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Cross-Cultural Adaptation and Psychometric Evaluation of the Turkish Version of the Perception of Quality in Anaesthesia (PQA)-10

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Research Article

Keywords: PQA-10, anaesthesia, patient experience, cross-cultural adaptation, psychometric validation

Posted Date: November 24th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11231195/v1

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Additional Declarations: No competing interests reported.

Abstract

Background

The Perception of Quality in Anaesthesia (PQA)-10 is a brief patient-reported experience measure developed to assess patients' experiences with anaesthesia care. This study aimed to adapt the PQA-10 into Turkish and evaluate the validity and reliability of the Turkish version.

Materials and Methods

This cross-sectional methodological study included 250 patients. Cross-cultural adaptation involved forward translation, back-translation, expert panel review, and pilot testing in 25 patients. The Turkish PQA-10 was administered face-to-face on the first postoperative day and repeated by telephone on the third postoperative day. Internal consistency, item analyses, construct validity, and test–retest reliability were evaluated. According to the original scoring recommendations, item 4 was excluded from the total score and psychometric analyses because of its different response structure, and item 5 was reverse-coded.

Results

The overall Cronbach's alpha coefficient was 0.794. Confirmatory factor analysis showed significant path coefficients for Factors 1 and 3 ($p < 0.001$), whereas the path coefficient of item 6 in Factor 2 was not significant ($p = 0.085$). Cronbach's alpha coefficients for Factors 1, 2, and 3 were 0.808, 0.172, and 0.881, respectively. Model fit indices were CFI = 0.990, TLI = 0.985, NFI = 0.986, and IFI = 0.990. Significant differences were observed between test and retest measurements for Factor 2 and the total score (both $p < 0.001$).

Conclusions

The Turkish PQA-10 showed acceptable overall psychometric performance and generally retained the original factor structure. However, the low internal consistency and temporal variability of Factor 2 indicate that this domain should be interpreted cautiously.

1. Introduction

Healthcare quality is currently assessed not only in terms of clinical outcomes and complication rates but also through patients' experiences of the care process. With the increasing emphasis on patient-centred care, evaluation of patients' experiences during healthcare delivery has become an important means of identifying both the quality of care provided and areas requiring improvement. Patient-reported experience measures (PREMs) enable patients to evaluate healthcare delivery from their own perspective and thereby contribute to the assessment of patient-centred care [1, 2].

Anaesthesia care constitutes an important component of the overall healthcare experience. The adequacy of information provided during the preoperative period, communication with the anaesthesia team, the patient's sense of safety, perioperative comfort, and postoperative problems such as pain, nausea, and vomiting may all influence patients' perceptions of anaesthesia care. Therefore, assessment of the quality of anaesthesia services should include not only clinical outcomes but also patients' experiences of the care they receive [2].

Various instruments have been developed to assess patient experience with anaesthesia care [3–5]. However, some existing instruments may have limited applicability in routine clinical practice because of their length or their focus on a specific phase of the perioperative period. This highlights the need for brief and practical instruments that can assess different stages of anaesthesia care from the patient's perspective.

The Perception of Quality in Anaesthesia-10 (PQA-10) is a brief 10-item patient-reported measure developed in Switzerland by Kesting et al. to assess patients' experiences of anaesthesia care. The instrument evaluates clinically relevant domains including preoperative consultation and information, adverse experiences related to anaesthesia, postoperative pain and nausea/vomiting, and the communication and professional qualities of the anaesthesia team [6] [Supplementary Material 1]. Owing to its concise structure, the PQA-10 was designed for use in both clinical practice and research to evaluate the quality of anaesthesia care.

Direct translation alone is insufficient when an instrument is to be used in a different language and cultural setting. The items must be understandable to the target population while preserving the meaning and underlying concepts of the original instrument. Therefore, instruments intended for use across cultures should undergo a systematic cross-cultural adaptation process, and their psychometric properties should be re-evaluated in the target population [7, 8].

There is a need for a brief and standardised instrument to assess experiences of anaesthesia care among Turkish-speaking patients. Adapting the PQA-10 into Turkish may enable standardised evaluation of these experiences and facilitate assessment of care quality from the patient perspective. A literature review identified no Turkish version of the PQA-10 whose validity and reliability had been evaluated in Turkish-speaking patients. Therefore, this study aimed to perform a cross-cultural adaptation of the PQA-10 into Turkish and to evaluate the psychometric properties of the Turkish version.

2. Materials and methods

The study was approved by the Clinical Research Ethics Committee of Sakarya University Faculty of Medicine on 18 November 2025 (approval no. 634). The study was conducted in accordance with the Declaration of Helsinki, and written informed consent was obtained from all participants. Written permission to

adapt the PQA-10 into Turkish and evaluate its psychometric properties was obtained from the developers of the instrument.

