

Cross-Cultural Adaptation and Validation of the Perception of the Doctor-Patient Relationship (PREMEPA) Questionnaire in Chronic Multi-Pathological Patients

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Abstract

Objective: To conduct a cross-cultural adaptation and validation in Primary Care of the PREMEPA doctor-patient relationship perception questionnaire. **Design:** Descriptive, cross-sectional study, using self-administered questionnaires. **Qualitative validation:** an adapted version of the original questionnaire, was adapted to our culture. The process consisted of the evaluation, cross-cultural adaptation and consensus of a group of experts. The questionnaire was piloted on a sample of 32 patients diagnosed with at least 2 chronic pathologies. **Measures:** Cognitive piloting, comprehensibility assessment, content validation and internal consistency analysis using Cronbach's alpha coefficient. **Quantitative validation:** the internal consistency, construct validity and validity of the questionnaire were studied by means of a confirmatory factor analysis developed in a multicenter study, randomly selecting 202 patients with at least 2 chronic pathologies. **Results:** Content validity of the new Spanish version was confirmed to be adequate. Comprehensibility and internal consistency (Cronbach's α coefficient = 0.78) were adequate. The confirmatory factor analysis showed good dimensionality, factor relationship and internal consistency, as well as acceptable construct validity. The final result was a 13-item questionnaire consisting of 2 dimensions, which explain 58.5% of the variance: participation in decision-making (accounting for 45.2% of the variance) and person-centered communication (encompassing courtesy, empathy, humanity, and trust). **Conclusions:** This adapted version of the PREMEPA questionnaire can be considered valid for use in the Spanish population with a history of chronic pathology. This version of PREMEPA provides a new instrument to understand and improve chronic patient care, which can improve the doctor-patient relationship, encouraging adherence to treatment and enhancing health outcomes.

Keywords

physician-patient relation, primary care, communication, health survey, cross-cultural comparison, patient-centeredness

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Introduction

In today's society, and due to the progressive aging of the population, there is a high prevalence of chronic disorders and comorbidity in patients. In this context, the doctor-patient relationship (DPR) is important to improve the psychosocial approach to patients and provide person-centered care, so the family doctor must develop communication skills, empathy, explore patient expectations, and offer them to participate in therapeutic decisions.¹ The DPR is a fundamental tool for treatment adherence,^{2,3} having demonstrated a small but significant impact on health outcomes.⁴ When this relationship is unsatisfactory, it can lead

to low therapeutic compliance and poor control of chronic diseases.⁵⁻⁷

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Regarding the importance of chronic diseases and comorbidity, it should be noted that, in Spain, 17% of people over 15 years old have some chronic pathology and 46% of those over 65 have some degree of functional dependence.⁸ In this age range, between 72 and 96% of people have some chronic disorder.⁹ This increased burden of disease quadruples resource consumption due to frequent visits, home visits, complementary tests, and pharmacological treatments.^{10,11} Therefore, the role of Primary Care (PC) becomes highly relevant as the backbone and coordinator of care comprehensiveness.¹⁰

The relevance of treatment adherence is a priority for the World Health Organization (WHO), due to its relationship with disease control and progression, quality of life, morbidity, mortality, and healthcare costs.¹² Therefore, the development of an adequate DPR can be a valuable strategy to promote adherence to treatment. However, there are few tools available to assess DPR focused on chronic and multipathological patients, and even fewer that can be used in Spanish.

