

# VALIDATION OF THE KURDISH LANGUAGE VERSION OF THE STANDARDIZED COSMESIS AND NASAL OUTCOMES SURVEY (SCHNOS), APPLICATION FOR SEPTORHINOPLASTY HEALTH



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## ABSTRACT

### *Background*

The Standardized Cosmesis and Health Nasal Outcomes Survey (SCHNOS) questionnaire is a recent tool for evaluating patient satisfaction in both functional and cosmetic components of rhinoplasty. It is a reliable, steady, and corroborated patient-reported outcome measure that is not available in Kurdish

### *Objectives*

To evaluate the application of the Kurdish version of the Standardized Cosmesis and Health Nasal Outcomes Survey (SCHNOS) scale for Septorhinoplasty surgery and research

### *Materials and Methods*

conducted four centre studies to validate The Kurdish version of the scale We adhered to a strict translation procedure, including a forward and back translation and reconciliation interviews, to ensure the original content and concepts were preserved compared for patients and control groups and tailored to the demographic the instrument was intended for.

### *Results*

showed that the Kurdish version of the SCHNOS was conceptually comparable to the original English version and demonstrated high internal consistency for nasal function as an aesthetic postoperative outcome. The Spearman rank correlation analysis indicated a weak to moderate correlation between the different items, indicating that the different items measure somewhat distinct aspects of nasal function and appearance. However, the high Cronbach's alpha values suggested that the different items measure similar aspects of nasal function and appearance and can be considered a reliable scale for assessing SCHNOSE.

The results of the paired samples t-test showed significant differences between the preoperative and postoperative obstructive and aesthetic SCHNOSE scores, indicating that the observed differences are likely to be real and not simply due to random variation in the data.

### *Conclusion*

The Kurdish form of the SCHNOS demonstrates virtuous reliability and validity, coherent with the original version. Thus, it can be used as a validated questionnaire for outcome measurements for rhinoplasty. This version should be recommended to evaluate both functional and cosmetic outcomes in daily practice and rhinoplasty-related examinations.

**Keywords:** *Septorhinoplasty, patient-reported outcome measure, Standardized Cosmesis, and Health Nasal Outcomes Survey Level of Evidence: Level III.*

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## INTRODUCTION

Septorhinoplasty is the most explored surgical and researchable operation over the last three decades, corresponding and growing in popularity both universally and in the Iraq region<sup>(1-4)</sup>. In facial plastic surgery, Septorhinoplasty is a complex surgical operation, regardless of the indication of surgery, the surgeon should equilibrium between the appearance and functional change of the nose. Because nasal function and cosmetics are complementary to each other, aesthetic rhinoplasty can have functional sequelae, and vice versa)<sup>(4)</sup>. Relevant patient satisfaction through, patient-reported outcome measures (PROMS) is essential for assessment outcomes in everyday clinical practice<sup>(5)</sup>. Many available validated patient-reported outcome measures quantify either nasal obstruction or aesthetic outcome; however, few instruments evaluate both results concomitantly<sup>(6,7)</sup>.

The Standardized Cosmesis and Health Nasal Outcomes Survey (SCHNOS) questionnaire are established as a recent instrument that patients can verify for both functional and aesthetic results, it is composed of ten questions, the first four related to nasal obstruction assessment, and the fifth question is related to the psychological aspect of surgical outcome and the last four questions are related aesthetic related outcome thus it is proved to be a psychomotor investigation<sup>(1)</sup>, well applicable, and has a promising instrument to analyses spectrum of surgical methods and daily clinical practice<sup>(8)</sup>. the postoperative result, determined by patient satisfaction through validated, consistent and reliable patient report outcome measures<sup>(9,10)</sup>. There is currently, an available Arabic version but no available translation to Kurdish of the SCHNOS questionnaire<sup>(11)</sup>. Kurdish is the second most spoken language in Iraq, it is the largest ethnic minority in Iraq, comprising between 20% and 26.5% of the country's population.<sup>(12)</sup>. sociocultural adapted, patient report outcome measures should be administered in different languages and cultures. The objective of the study is to validate the Kurdish form of the novel Standardized Cosmesis and Health Nasal Outcomes Review (SCHNOS) and generalize it for clinical application.

