Validacija slovenske različice vprašalnika Patient-Practitioner Orientation Scale – PPOS
Validation of the Slovenian Version of the Patient-Practitioner Orientation Scale – PPOS

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Ključne besede:
v pacienta usmerjena oskrba, Patient-Practitioner Orientation Scale (PPOS), validacija, eksplorativna analiza

Key words:
patient-centered care, Patient-Practitioner Orientation Scale (PPOS), validation, exploratory analysis

Članek prispel / Received
21. 3. 2025
Članek sprejet / Accepted
2. 6. 2025

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Izvleček

Namen: *Koncept zdravstvene oskrbe, ki pacienta postavlja v središče, se je razvil v zadnjih desetletjih. Nov pristop, imenovan oskrba, usmerjen na pacienta, poudarja pomen razumevanja in upoštevanja individualnih potreb, vrednot in želja pacienta ter spodbuja aktivno sodelovanje med pacientom in zdravstvenimi delavci na vseh ravneh. Ta pristop vključuje skrb za psihološke, socialne in duhovne potrebe pacientov. Za merjenje oskrbe, usmerjene na pacienta, je bilo razvitih več vprašalnikov, med katerimi je pogosto uporabljen Krupatov vprašalnik Patient-Practitioner Orientation Scale (PPOS).*
Metode: *Raziskava validacije vprašalnika PPOS je bila izvedena v več fazah. Prevod PPOS lestvice je potekal v skladu s priporočili Svetovne zdravstvene organizacije in smernicami International Society for Pharmacoeconomics and*

Abstract

Purpose: *Recent decades have seen the emergence of a healthcare framework that places the patient at the core, giving rise to a novel approach termed patient-centered care (PCC) which emphasizes the importance of understanding and respecting the individual needs, values, and preferences of patients, while promoting active collaboration between patients and healthcare providers at all levels. This approach also addresses the psychological, social, and spiritual needs of patients. Several questionnaires have been developed to measure PCC, among which Krupat's *Patient-Practitioner Orientation Scale* (PPOS) is frequently used.*
Methods: *Validation of the PPOS questionnaire was conducted in several phases. The translation followed the recommendations of the World Health Organization and the ISPOR guidelines. The process in-*

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Outcomes Research (ISPOR). Postopek je vključeval naslednje: prevod vprašalnika v slovenski jezik s strani dveh neodvisnih raziskovalcev, pregled in uskladitev prevodov s strani strokovnjakov, povratni prevod vprašalnika v angleščino in kulturološko preverjanje ustreznosti vprašalnika. Vprašalnik je bil poslan na e-naslove zdravnikov družinske medicine, ki so sodelovali v raziskavi. Sledila je eksploratorna faktorska analiza podatkov in preverjanje notranje skladnosti lestvice.

Rezultati: *Vprašalnik je izpolnilo 112 zdravnikov družinske medicine različnih starosti, delovnih okolij in velikosti ambulant. Kriteriju „v pacienta usmerjen" sta zadostili v vprašalniku samo postavki 9 in 13. „Zmerna usmerjenost v pacienta" se je pokazala v postavki 17. Vse ostale postavke so izpolnile kriterij „usmerjenosti v zdravnika". Z eksploratorno faktorsko analizo so bili ugotovljeni štirje faktorji lestvice – za vsakega od teh je bila preverjena zanesljivost. Izračun Cronbach alpha je prikazal sprejemljivo notranjo skladnost za celotni vprašalnik (0,724), prav tako za faktor 1 (0,709) in faktor 2 (0,688), pri drugih dveh faktorjih pa nizko notranjo skladnost (faktor 3 = 0,437, faktor 4 = 0,437). Pri dveh je izračun Cronbach alpha prikazal sprejemljivo notranjo skladnost (faktor 1 = 0,709, faktor 2 = 0,688), pri drugih dveh pa nizko (faktor 3 = 0,437, faktor 4 = 0,437).*