The PREMEPA (Perception of the Doctor-Patient Relationship) questionnaire was chosen because it allows to evaluate, according to patients' perceptions, the quality of the DPR, based on the treatment, interest shown, information provided, and resolution of the problem for which the patient consults.^{13,14} There is another questionnaire adapted to Spanish and validated in PC (Doctor-Patient Relationship Questionnaire, PDRQ-9), aimed more specifically at patient satisfaction with the DPR,¹⁵ but the PREMEPA questionnaire was chosen because it is deemed more comprehensive. The PDRQ-9 is commonly used to study the DPR,¹⁶ based on the patient's perceived helpful attitude of the general practitioner,¹⁷ while the PREMEPA questionnaire broadly assess DPR according to several components: empathy, courtesy, humanity, trust, patient participation in decision-making, and intention to return for consultation.¹³ The latter 2 dimensions are not considered in the PDRQ-9, making the PREMEPA more focused on shared decision-making. This patient-centered care dynamic is associated with greater patient satisfaction and health outcomes,^{18,19} being of greater relevance in chronic patients who tend to associate pluripathology and greater treatment complexity.²⁰ Upon review of the literature, no references have been found on the use of the PREMEPA questionnaire outside Peru or, therefore, in other research studies in Spain. Nor were there any references to its use specifically in chronic multipathological patients.

Today's globalized context and intense intercultural communication mean that instruments developed in one country can be used in another, allowing for comparison of results. However, to use it, care must be taken in adapting it according to intercultural differences, ensuring that the adapted version is equivalent to the original and verifying its validity and reliability.²¹ This process of cultural

adaptation and validation of a questionnaire is systematized in 2 stages: adaptation and validation.²²

The objective of this study was to carry out the cross-cultural adaptation and subsequent validation through confirmatory factor analysis of the PREMEPA questionnaire for its use in the PC setting in the Spanish adult population with at least 2 chronic diseases.

Materials and Methods

This study is the first part of a broader one that aims to verify the impact, among other aspects, of a proper DPR on the therapeutic adherence of patients with chronic pathology in Primary Care (PC). This project was designed as a descriptive, cross-sectional study, carried out by means of self-administered questionnaires.

Description of the Instrument

The PREMEPA questionnaire was designed and validated in Spanish in Peru for external users of a hospital department. It is a semi-open questionnaire, consisting of 13 items.^{13,14} In its original version, it is composed of 3 blocks, with the first one addressing the perception of the DPR. The second and third blocks refer to general data of the doctor and patient, respectively. This adaptation in our setting focused solely on the first block. This block assesses whether the patient, when consulting a health problem with their doctor, sought previous help, the attitudes and characteristics of the professional perceived by the patient in the consultation, related to respect and courtesy, listening skills, understanding and sensitivity. It also assesses the degree of trust in the doctor's professional abilities and patient participation in the consultation.

Cross-Cultural Adaptation Process

The first part of this study was to culturally adapt the questionnaire. For this aim, the research team developed a modified proposal of the original version validated in the Peruvian population. An equivalent adaptation of linguistic terminology was made according to cultural language differences, maintaining semantic equivalence. This new version was sent to an expert committee, consisting of 9 specialist doctors in Family and Community Medicine trained in Communication. The committee, comprised of between 5 and 10 people as recommended by the literature,²³ proposed improvements and corrections to this adaptation. After identifying and assessing the discrepancies found, 2 members of the research team incorporated the linguistic recommendations and amendments to the wording of each question and item. Answers were adapted to a 5-option Likert-type scale, reaching the definitive version (see Figure 1).