## SUBJECTS AND METHODS

This was a prospective instrument validation study to determine the validity and reliability of a Kurdish version of the English SCHNOS scale (k-SCHNOS). The study protocol was approved by Duhok University's Institutional Review Board. the study was carried out

in four city centers the Duhok Plastic Reconstructive Surgery Teaching Hospital, Hawler Rozhhalat Teaching Hospital, Rezgary Kirkuk Teaching Hospital, and Plastic and Burn Hospital in Sulaimani, between September 10, 2021, to November 16, 2022. Following an explanation of the methods and purpose of the study, forty-eight patients who were scheduled for Septorhinoplasty who presented aesthetic problems and or with nasal obstruction/congestion and external nasal deformity for at least 20 months were included in the study,

Participant Written informed consent was obtained. All individuals were native Kurdish speakers, literate, and above 16 years of age. The exclusion criteria for all individuals were as follows: coronavirus previous infection, head/facial trauma within the last 12 weeks, adenoid hypertrophy, previous neoplastic sinus disease, and inflammatory/infectious disease during the study period.

After following international guidelines for translation and cross-cultural adaptation, the Standardized Cosmesis and Health Nasal Outcomes Survey was translated to Kurdish and back-translated to create a Kurdish version twenty patients were registered in the assessed phase to help progress the scale. Then, a test/retest phase included administering the Kurdish version of the Standardized Cosmesis and Health Nasal Outcomes Survey after 2 weeks. The Kurdish-SCHNOS scale was created by a working group entailing two bilingual English college teachers, two interpreters, 4 plastic specialists, and a Kurdish language and literature lecturer using the typical translation system. During the reconciliation -translation, plastic specialists scored each item on the scale from 5 points, representing "precise proper," to 1 point, "not proper." (Fig. 1).

The Kurdish version of the scale was applied to the study participants twice, with the second evaluation taking place 6 to 12 days after the first (test-retest phase) to assess the uniformity of the scale. Patients did not receive any treatment during this period. (Table 1).

After the decision of the final Kurdish version of SHCNOS applied with both functional and aesthetic components to forty-eight patients followed up for a one-year assessment.

IBM SPSS Statistics Desktop 20.0 Windows Multilingual assembly (CRG2LML) was used for all statistical analyses. A p-value of < 0.05 was considered statistically significant. Various statistical analyses

A p-value of  $< 0.05$  was considered statistically significant. Various statistical analyses were carried out with the application of Spearman correlation and Cronbach's alpha values.

### **Definition of the questionnaire**

The SCHNOSI is a 10-item self-rated assessment questionnaire that the patient replies using a Likert-like 0–5 scale (“no problem” to “extreme problem”) that comprises a cosmetic component (domain) of four items as well as an obstruction component of six items. It generates two scores—one for each domain—with a possible score of 100. Table 1.

### **Translation Procedure Progress Back and Forth translation**

The SCHNOS questionnaire was translated from English to Kurdish by two separate bilingual translators who are both native speakers of that language. The Kurdish questions were then translated into English once more by two separate bilingual translators who were natural English speakers.

For context and sense, the first author reviewed these two translations.

Then, utilizing the standard translation system, there were two bilinguals, two interpreters, four plastic surgeons, and a lecture of Kurdish language and literature. and combined the two preliminary Kurdish versions of each questionnaire into one. The team looked for inconsistencies with the original questionnaires and made sure that the basic concepts were upheld. The English and Kurdish SCHNOS scoring structures are displayed. Table 2

### **Recruitment of Patients**

Forty-eight adult rhinoplasty patients and 48 controls received the final Kurdish version of the SCHNOS (Table 3) prospectively. A hospital recruited patients in four city centers: the Duhok Plastic Reconstructive Surgery Teaching Hospital, Hawler Rozhhalat Teaching Hospital, Rezgary Kirkuk Teaching Hospital, and Plastic and Burn Hospital in Sulimany all in Iraq. Exclusion criteria included acute or any type of

sinusitis, non-controlled hypersensitivity, benign or malignant naso sinus tumours, severe not controlled allergic rhinitis, concurrent endoscopic sinus surgery, and a lack of Kurdish language comprehension. The control group consisted of adult patients who arrived with a primary complaint other than nasal blockage or deformity. (e.g., eyelid ptosis, traumatic and congenital ear deformity, facial acne, post-burn scalp hair loss). Written consent was obtained, and each questionnaire was filled out on the day of consultation. The final post-operatively assessment is done through the application of the same Translation process of the SCHNOS. final assessment 12 months subsequently