2.1.Linguistic and cross-cultural adaptation of the PQA-10

The linguistic and cross-cultural adaptation of the Turkish version of the PQA-10 was conducted in accordance with the Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN) approach and included forward translation, synthesis of the translations, back-translation, expert panel review, and pilot testing [7]. First, the original English version was translated independently into Turkish by two translators. One translator was a healthcare professional familiar with anaesthesiology terminology, whereas the other was a language specialist working outside the medical field. The two Turkish translations were compared by the research team in terms of linguistic, semantic, and conceptual equivalence, and a reconciled Turkish draft was produced by consensus. This draft was then independently back-translated into English by two language specialists who were blinded to the original instrument and had no access to the original version. The back-translations were compared with the original English version to identify any semantic shifts, conceptual discrepancies, or cultural incompatibilities. The Turkish draft was subsequently reviewed by an expert panel consisting of two anaesthesiologists and two language specialists. The panel evaluated each item for semantic equivalence, clarity, grammatical accuracy, cultural appropriateness, and representation of the intended construct. Revisions were made according to the expert recommendations, and the pilot version was finalised.

Pilot testing was conducted in 25 patients who met the eligibility criteria. Participants were asked to evaluate the clarity of the items, appropriateness of the response options, and presence of any ambiguous expressions. No changes were required after pilot testing, and these patients were not included in the main psychometric analysis. The final Turkish version of the PQA-10 was established based on the expert panel review and pilot testing. The Turkish version of the questionnaire used in this study was specifically adapted for the purposes of the present study and has not been previously published elsewhere [Supplementary Material 2].

2.2.Sample size

In scale adaptation and factor analysis studies, a commonly used rule of thumb is to include at least 5–10 participants per item analysed [9]. Although the PQA-10 consists of 10 items, item 4 has a different response structure and was therefore excluded from the psychometric total score and factor analyses. To obtain more stable factor solutions, allow item-level analyses, and compensate for potential participant loss, a minimum sample of 200 patients was targeted. The main psychometric analyses were completed using data from 250 patients. All 250 patients who completed the postoperative day 3 assessment were included in the test–retest reliability analysis.

2.3.Participants and sampling

The study population consisted of patients undergoing elective surgery under general or regional anaesthesia in the Central Operating Theatre of Sakarya Training and Research Hospital between 1 January 2026 and 1 April 2026. Eligible patients were enrolled using consecutive sampling.

Patients were eligible if they were aged > 18 years, agreed to participate, had an American Society of Anesthesiologists (ASA) physical status of I–III, underwent surgery under general or regional anaesthesia, were able to communicate in Turkish, and were capable of understanding and responding to the questionnaire items. Patients with ASA physical status IV–V, those undergoing procedures under sedoanalgesia alone, those requiring intensive care unit follow-up, those unable to communicate in Turkish, those with cognitive or communication impairment preventing completion of the questionnaire, and those whose postoperative clinical condition was unsuitable for data collection were excluded.

2.4.Data collection

Eligibility was assessed during the postoperative period. Patients who agreed to participate were informed about the purpose and procedures of the study, and written informed consent was obtained. Informed consent and the first assessment were completed on postoperative day 1 while the patients were being followed on the surgical ward. Age, sex, educational status, ASA physical status, type of anaesthesia, and surgical specialty were recorded by the researcher using a standardised data collection form. The Turkish PQA-10 was administered face-to-face by the same researcher on postoperative day 1 while the patient was clinically stable on the surgical ward. The questionnaire items were read aloud to participants without providing any guidance that could influence their responses. For test–retest reliability, the Turkish PQA-10 was re-administered by the same researcher via telephone on postoperative day 3. All 250 patients who completed the first assessment were successfully contacted and completed the second assessment. Test–retest analyses were therefore based on paired data from all 250 participants. No participant was unreachable, unable to complete the interview, or clinically unsuitable for the second assessment.

2.5.Scoring of the PQA-10

The Perception of Quality in Anaesthesia-10 (PQA-10) is a 10-item instrument developed to assess patients' experiences of anaesthesia care. Items 2, 3, 5, 7, 8, 9, and 10 are scored on a five-point Likert scale with the response options 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree. For items 1 and 6, the response options are 1 = very dissatisfied, 2 = dissatisfied, 3 = neither satisfied nor dissatisfied, 4 = satisfied, and 5 = very satisfied.

Item 4 applies only to patients receiving regional anaesthesia or sedation and has a different response structure. It was therefore excluded from the total score and factor analyses. Item 5 is reverse-worded and was reverse-coded before analysis. The total score derived from the remaining nine items ranges from 9 to 45, with higher scores indicating a more positive patient experience of anaesthesia care.

In the original development study, the PQA-10 can be evaluated both as a total score and across three subscales: communication during the pre-anaesthesia consultation (items 1–3), side effects and adverse events of anaesthesia (items 5–6), and team professionalism/interpersonal skills (items 7–10).