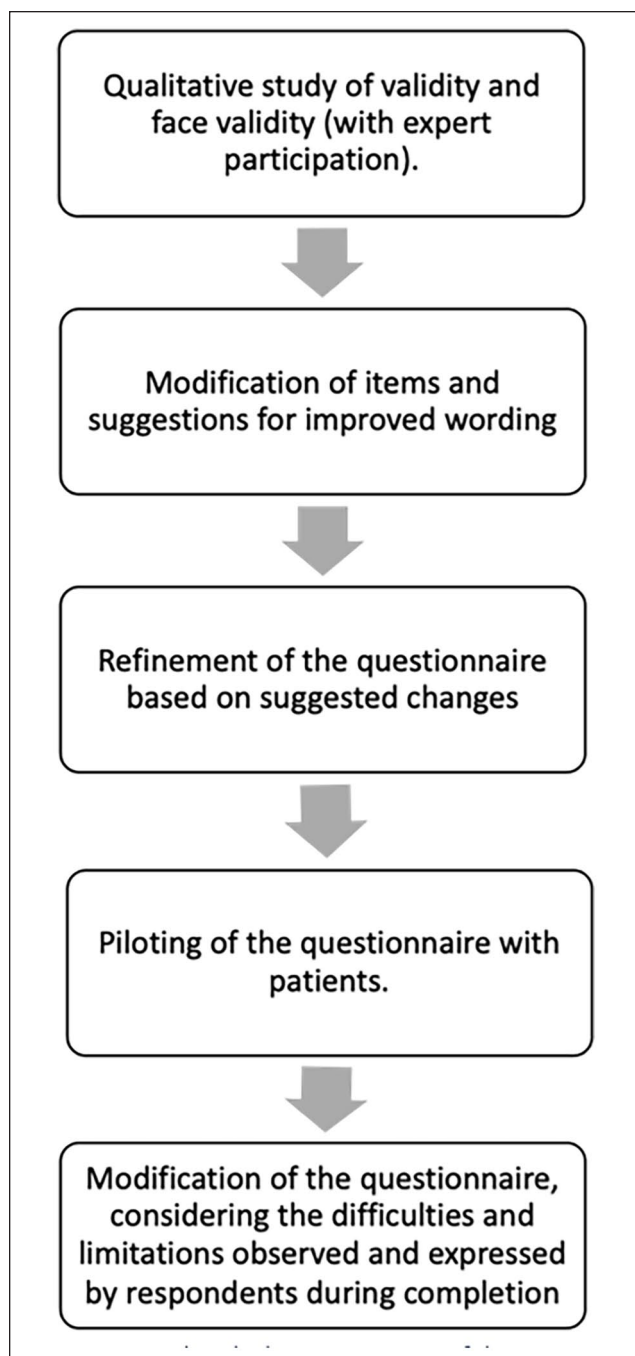


Figure 1. Cross-cultural adaptation process of the PREMEPA questionnaire.

Cognitive Piloting and Qualitative Validation

For cognitive piloting, a sample of 32 patients was purposely selected from 2 Health Centers in the Region of Murcia. This sample size fits the number of 20 to 40 participants, considered appropriate in the literature for the cultural adaptation of a questionnaire.^{22,23} Patients were chosen from the quota of 2 family doctors, aged between 18 and 85,

diagnosed with at least 2 chronic pathologies and basic reading and writing skills. The upper age limit was set because of the high prevalence of some degree of cognitive impairment and some degree of functional dependence in this population, both defined as exclusion criteria. Furthermore, the 85-year limit was set as it exceeds the life expectancy at birth (according to data from the National Institute of Statistics in publication of 2021 for the total population). The sample was obtained between December 2019 and May 2020. Recruitment was from patients who consulted for another reason, met the inclusion criteria, and agreed to participate after explaining the study. These patients were given the final version of the questionnaire, asking whether each item was easily understandable using a dichotomous scale, and offered to suggest alternative wording. The questionnaire was delivered and collected anonymously, being self-administered. The qualitative validation study was conducted on 28 questionnaires after removing 4 that did not answer all items. In the final version, the wording of the 13 items of the questionnaire was modified, maintaining semantic equivalence, adapting terms and linguistic expressions to those commonly used in our culture. Internal consistency was assessed using Cronbach's α coefficient.

Quantitative Validation

Having verified the content validity and internal consistency requirements of the adaptation, the sample size was expanded to confirm the adequate reliability of this new version of the questionnaire and to study its construct validity.²⁴ The sample size calculation for the factorial analysis followed the recommendations of the bibliography of between 5 and 10 participants per item,^{25,26} with a minimum of 100 participants.²⁷ A multicenter study was conducted, randomly selecting a sample of 202 patients from PC consultations from health centers in the Region of Murcia. Patients met the same inclusion and exclusion criteria as for the cross-cultural adaptation pilot. The data collection period for this phase was from February to May 2022. The questionnaire was also self-administered, having been delivered and collected anonymously.

