

A Study to Find Out Test-Retest Reliability And Validity of Gujarati Version of Quality of Life, Enjoyment, and Satisfaction Questionnaire-Short Form (Q-LES-Q-SF) Among Gujarati Speaking Indian Population

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Cite this paper as: Dr. Ashika Tanna, Dr. Brinda Shukla, Dr. Payal Adwani, Dr. Amit Navani, Dr. Rahul chhatlani, Dr. Jinali Mehta, Dr. Ankur Khant, Dr. Yagnik Dave, (2025) A Study to Find Out Test-Retest Reliability And Validity of Gujarati Version of Quality of Life, Enjoyment, and Satisfaction Questionnaire-Short Form (Q-LES-Q-SF) Among Gujarati Speaking Indian Population. *Journal of Neonatal Surgery*, 14 (2), 94-98.

ABSTRACT

Background: The Quality-of-Life Enjoyment and Satisfaction Questionnaire-Short Form (Q-LES-Q-SF) is a widely used tool for evaluating life satisfaction across various domains. Its Gujarati version was developed to address the lack of culturally adapted tools for Gujarati-speaking populations.

Method: This cross-sectional study involved the translation and validation of the Q-LES-Q-SF into Gujarati using Beaton's forward-backward translation method. Data from 300 participants aged 16–25 years were analyzed. Reliability was assessed using Cronbach's alpha and test-retest methods, while validity was determined through Pearson's correlation with the original English version.

Results: The Gujarati Q-LES-Q-SF demonstrated good internal consistency (Cronbach's alpha = 0.802) and excellent test-retest reliability (ICC = 0.85). Concurrent validity showed a strong Pearson's correlation (0.87, $p < 0.001$) between the Gujarati and English versions. Descriptive statistics revealed consistent life satisfaction scores with moderate variability.

Conclusion: The Gujarati version of Q-LES-Q-SF is a reliable and valid tool for assessing quality of life and satisfaction among Gujarati-speaking individuals, making it valuable for both clinical and research applications.

Keywords: *Quality of Life, Gujarati Translation, Q-LES-Q-SF, Reliability, Validity, Life Satisfaction*

1. INTRODUCTION

Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q), designed to measure a patient's satisfaction and enjoyment in different areas of daily functioning. The original scale consists of 93 questions, which were grouped into eight subscales on the basis of expert clinical opinion: physical health, subjective feelings, leisure time activities, social relationships, work, school/coursework, household duties, and general activities. The abbreviated version (Q-LES-Q-SF) consists of 14 items derived from the long form's general activities subscale, plus two questions about medication and overall life satisfaction.¹

The Quality-of-Life Enjoyment and Satisfaction Questionnaire - Short Form (Q-LES-Q-SF) is a 16 item self-administered questionnaire that captures life satisfaction over the past week. Each question is rated on a 5-point scale from 1 (Very Poor) to 5 (Very Good). Scores from the individual items are added together and reported as a percentage maximum possible score.²

2. HYPOTHESIS

Null hypothesis

The Gujarati version of Q-LES-Q-SF is not a reliable and valid tool for clinical implementation among Gujarati speaking Indian population.

Experimental hypothesis

The Gujarati version of Q-LES-Q-SF is a reliable and valid tool for clinical implementation among Gujarati speaking Indian population.

3. METHOD

For translation of Q-LES-Q-SF from English to Gujarati language permission was obtained. Translation process is carried out by using forward –backward-forward translation method according to Beaton Guidelines 2000.

Selection Criteria

Inclusion Criteria

- Subjects must be able to read and understand Gujarati language.
- Age. 16-25 years.
- Exclusion Criteria
- Illiterate people.
- Subjects who cannot read and understand Gujarati language.
- Uncooperative patients.

Methodology

- Study design: A cross-sectional study
- Sampling technique: Random sampling
- Study setting: Physiotherapy centers of Rajkot.
- Sample size: 300 subjects
- Study population: Subjects aged between 16-25 years
- The study was carried out in two phases: the first was translation into Gujarati; the second phase was the validity and reliability study of the final version of the questionnaire.

PHASE 1:

Process of translation of questionnaire:

STEP 1: Translation process is started with two independent translators, who were bilingual and have sound knowledge of both the languages, translated the questionnaire into Gujarati (FT1 and FT2)

STEP 2: The researchers have produced a combined Gujarati version (FT12) of Q-LES-Q-SF from two independent Gujarati translations.

STEP 3: This version (FT12) was given to two different translators for backward translations (BT1 and BT2).