Zaključek: *Analiza rezultatov je pokazala pretežno usmerjenost v zdravnika. Validacijski postopek je pokazal, da slovenski prevod vprašalnika v trenutni obliki za uporabo ni primeren. Potrebne so nadaljnje prilagoditve in dodatna validacija, da bi bil vprašalnik ustrezno orodje za oceno oskrbe, usmerjene na pacienta, v slovenskem okolju.*

cluded: translation of the questionnaire into Slovenian by two independent translators, review and harmonization of the translations by experts in the field of family medicine, back-translation of the questionnaire into English, and cultural validation of the questionnaire's appropriateness. The questionnaire was distributed via email to participating family medicine physicians. This was followed by exploratory factor analysis of the data and an assessment of the scale's internal consistency.

Results: *The questionnaire was completed by 112 family physicians of various ages, working in different environments and practice sizes. Only items 9 and 13 in the questionnaire met the criterion of being "patient-oriented." "Moderate patient orientation" was observed in item 17. All other items met the criterion of being "practitioner-oriented." Exploratory factor analysis identified four factors within the scale. The reliability of each of the four factors was assessed. The calculation of Cronbach's alpha showed acceptable internal consistency for the entire questionnaire (0.724), as well as for factor 1 (0.709) and factor 2 (0.688). For the other two factors, however, low internal consistency was observed (factor 3 = 0.437, factor 4 = 0.437).*

Conclusion: *The analysis of the results revealed a predominant orientation toward the practitioner. The validation process showed that the Slovenian translation of the questionnaire in its current form is not yet suitable for use. Further adjustments and additional validation are needed to ensure that the questionnaire becomes an appropriate tool for assessing PCC in the Slovenian context.*

INTRODUCTION

In recent years, healthcare has undergone a significant transformation, shifting from a disease-centered model to one that places the patient at the core of care. This patient-centered approach is particularly emphasized in family medicine, where care extends beyond physical ailments to include the psychological, social, cultural, and existential dimensions of a person (1,2).

Unlike the traditional biomedical model that focused solely on diagnosing and treating diseases, patient-centered care (PCC) actively involves patients in clinical decision-making. It respects their values,

needs, and preferences, thereby fostering stronger patient-provider partnerships and more personalized, effective care (3,4). This holistic approach recognizes that health outcomes are influenced not just by medical interventions, but also by emotional well-being, social support, and environmental conditions (5,6).

One of the core elements of PCC is effective communication (7). Studies show that when patients feel heard and respected, they are more likely to follow treatment plans and achieve better outcomes (8). Additionally, including family members in care decisions improves overall satisfaction and helps address complex care needs, especially for chronic conditions (9). Research confirms that support from informal caregivers contributes to better health and smoother communication between healthcare providers and patients (10).

Successfully implementing PCC requires structural changes within healthcare systems. Institutions must foster a culture of respect, empathy, and collaboration, while also empowering healthcare workers through continuous education. Training programs focused on communication and empathy have been shown to support the adoption of PCC values (11-13).

Technology also plays a key role in enabling PCC. Tools like electronic health records improve information sharing and care coordination, although they bring challenges related to privacy and data security (14,15). Moreover, equitable access to care remains a concern, as socioeconomic and cultural factors can limit some patients' ability to fully participate in their healthcare (16).

Despite these challenges, the benefits of PCC are clear. It leads to better health outcomes, lower hospital readmissions, and higher satisfaction among patients and providers alike (17). Research supports the effectiveness of PCC, particularly in managing chronic and complex conditions (18).

To assess how well PCC is being implemented, various standardized questionnaires have been developed:

- The Patient-Practitioner Orientation Scale (PPOS), focusing on "Caring" and "Sharing" dimensions (11,19).
- The Person-Centered Care Assessment Tool (P-CAT) evaluates patient experiences, including communication and involvement in decision-making (20).
- The Person-Centered Coordinated Care Experience Questionnaire (P3CEQ) assesses care coordination and personalization across healthcare systems (21).
- The Generic Person-Centered Care Questionnaire (GPCCQ) is used in diverse healthcare settings to assess patient perception of PCC (22).