Although the adaptation was performed on the 13 items that make up the first block of the PREMEPA questionnaire, the factor analysis was performed on items 2 to 12, as established in the original questionnaire. Item 1 asks whether the patient sought other help before consulting his or her family physician and item 13 rated the satisfaction of the patient with his/her doctor. In the original version these 2 items were not considered for the scoring of the questionnaire and analysis of DPR. Therefore, these items were not included in the factor analysis.

A confirmatory factorial analysis was conducted as most suitable for studying the results of a questionnaire already validated in Spanish. Before studying the factorial

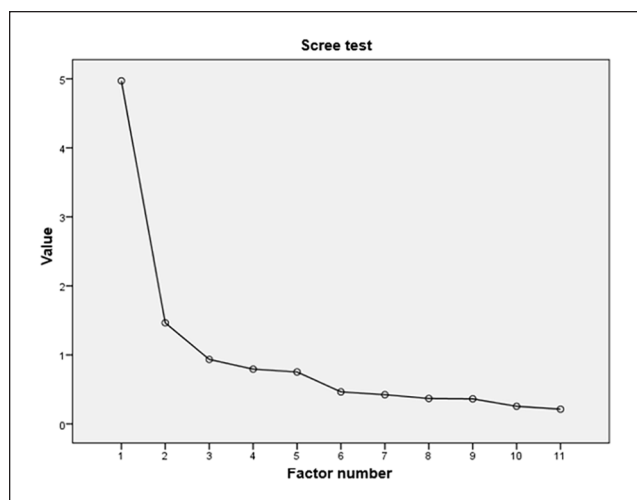


Figure 2. Scree plot. The steepest slope is found for the first 2 factors.

structure, the appropriate structure of the data was verified, using Bartlett's sphericity test, the Kaiser-Meyer-Okin (KMO) adequacy measure, and internal consistency by calculating the contribution of each item to Cronbach's α . The confirmatory factorial analysis used the maximum likelihood method for factor extraction, one of the most recommended methods to indicate the factors that explain the highest percentage of common variance.^{28,29} The communalities study was conducted to show the percentage of each variable explained by the factorial structure. Finally, factor rotation was analyzed. All calculations were performed using the SPSSv22 statistical software.

Results

Participants' Characteristics

The adapted questionnaire was answered by 202 patients diagnosed with at least 2 chronic pathologies, 56.1% were women and 45.7% of participants in the age range between 60 and 75 years, with those under 44 years accounting for only 9.1% of participants.

Questionnaire's Reliability and Qualitative Validity

Cronbach's α for the cognitive pilot was 0.782. This can be considered satisfactory, as an alpha value above 0.7 ensures the internal consistency of a scale.²² The qualitative validation was also adequate, assessed through a complete description of the expert committee, sample selection, and procedure followed in the adaptation. These results of internal consistency and qualitative validation confirm the content validity of this adaptation.^{26,27}

Questionnaire's Construct Validity

Bartlett's test of sphericity reached a statistically significant result, indicating that the sample variables are sufficiently correlated with each other. The KMO test of adequacy had a value of 0.867, which is considered acceptable above 0.8.²⁸ Thus, it assesses the degree to which each variable can be predicted from the others, with a result above 0.7 indicating that the items are satisfactorily interrelated.^{25,28}

For the extraction of factors, the screen test was performed, shown in Figure 2. This graphical method is the most widely used criterion at present and indicates that it should be performed up to the number of factors showing the steepest slope.²⁵ In our case, this corresponds to the first 2 factors, the steepest slope being the first factor, which accounts for 45.2% of the variance.

The goodness-of-fit analysis allowed us to verify the fit of the data to the model (statistically significant result $P < .05$).