2.6.Statistical analysis

Statistical analyses were performed using R version 4.5.0 and JASP version 0.97.1. Confirmatory factor analysis (CFA) was conducted in JASP to verify the factor structure of the instrument. The CFA model was estimated using the weighted least squares mean and variance adjusted (WLSMV) estimator with robust standard errors through the lavaan framework implemented in the JASP structural equation modelling module.

Internal consistency was assessed using Cronbach's alpha. Normality was evaluated with the Kolmogorov–Smirnov test. The Wilcoxon signed-rank test was used to compare postoperative day 1 and day 3 measurements for dependent variables that were not normally distributed. Continuous variables are presented as mean ± standard deviation and median (minimum–maximum), whereas categorical variables are presented as frequency and percentage.

In accordance with the original scale structure, item 4 was excluded from factor analysis because of its different response format, and the reverse-worded item 5 was recoded before analysis. Test–retest reliability was examined by evaluating the association between total scores obtained from the postoperative day 1 and day 3 administrations of the Turkish PQA-10, and a correlation coefficient was calculated. A p value < 0.05 was considered statistically significant.

3. Results

A total of 250 patients were included. The mean age was 51.9 ± 17.0 years; 51.6% were male (n=129) and 48.4% were female (n=121). According to ASA physical status, 14.0% of patients were ASA I (n=35), 64.8% were ASA II (n=162), and 21.2% were ASA III (n=53). Regarding marital status, 77.2% were married (n=193), 21.6% were single (n=54), and 1.2% were widowed (n=3). Primary school graduates constituted the largest educational group (39.6%, n=99), followed by high school graduates (27.2%, n=68), bachelor's degree graduates (13.2%, n=33), middle school graduates (8.8%, n=22), participants with no formal education (6.4%, n=16), associate degree graduates (3.6%, n=9), and master's degree graduates (1.2%, n=3). Regional anaesthesia was administered to 51.6% of patients (n=129), and general anaesthesia to 48.4% (n=121). Orthopaedic surgery accounted for 38.0% of procedures (n=95), whereas 62.0% were performed in other surgical specialties (n=155) (Table 1).

CFA was performed using the WLSMV estimator with robust standard errors. All path coefficients within Factors 1 and 3 were statistically significant ($p<0.05$), whereas the path coefficient for item 6 within Factor 2 was not statistically significant (Figures 1 and 2). Cronbach's alpha was 0.808 for Factor 1, indicating good internal consistency; 0.172 for Factor 2, indicating poor internal consistency; and 0.881 for Factor 3, indicating good internal consistency. The overall Cronbach's alpha coefficient of the instrument was 0.794, indicating acceptable internal consistency (Table 2).

The PNFI threshold was 0.5, whereas a threshold of 0.9 was used for the other fit indices. Based on these thresholds, the model demonstrated good fit (Table 3).

For the first assessment, the mean and median scores were 10.85 and 12 for communication during the pre-anaesthesia consultation (Factor 1), 8.72 and 9 for side effects and adverse events of anaesthesia (Factor 2), and 16.58 and 16 for team professionalism/interpersonal skills (Factor 3), respectively. The mean total PQA-10 score was 36.15 and the median was 37. At retest, the corresponding mean and median scores were 11.02 and 12 for Factor 1, 5.48 and 5 for Factor 2, and 16.63 and 16 for Factor 3. The mean total retest score was 33.12 and the median was 33 (Table 4).

No statistically significant difference was observed between the median test and retest scores for communication during the pre-anaesthesia consultation (Factor 1) ($p=0.128$); the median score was 12 at both assessments. In contrast, a significant difference was observed for side effects and adverse events of anaesthesia (Factor 2) ($p<0.001$), with the median score decreasing from 9 at test to 5 at retest. No significant difference was observed for team professionalism/interpersonal skills (Factor 3) ($p=0.588$), with a median score of 16 at both assessments. The total PQA-10 score also differed significantly between test and retest ($p<0.001$), decreasing from a median of 37 to 33 (Table 5).

4. Discussion

In this study, the PQA-10 underwent cross-cultural adaptation into Turkish, and the psychometric properties of the Turkish version were evaluated in adult patients undergoing elective surgery. The main findings showed that the Turkish PQA-10 had acceptable internal consistency at the total-score level and generally retained the original three-factor structure. The communication during the pre-anaesthesia consultation and team professionalism/interpersonal skills subscales showed good internal consistency and strong factor loadings, whereas the second factor assessing side effects and adverse events of anaesthesia demonstrated poor internal consistency. In addition, Factors 1 and 3 remained relatively stable in the test–retest assessment, whereas Factor 2 and, consequently, the total PQA-10 score changed significantly. These findings support the overall psychometric structure of the Turkish PQA-10 but indicate that the second subscale should be interpreted with caution.