## **RESULTS**

Forward and backward translations in the translation process: the 2 forward translations varied from one another, which the writers reconciled and improved. Examples of this phase are shown in Table 2. There were not many differences between the back translation and the original concepts. At that point, no further alterations were necessary. The results of the distribution between the groups are, indicate good to very good internal consistency for all items, with Cronbach's alpha values ranging from 0.720 to 0.809. This suggests that the different items are measuring similar aspects of nasal function and appearance, and can be considered a reliable scale for assessing SCHNOSE, (Table 4)

The Spearman correlations between the items indicate that there is a moderate positive correlation between preoperative obstructive SCHNOSE and preoperative aesthetic SCHNOSE (Spearman's  $\rho = 0.57$ ). There is also a weak positive correlation between preoperative obstructive SCHNOSE and postoperative aesthetic SCHNOSE (Spearman's  $\rho = 0.29$ ) and between preoperative aesthetic SCHNOSE and postoperative aesthetic SCHNOSE (Spearman's  $\rho = 0.23$ ). Finally, there is a very weak positive correlation between preoperative obstructive SCHNOSE and postoperative obstructive SCHNOSE (Spearman's  $\rho = 0.18$ ), (Table 5).

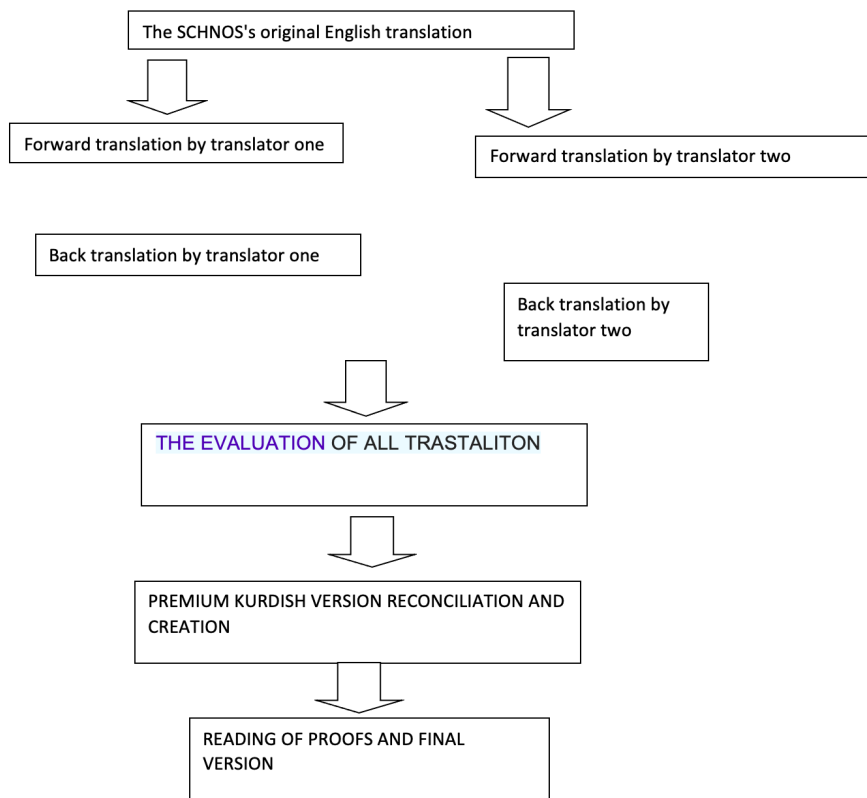


Figure 1. Translation process of the SCHNOS

Table 1. SCHNOS (Kurdish Version)

کیشیهیکی زۆر توند	کیشیهی توند	کیشیهیکی مامناوهند	کیشیهیکی سووک	کیش زۆر بچوک	کیشیه نیه	(SCHNOS)	
5	4	3	2	1	0	Having blocked or obstructed nose همبوونی لووت گیر بیان	1
5	4	3	2	1	0	Getting air through my nose during exercise وەرگرتنی ههوا له رینگهیهوه لووتم له کاتی	2
5	4	3	2	1	0	Having a congested nose - مەشوق گیرانی لووت	3
5	4	3	2	1	0	Breathing through my nose during sleep ههناسهدان له رینگهی لووتمهوه لهکاتی خهوتندا	4
5	4	3	2	1	0	Decreased mood and self-esteem due to my nose مېوونه وه ی باری ده روونی و خو نزم زانی به هوی لوتمه وه	5
5	4	3	2	1	0	The shape of my nasal tip شێوهی نوکی لووتم	6
5	4	3	2	1	0	The straightness of my nose ریک و راستی لووتم	7
5	4	3	2	1	0	The shape of my nose forms the side شێوهی لووتم له لاره	8
5	4	3	2	1	0	How well my nose suits my face تا چه ند لووتم له گه ل ده مواجوما ده گونجیت	9
5	4	3	2	1	0	The overall symmetry of my nose سیمیتری گشتی لووتم	10

