13]. While the surgery is generally deemed necessary to improve physical health, it is also necessary to ascertain the impact it has on patients' quality of life (QoL), particularly children, who are the most likely to benefit from the procedure. Evaluation of QoL post tonsillectomy involves measurement of various dimensions, including physical, emotional, and social well-being, which may provide valuable information on the success of the surgery beyond that obtained from clinical outcomes alone [14,15,16,17].

Emotional well-being is also an important aspect of QoL in tonsillectomy patients. Chronic disease can lead to frustration, anxiety, and stress, particularly in children, who may struggle to deal with the effects of recurrent illnesses [18,19]. Postoperatively, the majority of patients report a significant reduction in anxiety as they no longer fear the recurrent throat infection and related complications. This emotional relief can lead to a more positive self-concept and overall improved mood. It is essential, however, to achieve such outcomes using validated QoL assessment tools, such as the Pediatric Quality of Life Inventory (PedsQL), which provides a standardized method to quantify health-related QoL according to both parents' and patients' perceptions [20,21] and From a physical health perspective, the benefits of tonsillectomy overall are to relieve symptoms of chronic tonsillitis or obstructive sleep apnea [22]. The majority of patients who undergo the procedure also experience a notable reduction in the frequency and severity of infections of the throat, which means less absenteeism from school or work [23]. Difficulty swallowing and breathing is also alleviated for most patients following surgery, which results directly in increased physical comfort. While immediate postop status may involve pain and discomfort [24], to effectively measure the post-tonsillectomy quality of life, researchers have developed a number of assessment tools specific to the surgical population. The Tonsil and Adenoid Health Status Questionnaire (TAHSQ) and General Health Questionnaire (GHQ) are both designed to elicit particular domains of health relevant to tonsil illness. These tools enable researchers and clinicians to not only quantify patient experiences but also identify areas in which further intervention or support is necessary.

CONCLUSION

Lastly, the evaluation of QoL in patients undergoing surgical tonsillectomy is essential to a complete view of the impacts of the surgery. While the objective of the surgery is to eliminate or reduce recurrent throat infections and its consequences, the impacts of the surgery extend beyond physical health. Patients experience improved emotional and social well-being, which contributes significantly to the general quality of life. Thus, clinicians need to adopt a

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comprehensive approach that encompasses patient-reported experience and clinical outcomes. Research needs to continue to be focused on the optimization of surgical technique and postoperative care, with the priority being the enhancement of QoL for those undergoing this common procedure. By placing a priority on the assessment of QoL in tonsillectomy patients, the healthcare community can be certain that interventions not only improve health issues but also promote a healthier and more satisfying life for those who suffer from tonsillar disorders.

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