The study of communalities confirmed that, in the initial estimation, all the variables were correlated, with values between 0.28 and 0.7.

The factor rotation analysis identified 2 latent factors that group all items. Factor 1 groups 2 items of the participation in decision-making dimension: asking for another treatment/action guidelines and whether the doctor has proposed another treatment/action guidelines (corresponding to items 10 and 11). Factor 2 groups the other items, referring to person-centered communication (encompassing courtesy, empathy, humanity, and trust). The correlation of these factors shows a value of 0.055, equivalent to an angle of 87° in spatial representation of factors, which shows their mutual independence.³⁰

These 2 factors explain 58.5% of the accumulated variance, an adequate result because the factorial solution should explain at least 50% of the total variability.²⁵

After the factor analysis, the internal consistency analysis of the scale was re-evaluated, with Cronbach's α coefficient of 0.711 (CI 95% 0.648-0.767). The study was completed by calculating the contribution of each factor or item to Cronbach's α coefficient, with all items maintaining a score close to 0.7.

Table 1 shows the final questionnaire after the pilot modifications. Table 2 shows the contribution of each of the items to Cronbach's α , while Table 3 shows the distribution of the items in the dimensions that make up the questionnaire. Table 4 presents the distribution of items according to the structure of the components. Supplementary material shows the final questionnaire in Spanish as finally validated.

Discussion

The appropriate internal consistency and qualitative assessment results confirm the content validity of the questionnaire,

Table 1. Validated Version of the PREMEPA Questionnaire Adapted to Our Context.

	No	Yes	If you tick Yes, why didn't you continue there and go to your family doctor?	
1. Before going to see your family doctor, did you seek other help for your health problem?	He/She is not respectful or polite	He/She is very disrespectful and impolite	He/She is moderately respectful and courteous	He/She is quite respectful and courteous
2. How your family doctor treats you in terms of respect and courtesy.?	He/She is not respectful or polite	He/She is very disrespectful and impolite	He/She is moderately respectful and courteous	He/She is quite respectful and courteous
3. To what extent do you feel listened to by your family doctor?	He/She won't let me speak	He/She listens to me, but not very much	He/She lets me talk but doesn't listen to everything I say	He/She listens to everything I want to tell him/her
4. To what extent do you feel understood by your family doctor?	He/She doesn't understand me	I feel misunderstood	I feel moderately understood	I feel totally understood
5. How sensitive is your family doctor to your problem?	He/She has no sensitivity	He/She is not very sensitive	He/She is moderately sensitive	He/She is fully sensitive
6. To what extent do you have confidence in the professional competence of your family doctor?	He/She does not inspire confidence in me	He/She inspires little confidence in me	I have some confidence in his/her ability	I have full confidence in his/her ability
7. Do you understand the explanation given by your family doctor about your health problem?	He/She has not explained my illness	I have little understanding of what he/she has explained to me about my illness.	I have some understanding of what he/she has explained to me about my illness.	I understand clearly what he/she has explained to me about my illness.
8. Do you understand the explanation given by your family doctor about the guidelines to be followed from now on in your case?	He/She has not explained the guidelines to be followed.	I understand little of what he/she has explained to me about the guidelines to be followed.	I have some understanding of the explanation of the guidelines to be followed.	I fully understand the explanation of the guidelines to be followed.
9. Do you agree with the guidelines proposed and/or developed by your family doctor?	No	Yes	If you tick Yes, go to question number 12	
10. Have you asked your family doctor for other treatment options or guidelines to follow?	No	Yes	If you tick Yes, go to question number 12	
11. Has your family doctor suggested other treatment options or guidelines to follow?	No	Yes		
12. Would you recommend your family doctor to a relative or friend?	No	Yes		
13. Please rate your overall satisfaction with your family doctor's consultation on a scale of 0 to 10.	0 being the worst rating and 10 the best rating			

Table 2. Table Analyzing the Internal Consistency of the Questionnaire and the Contribution Made by Each of the Items.