Assessment of patient experience has become an increasingly important component of quality measurement in healthcare. Patient-reported experience measures (PREMs) are designed to capture how patients experience the care process directly from their own perspective [1]. In perioperative care, patient experience encompasses multiple dimensions, including information provision, communication, expectations, interactions with healthcare professionals, coordination of care, physical comfort, and postoperative support [10, 11]. In their comprehensive 2024 review, Mickan et al. identified realistic expectations, accurate information, consistent communication, and individualised care as key components of the elective perioperative care experience [10]. Similarly, a recent systematic review of surgical PREMs identified communication and interaction, preoperative information, care coordination, and postoperative support as core elements of patient experience [11]. Psychometrically sound patient-reported instruments that are practical for routine clinical use are therefore needed to assess peri-anaesthetic experience.

This need is also supported by recent systematic evaluations. In a COSMIN-based systematic review, Huang et al. examined 26 studies evaluating 16 different PREMs for peri-anaesthesia patient experience. Although the available instruments varied in terms of content validity, structural validity, internal consistency, and reliability, the Patient Satisfaction with Perioperative Anesthetic Care Questionnaire (PSPACq), Perception of Quality in Anesthesia (PQA),

Sindhvananda General Anesthesia Satisfaction Questionnaire, and Daycare Anesthesia Satisfaction Questionnaire were among the instruments considered to have moderate-to-high-quality evidence for adequate content validity and internal consistency [12]. Nevertheless, the authors emphasised that evidence regarding cross-cultural validity and other measurement properties in different populations remains incomplete. In this context, evaluation of the psychometric properties of the PQA-10 in Turkish-speaking patients addresses an important gap in the current peri-anaesthesia PREM literature.

During development of the PQA-10, Kesting et al. investigated components of high-quality anaesthesia care from the patient perspective and developed a brief three-factor instrument representing communication during the pre-anaesthesia consultation, side effects and adverse events of anaesthesia, and the interpersonal and professional skills of the anaesthesia team. The original study demonstrated good fit for the three-factor model and showed that, despite its brevity, the PQA-10 could assess different dimensions of peri-anaesthetic care [6]. In cross-cultural adaptations, it is important to reassess the psychometric properties of a translated or culturally adapted instrument in the target population [8, 13]. In the present study, CFI and TLI values of 0.990 and 0.985, respectively, support the general preservation of the original three-factor structure in the Turkish version.

Recent adaptation studies of anaesthesia satisfaction instruments have shown that the original factor structure is not always preserved after cultural adaptation. In the Turkish version of the Iowa Satisfaction with Anesthesia Scale (ISAS-T), Saltalı et al. evaluated 210 patients, confirmed the original 11-item unidimensional structure in the Turkish population, and reported a Cronbach's alpha of 0.80 [14]. In contrast, the Brazilian adaptation of the ISAS in 127 patients yielded a three-factor structure that differed from the original model, with composite reliability coefficients of 0.87, 0.58, and 0.43; the authors also reported limited sensitivity for assessing satisfaction in patients under deep sedation [15]. More recently, a 2026 Turkish adaptation of the Heidelberg Perianesthesia Satisfaction Scale involving 455 patients failed to confirm the original 38-item, five-factor structure, resulting in a 21-item, three-factor Turkish version [16]. Similarly, in the Turkish Daycare Anesthesia Satisfaction Questionnaire (DAS-T) study of 560 patients, overall internal consistency and test–retest reliability were high, whereas confirmatory factor analysis provided only partial support for the original four-factor structure [17]. Against this background, the general preservation of the original three-factor structure of the PQA-10 in the Turkish version supports its cross-cultural structural stability.

Higher internal consistency coefficients may be reported for some peri-anaesthesia satisfaction instruments depending on their length and structure. Cronbach's alpha was 0.80 in the Turkish ISAS study [14], 0.929 in the original DAS study [3], and 0.971 in the recent DAS-T study [17]. In the present study, the overall Cronbach's alpha coefficient of the Turkish PQA-10 was 0.794, indicating acceptable internal consistency. However, Cronbach's alpha is influenced by the number of items and may increase with longer scales. Therefore, the internal consistency of a brief, multidimensional instrument such as the PQA-10, in which the total score is based on nine items, should not be compared with longer instruments solely on the basis of the magnitude of Cronbach's alpha.

When the subscales were considered separately, Factor 1, representing communication during the pre-anaesthesia consultation, showed good internal consistency with a Cronbach's alpha of 0.808. This finding is consistent with the contemporary perioperative patient-experience literature. Mickan et al. identified consistent communication and accurate information as core components of the elective perioperative care experience [10]. A recent systematic review of surgical patient experience likewise identified communication with healthcare professionals and preoperative information as recurring key themes across studies [11]. These findings are also consistent with earlier landmark instruments in the field, including the EVAN-G, Heidelberg Peri-anaesthetic Questionnaire, and Leiden Perioperative Care Patient Satisfaction Questionnaire [4, 5, 18]. Thus, the strong internal consistency of the communication factor in the Turkish PQA-10 supports the role of communication and information provision as central components of peri-anaesthetic experience across cultural settings.