PCC represents a progressive and compassionate direction for modern healthcare. It requires system-level commitment, provider training, and validated tools to measure progress. Despite current challenges, this model offers promising improvements in health outcomes, patient satisfaction, and overall care quality (23).

In Slovenia, these tools are not yet widely validated. The validation of instruments like PPOS would allow Slovenian healthcare providers to assess and improve PCC practices effectively. Moreover, participating in international studies requires validated local versions of such tools, making their adaptation a priority.

The aim of this study was validation of the PPOS scale as a tool for use in the Slovenian healthcare system.

MATERIAL AND METHODS

Type of study and settings

The presented descriptive, cross-sectional, self-reported online study was part of a large international project titled "European General Practitioners'/Family Physicians' Attitudes Towards Person-Centered Care and Factors That Influence Its Implementation in Everyday Practice"* (PACE GP/FP study), across 24 European countries, among them Slovenia. The study was conducted in close collaboration with the European Association for Quality and Patient Safety in Primary Care (EQuiP) and the European General Practice Research Network (EGPRN) (24).

Participants

The study involved family physicians working in family medicine practices across Slovenia. The international PACE GP/FP study protocol set a minimum requirement of 100 participants per country to ensure sufficient statistical power of the

study (24). An invitation to participate was sent via the Medical Chamber of Slovenia to all email addresses of licensed family physicians and family medicine residents, totaling 1,178 addresses. The invitation was resent to the same recipients after 1 month. All family physicians who met the following inclusion criteria were eligible to participate: active work in a family medicine practice and willingness to participate and complete the questionnaire. Exclusion criteria included: absence due to illness or other reasons during the data collection period and failure to provide consent to participate in the study. Participating physicians self-identified whether their clinic operated in an urban or rural setting. A teaching clinic was defined as a clinic where the educational process for students, trainees, and residents takes place.

Data Collection

Data collection for this part of the study was conducted between March 2023 and January 2024 using the structured PPOS questionnaire, originally developed by Krupat et al. in 2000 (19, 25). The PPOS questionnaire is a doctor–patient orientation scale capable of assessing doctors', medical students' and patients' attitudes toward the doctor–patient relationship. The scale contains 18 items that reflect two domains related to the patient: Sharing and Caring. which are central to understanding physician-patient interactions. The nine-item Sharing domain assesses whether respondents believe that power and control should be shared between doctors and patients as well as the degree to which the doctor should share PPC. The Caring domain (also nine items) assesses the extent to which the doctor demonstrates warmth, support, and a patient-centered approach, reflecting attitudes towards empathy, understanding, and responsiveness to patients' feelings and needs.

Together, the Sharing and Caring domains provide a comprehensive measure of the orientation towards the doctor–patient relationship, capturing the balance between a more paternalistic, doctor-led approach and a more collaborative, patient-centered model.

Scores on the PPOS can range from a more practitioner-centered orientation (lower scores) to a more patient-centered orientation (higher scores). This scale has been widely used in cross-cultural studies to assess attitudes across different healthcare settings and populations (11).

We selected Krupat et al.'s PPOS scale due to its widespread use, robust psychometric properties, and its ability to capture physician attitudes along a continuum from practitioner-centered to patient-centered orientations.

Importantly, the PPOS was employed in the large-scale international PACE GP/FP study, providing a validated framework for cross-cultural comparison (24). Using the PPOS allowed us to align our study with this international project, facilitating comparability of results and contributing to a broader understanding of PCC attitudes across different healthcare systems (24).

The PPOS questionnaire was translated and adopted for use in a Slovenian context. The translation process followed the guidelines of the World Health Organization (WHO) and the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) (26), and included:

- Translation of the questionnaire into Slovenian by two independent researchers.
- Harmonization of translations by experts in the field of family medicine.
- Back-translation into English to verify meaning.
- Cultural validation of the questionnaire's appropriateness.