Issue number (according to Table 1)	Item	Total correlation of corrected items	Cronbach's alpha if the item has been removed	Cronbach's alpha	Cronbach's alpha CI
2	COURTESY	0.565	0.675		
3	ESCH	0.604	0.673		
4	COMP	0.646	0.661		
5	HUMANITY	0.619	0.661		
6	TRUST	0.648	0.667		
7	EXPL	0.586	0.668		
8	PAUT	0.367	0.690		
9	PROP	0.392	0.691		
10	SOLI	0.078	0.736		
11	ANOTHER	0.231	0.811		
12	RETURN	0.399	0.691		
	PREMEPA			0.711	0.648-0.767

Table 3. Structure of the Adapted Version of the PREMEPA Questionnaire in Terms of Dimensions and Items.

Dimension	Items
Courtesy	How your family doctor treats you in terms of respect and courtesy?
Empathy	To what extent do you feel listened to by your family doctor? To what extent do you feel understood by your family doctor?
Humanity	How sensitive is your family doctor to your problem?
Trust	To what extent do you have confidence in the professional competence of your family doctor?
Participation	Do you understand the explanation given by your family doctor about your health problem? Do you understand the explanation given by your family doctor about the guidelines to be followed from now on in your case? Do you agree with the guidelines proposed and/or developed by your family doctor? Have you asked your family doctor for other treatment options or guidelines? Has your family doctor suggested or informed you about other treatment options or guidelines to follow?
Return	Would you recommend your family doctor to a relative or friend?

allowing for the further evaluation of its psychometric properties. For this, a multicentric study was designed, unlike the original questionnaire developed in a hospital department. To calculate the sample size, the literature's recommendations were followed, with same characteristics as the target population.²⁹

It should be considered that in the validation of the original questionnaire, internal consistency was assessed using the Kücler-Richarson formula ($K=0.833$, reliability index of 91.3%).^{13,14} This does not allow a direct comparison with our Cronbach's α coefficient results. However, in the CAT (Communication Assessment Tool) questionnaire validation,³¹ which mentions the PREMEPA instrument for its similarities in assessing perception of communicative competencies and DPR, Cronbach's α obtained similar result. Therefore, we believe this adaptation of the PREMEPA questionnaire can be considered suitable for use in Spanish,

fulfilling the initial goal of cognitive piloting by proving its apparent validity. This apparent or logical validity refers to the scale's ability to measure what it intends to measure.²⁴

Carretero-Dios et al advise, as an essential requirement to apply exploratory factorial analysis, to demonstrate the relationship between variables, initially presenting adequate correlation matrix estimators and recommending Bartlett's sphericity test and KMO index.²⁹ This author mentions that confirmatory procedures typically apply exploratory procedures.²⁹ This was the analysis mechanism followed in our study. The significant result of Bartlett's sphericity test and the value above 0.8 in KMO test allow us to consider that the sample meets both conditions, making it acceptable for factorial analysis.

Other authors, like López-Agudo, point out the maximum likelihood and goodness-of-fit tests as the most suitable for factor extraction.²⁴ The significant result of the

Table 4. Structure of the Adapted Version of the PREMEPA Questionnaire in Terms of Factorial Components.

Factor	Items
1. Participation in decision-making	Have you asked your family doctor for other treatment options or guidelines? Has your family doctor suggested or informed you about other treatment options or guidelines to follow?
2. Person-centered communication	How your family doctor treats you in terms of respect and courtesy? To what extent do you feel listened to by your family doctor? To what extent do you feel understood by your family doctor? How sensitive is your family doctor to your problem? To what extent do you have confidence in the professional competence of your family doctor? Do you understand the explanation given by your family doctor about your health problem? Do you understand the explanation given by your family doctor about the guidelines to be followed from now on in your case? Do you agree with the guidelines proposed and/or developed by your family doctor? Would you recommend your family doctor to a relative or friend?

goodness-of-fit test allows the fit of the data to the model to be accepted, while the maximum likelihood method indicates the factors that explain the highest percentage of common variance.²⁸ The factorial solution should explain at least 50% of the total response variability,²⁵ as occurs in our sample.

