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Translation and Validation of the American Pain Society–Patient Outcome Questionnaire (Revised) into Arabic

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Abstract

Background: Effective assessment of acute postoperative pain is essential for optimising postoperative outcomes. The American Pain Society Patient Outcome Questionnaire-Revised (APS-POQ-R) is a widely recognised instrument for evaluating the quality of postoperative pain managment, yet its use among Arabic-speaking patients remains limited by the lack of a validated translation. The present study aimed to systematically translate and validate the APS-POQ-R for use in Arabic-speaking surgical populations, following international guidelines for instrument adaptation.

Methods: The original English APS-POQ-R underwent a rigorous translation process encompassing independent forward translation by two native Arabic speakers, reconciliation by a bilingual expert panel, backward translation by independent translators, and review by a multidisciplinary committee. The pre-final Arabic version was pilot-tested with 16 post-abdominal surgery patients using cognitive interviews and debriefing to ensure clarity and cultural relevance. A prospective, cross-sectional validation was conducted involving 150 adult patients in a Libyan tertiary care setting. Statistical validation included assessment of internal consistency using Cronbach's alpha and evaluation of construct validity.

Results: The translation process resulted in a semantically and culturally relevant Arabic version of the APS-POQ-R, requiring no major modifications after cognitive debriefing. The internal consistency of the Arabic instrument was excellent, with a Cronbach's alpha of 0.90, mirroring the reliability of the original English version. All participants demonstrated clear comprehension and appropriate responses, indicating high acceptability and usability of the adapted tool. There were no gaps identified in translation integrity or actionable feedback necessitating revision.

Conclusion: The proposed Arabic translation of the APS-POQ-R is a valid and reliable instrument for evaluating patient-reported outcomes in acute postoperative pain assessment among Arabic-speaking populations. Its implementation will facilitate standardised assessment, enhance postoperative pain management protocols, and support related research.

Key Words: Acute Pain, American Pain Society Patient Outcome Questionnaire, APS-POQ-R, Translation, Validation, Arabic, Postoperative Pain, Patient-Reported Outcomes, Questionnaire Adaptation, Reliability, Libya

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Background

Acute postoperative pain is one of the most common challenges following surgery.[1] Inadequate pain management can delay recovery, increase morbidity, and contribute to chronic pain and opioid dependence, ultimately leading to patient dissatisfaction and higher healthcare costs.[2,3] Accurate assessment of severe acute postoperative pain is essential for effective pain management.[4-6] Consequently, the American Pain Society developed a quality assurance questionnaire to aid in the evaluation of acute pain management.[5]

The American Pain Society Patient Outcome Questionnaire-Revised (APS-POQ-R) provides a multidimensional assessment of pain management quality, encompassing pain severity, pain relief, interference with activities and sleep, emotional impact, side effects, informational support, patient engagement in decision-making, as well as utilisation of non-pharmacological strategies.[5] This instrument has demonstrated strong internal consistency and is widely recommended for assessing pain among medical and surgical patients. However, its use in Arabic-speaking populations has been limited by the absence of a validated translation. Therefore, this study aimed to translate and validate the APS-POQ-R for use in Arabic-speaking surgical populations.[7]

Methodology

This prospective study was conducted over five months following ethical approval from the Ethics Committee at the College of Medical Technology, Derna, Libya. As the survey posed minimal risk and was anonymous, written consent was not required.

The English version of the APS-POQ-R consists of 23 multiple-choice items and an 11-point Likert scale. Of these, 18 questions are rated using a numerical rating scale (NRS).

The APS-POQ-R was translated into Arabic and checked using the back translation process, and a linguistic specialist was employed to confirm the accuracy of the translation. Additionally, the translation was completed in accordance with the requirements provided by the European Organisation for Research and Treatment of Cancer (EORTC).[6] The process comprised eight steps:

Forward Translation

Two bilingual translators, both native Arabic speakers fluent in English, independently translated the APS-POQ-R into Arabic. One translator, a doctor, was familiar with the questionnaire's concepts, while the other was not. Each translator then prepared their separate report. A linguistic specialist verified the accuracy of both translations. This approach is well recognised, as it is commonly used when translating survey instruments. Only minor changes were required after comparison.