Data collection took place via an online platform, where physicians received a link to complete the questionnaire. The collected data included:

- Independent variables: gender, age, work environment (rural/urban), and whether the clinic was a teaching institution.
- Dependent variables: PPOS questionnaire items measuring healthcare providers' orientation toward PCC.

Data Analysis

Data collected using the PPOS were analyzed using the statistical software IBM SPSS Statistics 29. The analysis methods included:

Descriptive statistics

Descriptive statistics were used to provide a basic overview of the sample, including the proportions of participants by gender, work environment (rural or urban), and the status of the clinic as a teaching institution. Frequencies, mean values, and standard deviations were calculated.

Descriptive analysis of the PPOS Questionnaire:

The questionnaire is scored on a scale from 1 to 6 points:

- 6 points: Strongly disagree
- 5 points: Moderately disagree
- 4 points: Slightly disagree
- 3 points: Slightly agree
- 2 points: Moderately agree
- 1 point: Strongly agree

Interpretation of the Questionnaire:

- Patient-oriented (>5.00)
- Moderately patient-oriented (4.57 – 5.00)
- Practitioner-oriented (<4.57)

Exploratory Factor Analysis:

To explore the underlying structure of the Slovenian version of the PPOS questionnaire, we conducted an exploratory factor analysis (EFA) using Principal Component Analysis (PCA) with varimax rotation. Indicators such as the number of factors, total explained variance, and factor loadings of the items were determined. PCA was chosen as an initial exploratory technique due to the limited sample size (n = 112), which constrained the use of more complex factor analysis methods such as common factor analysis. While we acknowledge that PCA does not distinguish between shared and unique variance and is more commonly used for data reduction rather than identifying latent constructs, it served as a preliminary step to identify potential factor groupings within the translated scale. The number of components retained was based on eigenvalues greater than 1 and examination of the scree plot.

Reliability Analysis:

Cronbach's alpha was calculated to assess the internal consistency of individual factors. Factors with alpha values above 0.7 were considered acceptably reliable, while factors with lower values indicated the need for adjustment of the sample.

- Values above 5 indicate a strong orientation towards PCC. Columns with mean values above 5 reflect a greater focus on the patient's needs and the adaptation of healthcare to the individual wishes of the patient.
- Values between 4.57 and 5 indicate a moderate orientation towards PCC. In these cases, physicians maintain a balanced approach between considering the patient's needs and their own professional judgment.
- Values below 4.57 suggest a more practitioner-oriented approach. This means that decisions during consultations are more influenced by the physician's professional judgment, with less consideration given to the patient's wishes.

RESULTS

A total of 112 family physicians who fully completed the PPOS questionnaire were included in the analysis. The response rate was 9.5%. The study involved more female than male physicians, with the majority working in urban settings and participating in the teaching process as mentors for students, trainees, and residents. The demographic characteristics of the participants are presented in Table 1.

Table 1. Demographic Characteristics of Family Physicians

Characteristics	NO	%
Male	34	30.4%
Female	78	69.6%
Rural settings	22	19.6%
Urban settings	90	80.4%
Teaching settings	87	77.7%
Non-teaching settings	25	22.3%

Descriptive Analysis of the PPOS Questionnaire

Table 2 shows the mean values of responses for each individual item or statement. The highlighted questions are those that indicated an orientation or partial orientation toward the patient.

Only Items 9 and 13 are in the patient-oriented range (>5.0):

- Item 9 (Patients should be treated as if they were partners...): 5.3
- Item 13 (Treatment plan must align with lifestyle/values): 5.2
- Item 17 (Humor is important) falls in the moderately patient-oriented range: 4.6

The remaining 15 items are all practitioner oriented.

Validity of the PPOS Questionnaire

In the analysis of the PPOS questionnaire, we used a four-factor model, where the individual factors explained a total variance of 47.6%.