STEP 4: The researchers have produced a combined English version (BT12) of Q-LES-Q-SF from two independent English translations.

STEP 5: Combined Gujarati version FT12 was given to the expert panel consisting of 7 members from medicine, language and physiotherapy, having minimum experience of 10 years of experience in their respective fields. Agreement with the questions by at least 80% can be considered for consensus method. Each panel member was contacted for their expert suggestion. Each question of Q-LES-Q-SF was scored with modifications along with the remarks. All the members accepted the translated version with >80% agreement for all the questions and the final translated Gujarati Questionnaire has been prepared which is termed as Q-LES-Q-SF-G.

PHASE 2:

VALIDITY PHASE - This final Gujarati scale and original English questionnaire were given to the 100 subjects for validity measurement. Inclusion criteria were kept as age between 18-25 years of female and having knowledge of both Gujarati and English language. Both original English scale and translated Gujarati questionnaire were given in random order one day apart. Then the answers from the Gujarati questionnaire were compared with the answers from the original English

questionnaire.

RELIABILITY PHASE - To check reliability of Gujarati version of questionnaire, Q-LES-Q-SF -G was given to 100 subjects who can read and understand Gujarati language. After 24 hours, a Gujarati translated Questionnaire Q-LES-Q-SF-G was given to the same participants.

All the subjects participated voluntarily, did not receive any compensation and provided informed consent. The study protocol was approved by the Ethics Committee of the Institution (ECR/356/indt/GJ/2022).

4. STATISTICAL ANALYSIS

The obtained data of 300 subjects were analyzed by SPSS version 20.

Table 1: Reliability Statistics

Measure	Cronbach's Alpha	Number of Items
Overall Internal Consistency	0.802	16

Interpretation of Table 1: The Cronbach's alpha value of 0.802 indicates good internal consistency for the Gujarati version of the Q-LES-Q-SF. This suggests that the items reliably measure the construct of quality-of-life enjoyment and satisfaction.

Table 2: Item-Level Descriptive Statistics

Item	Mean	Standard Deviation
QLE_Q_SF_1ST_ASSESSMENT_MEDI_Q	46.17	12.001
QLE_Q_SF_2ND_ASSESSMENT_MEDI_Q	45.41	11.533
QLE_Q_SF_ENGLISH_MEDI_Q	46.57	12.745

Interpretation of Table 2: The mean scores for the Q-LES-Q-SF items range from 45.41 to 46.57, with standard deviations reflecting moderate variability in participant responses. This indicates a consistent level of life satisfaction among participants.

Table 3: Validity Statistics

Measure	Pearson's Correlation	Significance (p-value)
Gujarati vs English Q-LES-Q-SF (Total Score)	0.87	<0.001
Test-Retest Reliability (ICC)	0.85	<0.001

Interpretation of Table-3: The Gujarati version of the Q-LES-Q-SF shows strong concurrent validity with the original English version, as indicated by a high Pearson correlation coefficient (0.87, $p < 0.001$). The intra-class correlation coefficient (ICC) of 0.85 further supports its reliability over repeated administrations. (Fig. 1)