The factor rotation study indicates the presence of 2 latent factors, with a value higher than 0.40, being the criterion mentioned in the literature as relevant for inclusion in the factorial analysis.²⁸ The spatial representation of factors confirms the relationship between these 2 factors obtained.³⁰

It is also noteworthy that the calculation of Cronbach's α coefficient does not vary substantially when increasing the sample size, confirming the questionnaire's adequate reliability due to its value higher than 0.7. The analysis of the contribution of each item to Cronbach's α with results close to 0.7 concludes that removing any of them would not significantly improve the coefficient. This allows us to maintain the original questionnaire's structure and strengthens this adaptation.

These satisfactory results from the adaptation and validation process of PREMEPA questionnaire show that this adapted version has acceptable construct validity and reliability, suitable for use in our environment. The availability of an instrument to assess DPR in patients with chronic pathology can be very useful to identify the strengths and weaknesses of this relationship. This would allow the physician to improve his communication and relational skills, in order to favor the involvement of these patients towards an adequate adherence to treatment and to improve their health outcomes. Based on our experience using this questionnaire, it should always be anonymized and self-administered to allow total freedom of response from patients and avoid influencing the subsequent DPR.

As for the study limitations, it should be noted that this research was not designed to assess intra and interobserver

reliability or criterion validity, which would be advisable to analyze in subsequent studies. Another notable limitation of this study would be its application to other populations, for which complementary research would be recommended, with prior verification of the use of this version or proposing new versions focused on these populations. Furthermore, it should be mentioned that no references have been found in the literature to the factor analysis of the original version, which has not allowed us to compare the results obtained. Finally, for operational reasons and due to the good result obtained in Cronbach's α coefficient, no re-test was performed in this study, but it would be convenient to carry it out in subsequent studies or other adaptations in other countries or populations.

One of the most commonly used questionnaires to study DPR is the PDRQ,^{15,16} but it has been used in patients with a single pathology,^{32,33} and there are other questionnaires, such as the ReMePaB, which assesses DPR and its association with bioethical principles.³⁴ PREMEPA has been considered the most appropriate due to its person-centered care approach in assessing DPR. Thus, the importance of this study lies in adding a new valid instrument in Spanish to assess DPR quality, especially focused on patients with chronic diseases and multiple pathologies, developed in PC. It is relevant because no previous studies were found that used the original version of the PREMEPA questionnaire in patients with multiple pathologies, in the Spanish population or in the PC setting.

Conclusion

An adaptation of the PREMEPA questionnaire for use in our context has been carried out, through adaptation, cognitive piloting, and both qualitative and quantitative assessment.

A final version of the questionnaire has been obtained, consisting of 13 items, grouped into 2 dimensions that

explain 58.5% of the variance: participation in decision-making and person-centered communication (which encompasses courtesy, empathy, humanity and trust).

The adaptation of the PREMEPA instrument provides a new valid tool for use in Primary Care and to assess the doctor-patient relationship in the Spanish population with a history of chronic diseases.

The use of this questionnaire could be included in routine clinical practice, in the management of chronic patients, to improve their health outcomes by optimizing their modifiable determinants.

Future research could assess whether the results obtained are modified according to the pathologies of the patients, their population profile or whether the results are different in other countries or cultures.

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Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Ethical Considerations

This work has been approved by the ethics committees of the Santa María del Rosell University Hospital and the Morales Meseguer General University Hospital of the Murcian Health System. All participating patients were duly informed and provided their written informed consent for inclusion in the study.

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Supplemental Material

Supplemental material for this article is available online.

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