Exploratory Factor Analysis of the PPOS Scale

The 18 items of the questionnaire were distributed across four factors. The distribution of items by factors is shown in Table 3. The contributions of individual statements are presented in Table 4.

Table 2: Descriptive analysis of PPOS

No.	Item	Min.	Max.	Mean	SD*
1	The doctor is the one who should decide what gets talked about during a visit.	1	6	3.2	1.5
2	Although healthcare is less personal these days, this is a small price to pay for medical advances.	1	6	2.7	1.4
3	The most important part of the standard medical visit is the physical exam.	1	6	3.1	1.5
4	It is often best for patients if they do not have a full explanation of their medical condition.	1	6	2.1	1.2
5	Patients should rely on their doctors' knowledge and not try to find out about their conditions on their own.	1	6	3.1	1.5
6	When doctors ask a lot of questions about a patient's background, they are prying too much into personal matters.	1	6	1.9	1.1
7	If doctors are truly good at diagnosis and treatment, the way they relate to patients is not that important.	1	6	1.6	1.1
8	Many patients continue asking questions even though they are not learning anything new.	1	6	3.7	1.3
9	Patients should be treated as if they were partners with the doctor, equal in power and status.	4	6	5.3	1.5
10	Patients generally want reassurance rather than information about their health.	1	6	3.8	1.2
11	If a doctor's primary tools are being open and warm, the doctor will not have a lot of success.	1	6	2.2	1.3
12	When patients disagree with their doctor, this is a sign that the doctor does not have the patient's respect and trust.	1	6	2.8	1.3
13	A treatment plan cannot succeed if it is in conflict with a patient's lifestyle or values.	4	6	5.2	1.2
14	Most patients want to get in and out of the doctor's office as quickly as possible.	1	6	3.8	1.7
15	The patient must always be aware that the doctor is in charge	1	6	2.7	1.5
16	It is not that important to know a patient's culture and background in order to treat the person's illness.	1	5	1.9	1.1
17	Humour is a major ingredient in the doctor's treatment of the patient.	4	6	4.6	1.2
18	When patients look up medical information on their own, this usually confuses more than it helps.	1	6	4.4	1.2

SD – standard deviation*

Table 3. Exploratory Factor Analysis of the PPOS Scale

Item	Factor 1	Factor 2	Factor 3	Factor 4
1	0.674	0.198	-0.096	-0.118
2	0.650	0.221	-0.144	0.181
3	0.686	0.150	0.010	0.001
4	0.210	0.478	-0.332	0.021
5	0.242	0.725	-0.012	-0.022
6	0.519	-0.233	-0.205	0.459
7	0.489	-0.079	-0.262	0.394
8	0.563	0.185	0.240	0.002
9	0.058	0.067	0.759	-0.009
10	0.093	0.537	0.160	0.162
11	-0.076	0.133	0.027	0.709
12	0.064	0.691	-0.070	0.259
13	-0.177	-0.095	0.680	0.064
14	0.452	0.207	0.439	0.108
15	0.313	0.455	-0.218	0.074
16	0.120	0.224	-0.185	0.585
17	0.043	-0.026	0.157	0.513
18	0.017	0.644	0.289	-0.214

Reliability of the PPOS Scale

To assess reliability, we calculated the Cronbach's alpha value separately for each factor. The values are shown in Table 5.

Total scale reliability was acceptable ($\alpha = 0.724$), factor 1 showed acceptable, factor 3 borderline, and factors 3 and 4 poor reliability,

DISCUSSION

The validation of the Slovenian version of the PPOS questionnaire provides comprehensive insight into the patient-centered attitudes of family physicians in Slovenia. Our results contribute to the growing body of literature examining the cross-cultural validity of this instrument, originally developed by Krupat et al. (2000) (19,25), to assess physician orientation along a continuum from doctor-centered to PCC.