Factor 3, representing team professionalism and interpersonal skills, had the highest internal consistency in our study, with a Cronbach's alpha of 0.881. The high factor loadings of the items in this domain also suggest that they strongly represent a common construct. The way healthcare professionals approach patients, establish trust, listen to concerns, and behave professionally is an important component of perioperative patient experience. These findings are consistent with previous satisfaction instruments. In the Heidelberg Peri-anaesthetic Questionnaire, trust and atmosphere and the manner in which patients were treated by staff were identified as separate dimensions [5]. In the LPPSq, the "staff–patient relationship" emerged as an independent dimension with high internal consistency, and both information provision and the staff–patient relationship were reported as major determinants of perioperative patient satisfaction [18]. Contemporary literature continues to identify communication, information provision, and interactions with healthcare professionals as central elements of perioperative patient experience [10, 11].

In contrast, the Cronbach's alpha coefficient of 0.172 for Factor 2, which assesses side effects and adverse events of anaesthesia, and the non-significant factor loading of item 6 warrant careful interpretation. The fact that this factor consists of only two items is relevant, because the use of Cronbach's alpha for two-item scales is debated, and the Spearman–Brown coefficient has been suggested as a more appropriate reliability estimate in such settings [19]. Nevertheless, the very low alpha coefficient suggests that these two items may not form a sufficiently homogeneous construct in the Turkish patient population. Moreover, although postoperative pain and nausea/vomiting both represent adverse peri-anaesthetic experiences, they may differ in their clinical characteristics and temporal course. This may have contributed to the low internal consistency observed for Factor 2 and indicates that results from this subscale should be interpreted cautiously.

Similar subscale-level issues reported in cross-cultural adaptation studies are relevant to this interpretation. In the Brazilian ISAS study, despite successful overall adaptation, composite reliability remained at 0.580 and 0.428 for two of the three identified factors [15]. In the Turkish DAS-T study, despite an overall Cronbach's alpha of 0.971 and an ICC of 0.988, CFI and TLI values for the original four-factor model were 0.83 and 0.81, respectively, and the authors recommended cautious interpretation of the structural validity findings [17]. Likewise, the original five-factor structure was not retained in the Turkish Heidelberg study [16]. These findings illustrate that favourable psychometric performance at the total-score level does not necessarily imply equivalent performance across all subscales. Accordingly, the psychometric performance of Factor 2 should be considered separately from that of the overall instrument, and results should be interpreted cautiously when this domain is used as an independent subscale.

The combination of high overall model-fit indices and low internal consistency for Factor 2 may initially appear contradictory. However, structural validity and internal consistency assess different psychometric properties. Good overall CFA fit does not require each individual subscale within the model to demonstrate high internal consistency. A recent systematic review of surgical PREMs similarly showed that, although internal consistency was generally adequate across available instruments, the evidence for other psychometric properties was more variable [11]. Therefore, evaluation of the Turkish PQA-10 should consider overall instrument performance, factor structure, and the reliability of individual factors separately.

In the test–retest assessment, no significant change was observed between postoperative days 1 and 3 for communication during the pre-anaesthesia consultation or team professionalism/interpersonal skills, and the correlations between the two assessments were 0.70 and 0.65, respectively. In contrast, the median score for Factor 2 decreased from 9 to 5, and the total PQA-10 score decreased from 37 to 33; the correlation between the two assessments for Factor 2 was weak and negative. Because assessment of test–retest reliability assumes that the construct being measured remains stable between repeated measurements [13], the observed change in Factor 2 may not be attributable solely to measurement error or poor temporal reliability. Previous work has shown that surgical and postoperative outcomes such as pain and physical discomfort may influence satisfaction with anaesthesia and that test–retest assessment can be affected by events occurring between measurements [5]. Because clinical experiences such as postoperative pain, nausea, and vomiting may change during the early postoperative period, at least part of the difference between day 1 and day 3 measurements may reflect genuine temporal changes in patient experience rather than measurement error alone. This highlights the importance of considering the temporal stability of the construct when interpreting test–retest findings for clinically dynamic domains.

Cross-cultural adaptation involves more than linguistic translation; it also requires preservation of semantic, conceptual, and experiential equivalence in the target culture together with reassessment of measurement properties [8, 13]. Although the general preservation of the original three-factor structure of the PQA-10 in our study supports cross-cultural structural validity, the findings for Factor 2 demonstrate that linguistic equivalence does not necessarily ensure identical psychometric performance across all domains.