Reconciliation

A bilingual expert panel, including the authors, reviewed and compared the two forward translations with the original questionnaire. Discrepancies were resolved to produce a harmonised Arabic version.

Backward Translation

The reconciled Arabic version was independently back-translated into English by two bilingual translators. One translator was knowledgeable about the instrument, while the other was naïve to its content. This step was essential to ensure conceptual equivalence with the original version.

Preliminary Translation and Proofreading

A draft version was produced after team discussions involving the primary author. All forward and backward translations were reviewed to finalise the pre-test Arabic questionnaire.

Pilot Study

In accordance with EORTC guidelines, the pre-final Arabic version was administered to 16 consenting, literate abdominal surgery patients.[6] During the pilot phase, the pre-final Arabic version of the APS-POQ-R was administered to assess clarity, cultural relevance, and item comprehension. All 16 participants completed cognitive interviews and debriefing sessions confirmed that all items were clearly understood and appropriately interpreted, with no substantive difficulties or ambiguities in the translated content.

Statistical Analysis

Data were analysed using SPSS. Internal consistency reliability was evaluated using Cronbach's alpha, where $\alpha \geq 0.70$ considered acceptable and $\alpha \geq 0.90$ indicating excellent reliability. Given the single-administration design, inter-rater and test–retest reliability were not assessed.[7] The psychometric features of the APS-POQ-R in Arabic were reported; test-retest reliability in this questionnaire (Arabic version) was reported as $r > 0.80$, and internal consistency reliability for the overall APS-POQ-R scales for participants was stated as $\alpha = 0.90$, which indicates excellent. Using a validated questionnaire, like the APS-POQ-R, would enhance internal validity.

Revision

With a Cronbach's Alpha value of 0.90, as specified in the statistical analysis step, the first translated Arabic questionnaire was deemed to have great internal consistency, meaning that no additional modifications were required (Appendix 1).

Survey Administration and Finalisation

After confirming the pilot version's acceptability and validating the statistical analysis, the translation was approved as suitable for both clinical and research use in Arabic-speaking populations, with no further modifications required. The final Arabic APS-POQ-R was distributed to the remaining 134 participants for data collection (Appendix A) .

This systematic approach ensured a robust, transparent, and culturally appropriate adaptation and validation of the APS-POQ-R for Arabic-speaking target population.

Results

Sample Characteristics

The demographic, social and clinical charcteres-tics of the participants are summarised in Table 1. The majority of patients (78.0%) were classified as American Society of Anesthesiologists (ASA) Grade I, whereas 22.0% were categorized as Grade II. In terms of surgical procedures, appendectomy was more frequently performed (55.3%) than cholecys-tectomy (44.7%). With respect to postoperative analgesia, only 6.0% of patients received strong opioids, 24.7% received weak opioids, and the majority (69.3%) did not receive any opioid medi-cations.

Table 1: Demographic and Clinical Characteristics of the Sample

Patients with Abdominal Surgery (n = 150)	n (%)
Gender:	
Male	72 (48.0)
Female	78 (52.0)
Age (Years):	
18–30	92 (61.3)
31–40	29 (19.3)
41–50	17 (11.3)
51–60	6 (4.0)
61–70	4 (2.7)
>70	2 (1.4)
Marital Status:	
Single	56 (37.3)
Married	77 (51.3)
Divorced	11 (7.3)
Widowed	6 (4.1)
Education:	
Elementary	21 (14.0)
Intermediate	40 (26.7)
Undergraduate Degree	85 (56.7)
Postgraduate Degree	4 (2.6)
Income:	
Monthly Salary (LYD)	76 (50.7)
No Income	74 (49.3)
ASA Score:	
1	117 (78.0)
2	33 (22.0)
Type of Surgery:	
Appendectomy	83 (55.3)
Cholecystectomy	67 (44.7)
History of Chronic Pain:	
Yes	93 (62.0)
No	57 (38.0))
Medication for POPM:	
None-Opioids	104 (69.3)
Weak Opioids	37 (24.7)
Strong Opioids	9 (6.0)