This study aimed to evaluate the psychometric properties of the Slovenian version of the PPOS

Table 4. Contribution of Individual Components (Statements) of the Scale to Explaining the Total Variance

Item	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.780	21.002	21.002	3.780	21.002	21.002	2.648	14.711	14.711
2	2.067	11.484	32.485	2.067	11.484	32.485	2.471	13.726	28.438
3	1.432	7.956	40.441	1.432	7.956	40.441	1.762	9.788	38.226
4	1.283	7.130	47.571	1.283	7.130	47.571	1.682	9.345	47.571
5	1.194	6.632	54.203						
6	1.100	6.110	60.313						
7	0.935	5.194	65.507						
8	0.876	4.869	70.376						
9	0.806	4.477	74.853						
10	0.725	4.030	78.883						
11	0.675	3.751	82.634						
12	0.606	3.366	86.000						
13	0.569	3.161	89.161						
14	0.512	2.846	92.007						
15	0.501	2.782	94.790						
16	0.335	1.859	96.648						
17	0.327	1.817	98.465						
18	0.276	1.535	100.000						

Extraction Method: Principal Component Analysis.

Table 5. Cronbach's Alpha Values for the 4-Factor PPOS Scale

Factor	Cronbach's Alpha
Factor 1	0.709
Factor 2	0.688
Factor 3	0.437
Factor 4	0.437
Total	0.724

questionnaire among family physicians, as instrument widely used internationally to assess attitudes toward PCC (24, 27,28). Despite the growing emphasis on PCC in medical theory and policy, our analysis reveals that Slovenian family physicians predominantly exhibit a practitioner-oriented attitude, with a mean total PPOS score of 3.2, indicating a traditional, biomedical approach to care.

Specifically, only two items—Item 9 ("Patients should be treated as if they were partners in the treatment process") and Item 13 ("A treatment plan cannot succeed if it is in conflict with a patient's lifestyle or values")—scored above 5.0, reflecting patient-oriented attitudes that endorse partnership in decision-making and alignment of treatment with patient values (29,30). These findings align with international trends toward holistic and collaborative primary care models (31). However, the majority of items (15 out of 18) remained in the practitioner-oriented range (<4.57), suggesting persistent paternalistic norms in Slovenian family medicine, where the physician assumes a dominant role and patient involvement is limited. This contrasts with Western European counterparts, where PCC is more broadly emphasized (28).

This predominant practitioner orientation was somewhat unexpected given family medicine's traditional association with holistic, continuous, and partnership-based care. Nevertheless, it resonates with broader international patterns where physician attitudes often diverge from the theoretical ideals of PCC. For example, Krupat et al., the original developers of the PPOS, documented a range of scores among US physicians, with many leaning towards a doctor-led model (19,25). Similar findings emerged from cross-cultural studies in Europe (Portugal, Germany, Spain) (33-36), China (37), Middle East and North Africa (38), highlighting systemic, cultural, and hierarchical factors that sustain paternalistic attitudes despite PCC's conceptual endorsement.

Several factors may explain why Slovenian family physicians maintain a practitioner-oriented stance. High patient loads, administrative burdens, short consultation time, limited support in primary care, systemic pressure, ethical dilemmas or unintended consequences (e.g., increased workload for already stretched family physicians) constrain opportunities for shared decision-making and individualized care, leading physicians to default to more directive, paternalistic styles despite conceptual support for patient-centeredness (31,32). This disconnects between medical education which increasingly emphasizes communication and shared decision-making and clinical practice reflects practical limitations and ethical dilemmas related to resource scarcity and professional burnout (31,32). Furthermore, cultural differences and translation challenges may affect how certain PPOS items are interpreted, potentially biasing results toward a more practitioner-oriented view (36).

The predominance of female physicians (69.6%) and high proportion of physicians engaged in teaching (77.7%) in the sample may also influence the findings, as previous research indicates that female and academic physicians tend to score higher on patient-centered measures (39,40). Still, despite these factors, the majority of responses remained in the practitioner-oriented range, suggesting a broader cultural trend that may be resistant to change.