**Table 2. The structures and scoring formulas of the English and Kurdish (SCHNOS)**

له ماوه‌ی مانگی رابردودا ئهمانه‌ی خواره‌وه چهند كێشه‌یهك بوونه‌ته كێشه بو ئێوه  
ته‌نها یهك بزاردنه نیشانه X تکیابه به

Item No.	Original Version (English)	Forward Translation No. 1	Forward Translation No. 2	Rationale
1	Having a blocked or obstructed nose	همبوونی لووت گیر یان	بوونی لووت گیراو یان گیراوی	Even though the two translations were the same, researchers changed the word "گیراو" for "گیر یان" as these two words have the same meaning and the last one is not a word that is familiar to patients when they talk about obstruction of their nose
2	Getting air through my nose during exercise	وه‌رگرتنی همرا له‌ ریگیه‌وه لووتم له‌ کاتی...	بهدسته‌بنانی همرا له ریگیه‌وه لووتم له‌ کاتی...	Researchers chose the first translation, as it is more accurate about the meaning of the statement. The sentence "بهدسته‌بنانی همرا له" (the direct translation of getting air through my nose) is a way of saying "وه‌رگرتنی همرا" and this second one is more understandable
3	Having a congested nose	ممشق گرژی‌بوونی لووت	ممشق گیرانی لووت	Researchers chose the last translation as it was more accurate than the initial statement
4	Breathing through my nose during sleep	هه‌ناسدان له ریگیه‌ی لووتمه‌وه له‌ کاتی خه‌مدا	هه‌ناسدان له ریگیه‌ی لووتمه‌وه له‌ کاتی خه‌مندا	Researchers discussed both translations and merged the first part of the second translation with the second part of the first translation, as doing so was more accurate with the initial statement
5	Decreased mood and self-esteem due to my nose	که‌ مپوونه‌ وه‌ ی باری ده‌ روونی وخوبه‌ که‌ م زانی به‌ هوی لووتمه‌ وه	که‌ مپوونه‌ وه‌ ی باری ده‌ روونی وخو نزم زانی به هوی لوتمه‌ وه	Researchers discussed both translations and merged the first part of the second translation with the second part of the first translation. as doing so was more accurate with the initial statement
6	Shape of my nasal tip	شێوه‌ی نوکی لووتم	شێوه‌ی سه‌ری لو وتم	Researchers chose the first translation, as it is more accurate about the meaning of the statement.
7	The straightness of my nose	ریک و راسته لووتم?	ریک و راستی لووتم	The first translation was accurate but was changed into a question by the translator. The second translation changed the sense of the statement as it placed it negatively. Researchers decided to modify the first translation as a statement and not a question and that changed the word "راستی" to "راسته" for the sentence to make sense
8	The shape of my nose from the side	شێوه‌ی لووتم له لاوه	شێوه‌ی لووتم له لایه‌وه	Researchers discussed that in Kurdish, the first translation would be clearer to patients as it included the word "له‌ لاره" (profile) that would help patients understand better the sense of the statement and for that reason merge both translations
9	How well my nose suits my face	لووتم چه‌نده له‌ گه‌ل ده‌موچاروما ده‌مگرنجیت	تا چه‌ نه‌ لووتم له گه‌ له‌ ده‌ موجاووما ده‌ گرنجیت	Researchers discussed that in Kurdish, the most accurate way of describing the statement would be to merge both translations
10	The overall symmetry of my nose	سیمتری گشتی لووتم	سیمتری گشتی لوتم	Researchers chose the first translation, as it is more accurate with the meaning of the statement.