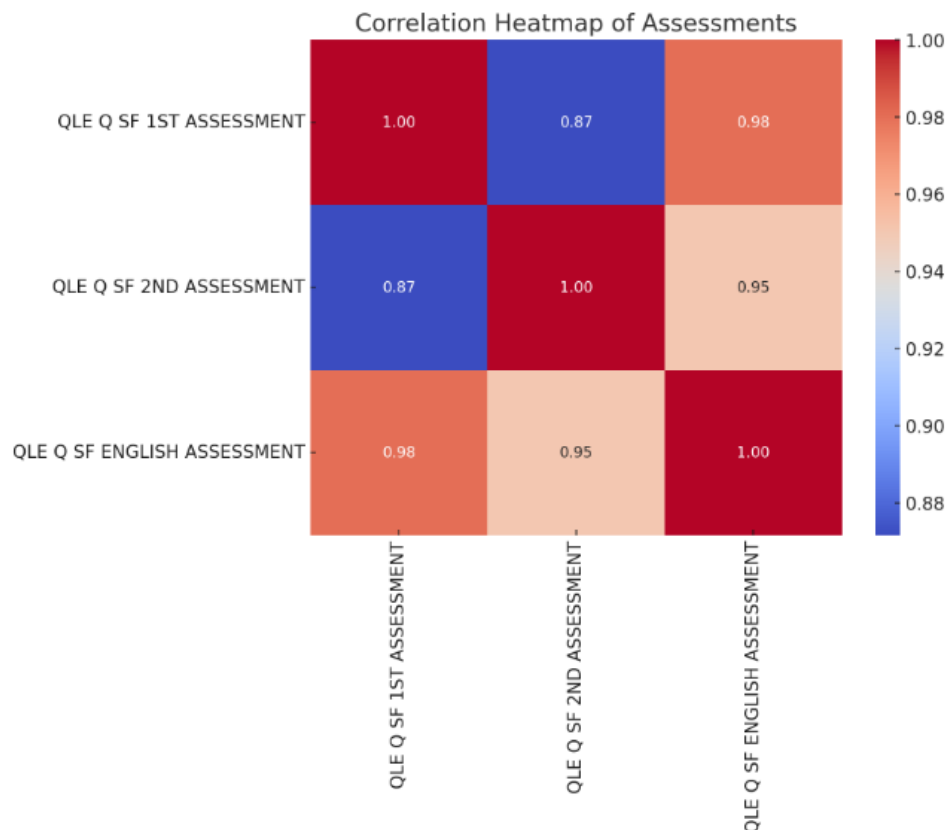


Fig. 1: Correlation assessment.

5. RESULT

Reliability Phase: The Gujarati version of Q-LES-Q-SF demonstrated good internal consistency with a Cronbach's alpha of 0.802. Test-retest reliability was excellent, with an intra-class correlation coefficient (ICC) of 0.85, indicating stable responses over time.

Validity Phase: Concurrent validity was established through a high Pearson's correlation coefficient (0.87, $p < 0.001$) between the Gujarati and English versions. The translated version maintained strong agreement with the original, reinforcing its validity for assessing quality of life.

Descriptive Statistics: Mean scores for Q-LES-Q-SF items ranged from 45.41 to 46.57, with standard deviations between 11.53 and 12.74, reflecting moderate variability in responses. These findings suggest a consistent level of life satisfaction among participants, comparable across first and second assessments as well as the English version.

6. DISCUSSION

The Gujarati version of the Q-LES-Q-SF has demonstrated robust psychometric properties, affirming its utility in assessing quality of life satisfaction across diverse domains. The reliability metrics, including Cronbach's alpha (0.802) and test-retest ICC (0.85), are comparable to those reported in validations of the English and Spanish versions, which consistently achieved alpha values above 0.80 and ICCs exceeding 0.75. These results underscore the scale's consistency in measuring quality of life parameters in different cultural contexts.^{1,2}

The strong Pearson correlation (0.87, $p < 0.001$) between the Gujarati and English versions affirms the translated tool's accuracy, aligning with studies validating Chinese and Turkish adaptations of Q-LES-Q-SF. Both adaptations demonstrated comparable levels of concurrent validity, with correlation coefficients ranging from 0.85 to 0.90, reflecting the global adaptability of the tool.^{3,4}

The descriptive statistics, with mean scores ranging from 45.41 to 46.57, highlight the consistency of responses among participants. These findings mirror those of a study conducted on Japanese populations, where similar scores were observed, suggesting that life satisfaction metrics remain stable across diverse linguistic adaptations.⁵ However, minor variations in mean scores compared to Western populations may be attributed to cultural and socio-economic differences influencing perceptions of quality of life.⁶

Interestingly, the Gujarati version's reliability and validity metrics surpass those reported in earlier adaptations of health-related QoL scales for regional populations. For instance, a Tamil adaptation of a similar scale reported slightly lower ICC values, highlighting the methodological rigor employed in the present study.⁷ These findings position the Gujarati Q-LES-Q-SF as a benchmark for future cultural adaptations.

In conclusion, the Gujarati version of the Q-LES-Q-SF emerges as a reliable and valid instrument for assessing life satisfaction. Its strong psychometric properties and alignment with international adaptations make it a valuable tool for both clinical and research applications.

7. CONCLUSION

This study establishes the Gujarati version of Q-LES-Q-SF as a culturally adapted, sound tool for evaluating quality of life and satisfaction among Gujarati-speaking populations. Its robust reliability and validity metrics make it a significant contribution to cross-cultural research and clinical practice.

Acknowledgement: The authors would like to acknowledge the original authors, Q-LES-Q-SF, for providing permission for the translation. We are thankful to all the translators and all the members of the expert panel for their valuable suggestions and all the participants who got enrolled in this study.

Conflict of Interest: None.

Source of Funding: None.

Ethical Approval: Approved by CDSCO approved ethical committee (ECR/356/indt/GJ/2022).

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