Regarding the psychometric analysis, a Principal Component Analysis (PCA) was applied to the Slovenian PPOS data (n=112) to explore its latent structure. PCA allowed us to identify initial factor patterns and reduce dimensionality, providing an exploratory foundation for further analysis. PCA identified a four-factor model explaining 47.6% of total variance, slightly below the conventional 50% threshold for psychological scale validation (41). While this suggests some underlying dimensions, PCA is limited in its inability to separate shared

and unique variances, thus highlighting the need for future research to adopt more robust methods such as Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) with larger samples (19,42-45). Internal consistency for the total scale was acceptable (Cronbach's $\alpha = 0.724$), with Factor 1 also demonstrating acceptable reliability ($\alpha = 0.709$). However, Factors 3 and 4 showed poor reliability ($\alpha = 0.437$), consistent with prior international findings that PPOS subscale reliability varies across cultures and populations (46,47). This variability suggests some items may lack cultural resonance or clarity, underscoring the importance of ongoing item refinement and rigorous cross-cultural validation, including forward-backward translation and cognitive interviewing (43,44,48-51).

LIMITATIONS AND FUTURE DIRECTIONS

The relatively low response rate (9.5%) poses a limitation in terms of generalizability. Those who responded may already have a stronger interest in PCC, potentially skewing the results positively. Additionally, the current analysis relied solely on EFA. Future studies should employ CFA to test the validity of the emergent four-factor model and assess model fit using indices such as Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI), also known as the Non-Normed Fit Index (NNFI) (46).

Moreover, qualitative research methods (e.g., interviews or focus groups) could complement the quantitative findings by exploring how Slovenian family physicians conceptualize PCC and identify barriers to its implementation. Given the mixed reliability results, a revision of the Slovenian PPOS version may be warranted to improve clarity, cultural relevance, and psychometric performance.

The Slovenian findings thus contribute both local insight and global relevance, illustrating the persistent challenge of translating PCC values into clinical practice amid systemic and cultural constraints. They also emphasize the need for tailored educational and structural interventions to support more patient-centered attitudes and behaviors. Future research should expand sample sizes for robust factor analyses, and refine the PPOS for cultural specificity (52).

Recognizing factors such as systemic pressures and ethical dilemmas or unintended consequences (e.g., increased workload for already stretched professionals) highlights the importance of addressing organizational and systemic reforms alongside individual-level interventions to support meaningful PCC. Future research should incorporate qualitative insights to better understand these complex dynamics and identify strategies that balance workload demands with quality care.

Finally, due to the cross-sectional nature of the study, we cannot assess changes in physician attitudes over time or as a result of professional development. Longitudinal research would be necessary to examine whether targeted education or system reforms can shift attitudes toward more patient-centered approaches.

CONCLUSIONS

Preliminary validation of the Slovenian PPOS reveals acceptable overall reliability and a plausible factor structure but also highlights areas for improvement. While family physicians in Slovenia recognize patient autonomy in principle, a predominantly practitioner-oriented approach remains, influenced by systemic pressures and cultural norms. Refining the PPOS subscales, adapting items culturally, and validating the instrument using advanced psychometric techniques are essential next steps to ensure it accurately reflects Slovenian family physicians' attitudes towards PCC.

ACKNOWLEDGEMENTS

The authors would like to thank the family medicine physicians for their participation in the study and for completing the PPOS questionnaire.

Furthermore, we extend our gratitude to Prof. Davorina Petek, MD, PhD and Aljaž Gostinčar, MD for expert guidance, support, and valuable advice during the implementation of the study.

Special thanks also go to Špela Miroševič, PhD, for conducting the demanding statistical analysis, native speaker John Boyd, physician assistant, for language editing and Alojz Tapajner BCs System Engineer for technical support.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest related to the research.

FUNDING

The research received no external funding.

ETHICAL APPROVAL

The research was approved by the Medical Ethics Commission of the Republic of Slovenia (approval number: 0120-429/2022/7).

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