An important characteristic of the PQA-10 is its brevity. Earlier anaesthesia satisfaction instruments such as the EVAN-G, Heidelberg questionnaire, and DAS provide more detailed assessment of perioperative experience but contain a larger number of items [3–5]. The PQA-10 evaluates key domains using a limited number of items developed from the patient perspective [6]. In a recent systematic review, the PQA was among the more strongly recommended peri-anaesthesia PREMs [12], supporting its potential utility in clinical and research settings despite its concise structure. The brief and easily administered format of the PQA-10 may therefore offer a practical advantage for assessing perioperative patient experience.

5. Limitations

This study has several limitations. First, it was conducted at a single centre, and most participants were classified as ASA II; therefore, the generalisability of the findings to patients at higher perioperative risk or to different healthcare settings may be limited. Second, the distribution of surgical specialties was heterogeneous. Third, the use of different modes of administration for the test and retest assessments, together with the possibility that the experiences captured particularly by Factor 2 may genuinely change during the postoperative period, complicates interpretation of temporal reliability. Fourth, the use of a correlation coefficient rather than an intraclass correlation coefficient to evaluate absolute agreement in the test–retest assessment should be considered a limitation. Finally, because Factor 2 consists of only two items and demonstrated poor internal consistency, caution is warranted when interpreting this factor as an independent subscale.

6. Conclusion

In conclusion, the Turkish version of the PQA-10 demonstrated acceptable internal consistency at the total-score level and generally retained the original three-factor structure. The communication during the pre-anaesthesia consultation and team professionalism/interpersonal skills domains showed good internal consistency and relative temporal stability. In contrast, the low internal consistency and variability between postoperative days 1 and 3 observed for the side effects and adverse events domain indicate that findings from this subscale should be interpreted with caution. Further multicentre studies including diverse surgical populations are needed to confirm the psychometric performance and generalisability of the Turkish PQA-10.

Declarations

There is no conflict of interest between these authors. This article was not financially supported by any institution.

Authors' contributions: SS contributed to conceptualization, data curation, formal analysis, and drafting of the manuscript. HK contributed to data curation, formal analysis, visualization, and critical revision of the manuscript. FS contributed to conceptualization, methodology, supervision, and critical revision of the manuscript. All authors read and approved the final manuscript.

Acknowledgments: Declaration of generative AI and AI-assisted technologies during the preparation of this work, the authors used (Chat-GPT 5.6 Sol) in order to langue editing. After using this service, the authors reviewed and edited the content as needed and takes full responsibility for the content of the publication.

Funding Declaration: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Data availability: The data generated and analysed during this study are not publicly available because of privacy and ethical restrictions. Data may be made available from the corresponding author upon reasonable request and subject to institutional and ethical approval.

Ethics approval and consent to participate: The study protocol was approved by the Sakarya University Scientific Research Ethics Committee (approval reference: Ref: 18.11.2025-634), and administrative permissions were obtained from the participating institutions. Written informed consent was obtained from all participants before data collection. All procedures were conducted in accordance with the Declaration of Helsinki and applicable institutional guidelines. Participant data were coded and handled confidentially.

Consent for publication: Not applicable.

Competing interests: The authors declare no competing interests.

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Tables

Table 1. Demographic and clinical characteristics of the participants (n=250)

Variable	Value
Age (years)	51.9 ± 17.0
Sex	
Male	129 (51.6%)
Female	121 (48.4%)
ASA physical status	
ASA I	35 (14.0%)
ASA II	162 (64.8%)
ASA III	53 (21.2%)
Marital status	
Married	193 (77.2%)
Single	54 (21.6%)
Widowed	3 (1.2%)
Educational level	
Primary school	99 (39.6%)
Middle school	22 (8.8%)
High school	68 (27.2%)
Associate degree	9 (3.6%)
Bachelor’s degree	33 (13.2%)
Master’s degree	3 (1.2%)
No formal education	16 (6.4%)
Type of anesthesia	
Regional anesthesia	129 (51.6%)
General anesthesia	121 (48.4%)
Type of surgery	
Orthopedic surgery	95 (38.0%)
General surgery	71 (28.4%)
Neurosurgery	26 (10.4%)
Urology	24 (9.6%)
Other	34 (13.6%)

ASA: American Society of Anesthesiologists Physical Status Classification.

Data are presented as n (%), except age, which is presented as mean ± standard deviation.

Table 2. Confirmatory factor analysis results for the PQA-10

		β^1 (95% CI)	SE	β^2 (95% CI)	z	p	R^2	Cronbach's alpha
Factor 1	Q1	1 (1: 1)	---	0.931 (0.89: 0.971)	---	---	0.866	0.808
	Q2	1 (0.93: 1.07)	0.036	0.931 (0.899: 0.963)	27.890	**<0.001**	0.867	
	Q3	0.836 (0.767: 0.905)	0.035	0.778 (0.721: 0.835)	23.730	**<0.001**	0.605	
Factor 2	Q5	1 (1: 1)	---	0.212 (0.01: 0.413)	---	---	0.045	0.172
	Q6	3.601 (-0.494: 7.695)	2.089	0.762 (0.321: 1.204)	1.724	0.085	0.581	
Factor 3	Q7	1 (1: 1)	---	0.9 (0.845: 0.956)	---	---	0.811	0.881
	Q8	1.046 (0.952: 1.141)	0.048	0.942 (0.887: 0.997)	21.760	**<0.001**	0.888	
	Q9	1.051 (0.981: 1.122)	0.036	0.947 (0.906: 0.987)	29.130	**<0.001**	0.896	
	Q10	1.04 (0.952: 1.127)	0.045	0.936 (0.886: 0.986)	23.200	**<0.001**	0.876	