**Table 3. Characteristics of the Participants (note \*Other diagnoses that are not part of the exclusion criteria.)**

Characteristics	Patients (n=48)	Controls (n=48)
<b>Sex</b>		
<b>Female</b>	34	30
<b>Male</b>	14	18
<b>Mean age:</b>	39.2 (SD: 12.6), y	36.8
<b>Consultation</b>		
<b>Preoperative rhinoplasty</b>	31	0
<b>Postoperative rhinoplasty</b>	17	0
<b>Post-burn scalp hair loss</b>	0	7
<b>facial acne</b>	0	9
<b>congenital ear deformity</b>	0	2
<b>Vascular malformation not involved nasal region</b>	0	6
<b>eyelid ptosis</b>	0	3
<b>Hearing loss</b>	0	2
<b>External otitis</b>	0	3
<b>Other*</b>	0	17

**Table 4. Internal consistency for all items, with Cronbach's alpha values**

	Pre/SCHNOSE-O	Pre/SCHNOSE-A	Post/SCHNOSE-O	Post/SCHNOSE-A
<b>Items</b>	0.757	0.809	0.776	0.720
<b>Alpha</b>	0.757	0.831	0.844	0.860
<b>Variance</b>	0.319	0.290	0.358	0.384

**Table 5. Spearman Correlation Between the Items Included in the SCHNOS**

	Pre/SCHNOSE-O	Pre/SCHNOSE-A	Post/SCHNOSE-O	Post/SCHNOSE-A
<b>Pre/SCHNOSE-O</b>	1.00	0.57	0.18	0.29
<b>Pre/SCHNOSE-A</b>	0.57	1.00	0.10	0.23
<b>Post/SCHNOSE-O</b>	0.18	0.10	1.00	0.71
<b>Post/SCHNOSE-A</b>	0.29	0.23	0.71	1.00

## DISCUSSION

We were able to translate, culturally adapt, and evaluate a Kurdish version of the SCHNOS questionnaire in Iraq patients who were native Kurdish speakers in this study. It was demonstrated that this Kurdish translation is conceptually comparable to the original English text. The Cronbach's alpha of the original English edition and these results are extremely comparable <sup>(1)</sup>.

In this study we compare the preoperative and postoperative obstructive and aesthetic SCHNOSE, we can use a paired samples t-test, assuming the normality of the data. assuming the null hypothesis of no difference between preoperative and postoperative scores. Therefore, we can conclude that the observed differences are likely to be real and not simply due to random variation in the data.

We adhered to a strict translation procedure that included a forward translation, a reverse translation, and reconciliation interviews that are supported by international standards <sup>(13, 14)</sup>. In addition to achieving semantic equivalence, this multistep process is crucial for ensuring that the original content and concepts are preserved and tailored to the demographic that the instrument is intended for <sup>(15)</sup>.

In Iraq, like many other countries, there are slight differences in the terms and words of Kurdish between one region and another. This is also true for Kurdish-speaking minorities in countries bordering Iraq. Achieving validation in four cities suggests that patient-reported outcome measures may be applicable in other Kurdish-speaking regions

We also determined the correlations between the items included in the Kurdish version of the SCHNOS-O and the SCHNOS-A measures, with a Spearman correlation coefficient, and the results suggest that there is some degree of association between the different items included in the SCHNOS, particularly between preoperative obstructive and aesthetic SCHNOSE. However, the correlations are generally weak to moderate, indicating that the different items are measuring somewhat distinct aspects of nasal function and appearance <sup>(16)</sup>.

SCHNOS questionnaire of Kurdish version shows high internal consistency function and aesthetic domino's as Cronbach's alpha is a measure show an optimum internal consistency for all items, with Cronbach's alpha values ranging from 0.720 to 0.809. This suggests

that the different items are measuring similar aspects of nasal function and appearance, and can be considered a reliable scale for assessing SCHNOSE. This leads to suggest that the SCHNOS is a reliable instrument for assessing nasal function and appearance, with good to very good internal consistency among the different items. The methodology used for the translation process is also a safeguard of content validity similar to another study <sup>(17)</sup>.

A review of the literature supports the improvement of the results after surgery in both structural and preservation rhinoplasty and shows high satisfaction scores in both <sup>(4, 18)</sup>. the only limitation as far as concerned in the study is the number of involved participants. However, many comparable translation studies attended the process of validation results with more limited involved participant many comparable translation studies achieved a validation process with a similar or a more limited number of participants <sup>(16-19)</sup>.

In conclusion, the Kurdish form of the SCHNOS demonstrates virtuous reliability and validity, coherent with the original version. Thus, it can be used as a validated questionnaire for outcome measurements for Septorhinoplasty. This version should be recommended to evaluate therapeutic and cosmetic, patient satisfaction in daily practice and rhinoplasty-related examinations. As well as for international research assessment.

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