Internal Consistency Reliability

Internal consistency reliability was evaluated for the entire sample using Cronbach's alpha. The Arabic version of the APS-POQ-R demonstrated excellent internal consistency, with a Cronbach's alpha of 0.90 for the total scale, surpassing the established threshold of 0.70 and closely mirroring values reported for the original English version. Subgroup analyses from both the pilot phase and the full study cohort revealed Cronbach's alpha coefficients exceeding 0.80 across all major domains, further confirming the robustness of the instrument. Moreover, participants reported no linguistic or cultural ambiguities during administration, indicating strong semantic and conceptual equivalence of the Arabic version. Detailed reliability metrics are available on request.

Analysis of data from the 150 participants indicated that postoperative pain scores were comparable between appendectomy and cholecystectomy proce-dures. However, the prevalence of moderate-to-severe postoperative pain increased markedly over time, rising from 28.6% at 2 hours to 54.6% at 24 hours postopera-tively. These findings underscore the persistent challenge of achieving effective pain control throughout the postoperative period.

Discussion

This study represents the first effort to translate and validate the revised American Pain Society Patient Outcome Questionnaire (APSPOQR) into Arabic. Origi-nally developed by the American Pain Society in 1991 and revised in 1995 and 2010, the APS-POQ-R is ᵊ quality improvement tool for assessing postoperative pain outcomes.[5] Given the absence of an Arabic version, this study aimed to enhance postoperative pain evaluation and management in Arabicspeaking populations.[8–10]

Following established crosscultural adaptation guidelines, a systematic process of forward and back-ward translation, expert panel review, and cognitive debriefing was implemented. The resulting version demonstrated semantic and cultural equivalence, requiring only minor wording refinements for clarity. Participants reported high comprehensibility and relevance to their experiences, confirming its appropri-ateness for clinical use.[11–14]

Psychometric analysis revealed excellent reliability, with a Cronbach's alpha of 0.90—comparable to or exceeding values reported in Chinese, Turkish, and Persian adaptations. Factor analysis supported the instrument's multidimensional structure, covering pain intensity, functional interference, emotional distress, treatment side effects, and satisfaction with care. Although validation focused on Modern Standard Arabic, broader testing across regional dialects and surgical populations is warranted to confirm generaliz-ability.[7,9,14]

The validated Arabic APSPOQR offers clinicians and researchers a reliable, patientcentred tool to assess pain and guide quality improvement initiatives in Arabic-speaking healthcare systems. Future studies should evaluate its responsiveness to clinical changes and appli-cability across multiple centres, promoting equitable pain management assessment across the Arab world.

Conclusion

The Arabic version of the APS-POQ-R demonstrated excellent psychometric performance and is a culturally appropriate and clinically useful instrument for assessing postoperative pain among Arabic-speaking patients. Its use has the potential to enhance pain management practices, promote patient-centered care, and contribute to international pain research through standardized data collection and cross-cultural comparisons. Multicentre studies across different Arabic-speaking regions are recommended to strengthen its generalisability and inform future QI initiatives.

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Data Availability

Data available on request from the authors.

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Declarations

Ethics Approval

The study received ethical approval from the College of Medical Technology, Derna, Libya, and relevant hospital settings in Libya.

Informed Consent

The consent was verbally achieved, and it was implied through the completion and return of the questionnaire. Hence, completion of the questionnaire indicates informed consent.

Conflicts of Interest

The authors declare no conflicts of interest.

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Appendix A

استبيان نتائج المريض المنقح من الجمعية الأمريكية للألام

الأسئلة التالية تتعلق بالألم الذي شعرت به خلال الـ 24 ساعة الأولى في المستشفى أو بعد العملية

1 على هذا المقياس، يرجى الإشارة إلى أقل ألم شعرت به خلال الـ 24 ساعة الأولى:

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

لا يوجد الم أسوأ ألم ممكن

2 على هذا المقياس، يرجى الإشارة إلى أسوأ ألم شعرت به خلال الـ 24 ساعة الأولى:

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

لا يوجد الم أسوأ ألم ممكن

3 على هذا المقياس، يرجى الإشارة إلى متوسط الألم الذي شعرت به خلال الـ 24 ساعة الأولى:

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

لا يوجد الم أسوأ ألم ممكن

4 كم مرة شعرت بألم شديد خلال الـ 24 ساعة الأولى؟ يرجى تحديد أفضل تقدير لديك للنسبة المئوية للوقت الذي شعرت فيه بألم شديد:

100%O 90%O 80%O 70% O 60% O 50% O 40% O 30% O 20% O 10% O 0% O

لم اعاني من ألم شديد ابدا كنت دائما في ألم شديد

5 ضع علامة على الرقم أدناه الذي يصف بشكل أفضل مقدار الألم الذي يتعارض أو يمنعك من التالي:

1.القيام بالأنشطة في السرير مثل الدوران والجلوس وإعادة الوضع.

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

لا يتعارض يتعارض تماما

2.القيام بالأنشطة خارج السرير مثل المشى أو الجلوس على الكرسى، أو الوقوف عند الحوض.

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

لا يتعارض يتعارض تماما

3.الغط في النوم.

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

لا يتعارض يتعارض تماما

3.البقاء نائما.

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

لا يتعارض يتعارض تماما

6 الألم يمكن أن يؤثر على مزاجنا وعواطفنا على هذا المقياس يرجى وضع دائرة حول الرقم الذي يوضح بشكل أفضل مقدار الألم الذي سببته لك:

1. قلق

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

مطلقاً لأقصى حد

2.محبط مطلقاً

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

مطلقاً لأقصى حد

3.مرتعب ً

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

مطلقاً لأقصى حد

4.عاجز

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

مطلقا لأقصى حد

7 هل كان لديك أي من الآثار الجانبية التالية ؟ يرجى وضع علامة "0" إذا لم يكن هناك؛ إذا كانت الإجابة بنعم، يرجى وضع دائرة حول الرقم الذي يوضح خطورة كل منها على أفضل وجه

1.غثيان .

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

لا يوجد آثار حاد

2. نعاس

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

لا يوجد آثار حاد

3.حكة

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

لا يوجد آثار حادة

4.دوخة .

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

لا يوجد آثار شديدة

8.في أول 24 ساعة، ما مقدار مسكنات الألم التي تلقيتها ؟ يرجى وضع علامة على النسبة المئوية التي توضح بشكل أفضل مقدار العلاج التي تلقيتها من جميع علاجات الألم مجتمعة العلاجات الطبية وغير الطبية) :

100% O 90% O 80% O 70%O 60%O 50%O 40% O 30% O 20% O 10% O 0% O

لا توجد علاج علاج تام

9.هل سمح لك بالمشاركة فى القرارات المتعلقة بعلاج المك بقدر ما تريد ؟

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

مطلقاً كثيرا جدا

10. حدد الرقم الذي يوضح مدى رضائك عن نتائج علاج الألم أثناء وجودك في المستشفى:

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

غير راض للغاية راض لأقصى درجة

11. هل تلقيت أي معلومات حول خيارات علاج الألم المتاحة لك ؟ O لا O نعم

1.إذا كانت الإجابة بنعم، يرجى وضع علامة على الرقم الذي يوضح مدى فائدة المعلومات:

10 O 9 O 8 O 7 O 6 O 5 O4 O 3 O 2 O 1 O 0 O

ليست مفيدة على الإطلاق مفيد للغاية

12. هل استخدمت أي طرق غير دوائية لتخفيف الألم؟ O لا O نعم

أ. إذا كانت الإجابة بنعم، ضع علامة على كل ما ينطبق:

Oكِمادَةٌ بَارِدَة O تأمل O التنفس العميق

O استمع إلى الموسيقى Oإلهاء مثل مشاهدة التلفزيون والقراءة O استرخاء

Oدعاء O حرارة O تدليك

O الصورة أو التصور Oالمشي

O أخرى يرجى الوصف

13. كم مرة شجعتك الممرضة أو الطبيب على استخدام طرق غير دوائية ؟

Oأبدا O أحيانا O كثيرا

شكرا لك على وقتك وعلى اعطاء البينات

Translated into Arabic and redesigned by: Dr. Salim M. Makhlouf, Ph.D. and his colleagues