[1]Unstandardized beta coefficient; [2]standardized beta coefficient; 95% CI: 95% confidence interval. Factor 1: Communication during the pre-anaesthesia consultation; Factor 2: Side effects and adverse events of anaesthesia; Factor 3: Team professionalism/interpersonal skills.

Table 3. Model fit indices for CFA results

Model Fit Indices	Value
Comparative Fit Index (CFI)	0.990
Tucker-Lewis Index (TLI)	0.985
Bentler-Bonett Non-normed Fit Index (NNFI)	0.985
Bentler-Bonett Normed Fit Index (NFI)	0.986
Parsimony Normed Fit Index (PNFI)	0.663
Bollen's Relative Fit Index (RFI)	0.979
Bollen's Incremental Fit Index (IFI)	0.990
Relative Noncentrality Index (RNI)	0.990

Table 4. Descriptive statistics of PQA-10 scores

	Mean ± SD	Median [Min-Max]
Communication during the pre-anaesthesia consultation (Factor 1)	10.85 ± 2.38	12 [3:15]
Side effects and adverse events of anaesthesia (Factor 2)	8.72 ± 0.92	9 [4:10]
Team professionalism/interpersonal skills (Factor 3)	16.58 ± 1.58	16[11:20]
Total PQA-10 score	36.15 ± 3.79	37 [25:45]
Communication during the pre-anaesthesia consultation, repeat assessment (Factor 1)	11.02 ± 2.32	12 [5:15]
Side effects and adverse events of anaesthesia, repeat assessment (Factor 2)	5.48 ± 1.11	5[2:10]
Team professionalism/interpersonal skills, repeat assessment (Factor 3)	16.63 ± 1.6	16 [11:20]
Total PQA-10 score, repeat assessment	33.12 ± 3.68	33[23:42]

SD: standard deviation.

Table 5. Test–retest results

	Test	Retest	r	Test Statistic	p^x	ES [95% CI]
Communication during the pre-anaesthesia consultation (Factor 1)	12 [3: 15]	12 [5: 15]	0.70	1633.500	0.128	0.068 [-0.057: 0.190]
Side effects and adverse events of anaesthesia (Factor 2)	9 [4: 10]	5 [2: 10]	-0.13	29576.500	**<0.001**	-0.593 [-0.668: -0.506
Team professionalism/interpersonal skills (Factor 3)	16 [11: 20]	16 [11: 20]	0.65	1218.000	0.588	0.024 [-0.100: 0.148]
PQA-10 Total	37 [25: 45]	33 [23: 42]	0.64	26343.500	**<0.001**	-0.486 [-0.575: -0.385

xWilcoxon signed-rank test; values are presented as median (minimum–maximum); ES (95% CI): effect size (95% confidence interval) = paired-samples correlation (r).

Figures

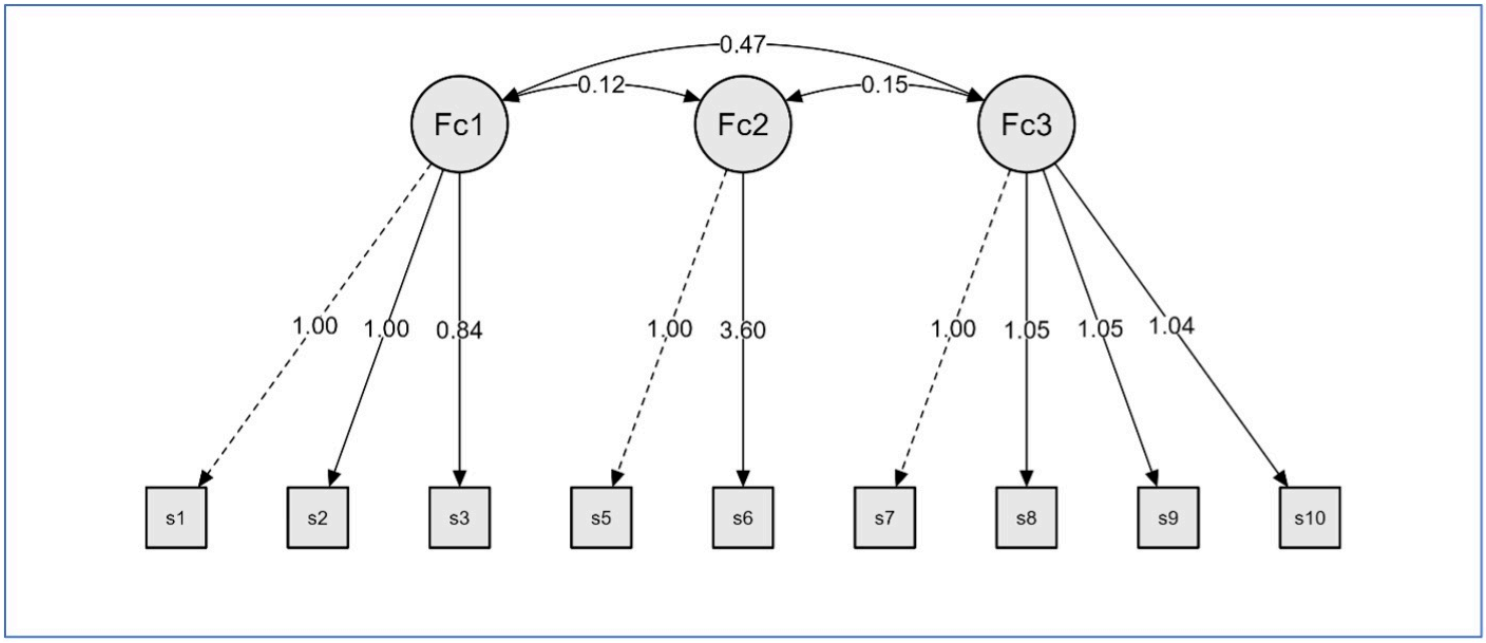

Figure 1

Plot of the unstandardized beta coefficients of the model

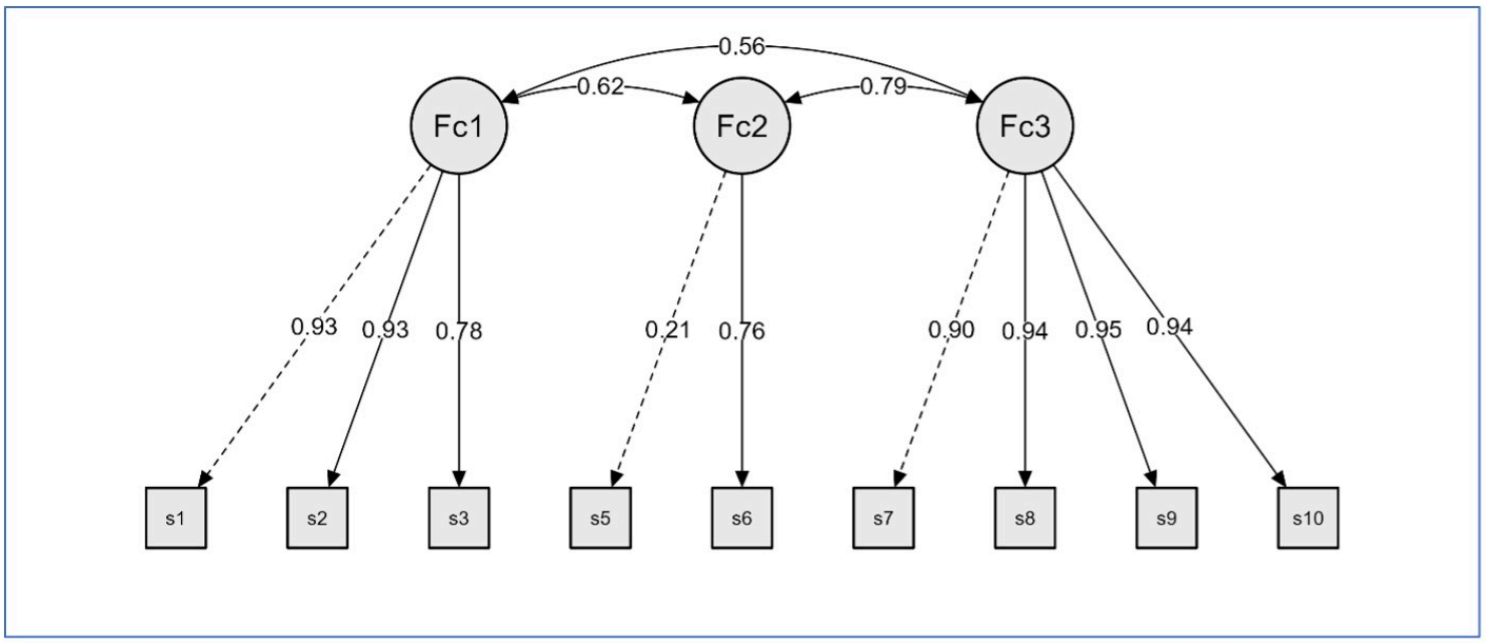

Figure 2

Plot of the standardized beta coefficients of the model

Supplementary Files

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