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ORIGINAL RESEARCH

Cross-cultural adaptation of the Pelvic Girdle Questionnaire (PGQ) into Brazilian Portuguese and clinimetric testing of the PGQ and Roland Morris questionnaire in pregnancy pelvic pain☆

Francine Mendonça de Luna Fagundes, Cristina Maria Nunes Cabral*

Masters and Doctoral Programs in Physical Therapy, Universidade Cidade de São Paulo (UNICID), São Paulo, SP, Brazil

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Abstract
Objective: To translate and cross-culturally adapt the Pelvic Girdle Questionnaire (PGQ) into Brazilian Portuguese and test the measurement properties of the PGQ and the Roland Morris Disability Questionnaire (RMDQ) in women with pelvic pain during pregnancy.
Methods: Thirty pregnant women were included in the assessment of the pre-test of the final version of the PGQ and 100 were included in the assessment of the measurement properties. In the initial assessment, the PGQ, RMDQ, pain numerical rating scale, and WHOQOL-BREF were applied to test the internal consistency and construct validity. In the 48-hour assessment, only the PGQ and RMDQ were applied to test reliability and measurement error; in the reassessment after one month, the PGQ, RMDQ, and global perceived effect scale were applied to evaluate responsiveness.
Results: The PGQ showed adequate internal consistency (Cronbach's alpha = 0.83), substantial reliability ($ICC_{2,1}$ = 0.85), very good measurement error (5%), and good responsiveness ($r = -0.62$). We also observed good correlation with disability and quality of life in the physical health domain, moderate correlation with pain and quality of life in the psychological domain, and poor correlation with quality of life in the domains social relationships and environment. The RMDQ showed adequate internal consistency (Cronbach's alpha = 0.80), substantial reliability ($ICC_{2,1}$ = 0.76), good measurement error (9%), moderate responsiveness ($r = -0.51$), moderate correlation with quality of life in the physical health and psychological domains, and weak correlation with pain and quality of life in the social relationships and environment domains.

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* Corresponding author at: Programa de Mestrado e Doutorado em Fisioterapia, Universidade Cidade de São Paulo, Rua Cesário Galeno 448/475, CEP 03071-000 Tatuapé, São Paulo, SP, Brazil.
E-mail: cristina.cabral@unicid.edu.br (C.M. Cabral).

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Conclusion: The Brazilian Portuguese version of the PGQ showed superior measurement properties compared to the RMDQ, being a valid, reliable, and responsive instrument for assessing patients with pelvic pain during pregnancy.

Introduction

Pelvic pain during pregnancy occurs in any of the pelvic joints and can be defined as pain or discomfort near the sacroiliac joint, between the posterior superior iliac spine and the gluteal fold, which may radiate to the posterior region of the thigh with or without symphysis pubis pain.[1] Pelvic pain is directly linked to the physiological adaptations of pregnancy, in which the dynamic stability of the pelvis is changed.[1] The point prevalence of pelvic pain during pregnancy is 20% and the monthly incidence is 64.7%.[2–4] The diagnosis can be made after excluding lumbar causes by means of functional tests, and palpation. Treatment includes different physical therapy interventions and monitoring of pelvic pain is essential for the management of symptoms that directly affect daily and sexual activities.[5] Thus, proper assessment and clinical follow-up are important in order to improve the effectiveness of treatment.[1,5] Specific questionnaires can assist in monitoring the condition in these patients.[5,6]

A recent study[6] described the increasing number of clinical studies related to pelvic pain during pregnancy and the lack of evidence on the evaluation of the measurement properties of questionnaires that assess pelvic pain in these patients. Studies on pelvic pain during pregnancy use questionnaires originally developed for patients with low back pain, such as the Roland Morris Disability Questionnaire (RMDQ),[7–9] despite the fact that low back pain and pelvic pain during pregnancy are associated with different etiologies and mechanisms. There is evidence that pelvic pain during pregnancy should be distinguished from low back pain that is not related to pregnancy in order to exclude severe spinal conditions such as tumors, infections, or serious inflammatory diseases.[1,5,10,11] Therefore, the Pelvic Girdle Questionnaire (PGQ) was developed as an adequate and specific measure to assess the activities and symptoms of patients with gestational and postpartum pelvic pain.[5]

At present, the validated PGQ is available in English, Norwegian[5] and Spanish[12]; and the translated PGQ is avaliable in French Canadian[13] and Brazilian Portuguese[14]; however, current guidelines[1,6] recommend that pelvic pain questionnaires should be made available to other languages and populations. As most questionnaires and assessment tools are developed in English, instruments must undergo a process of translation and cross-cultural adaptation followed by an evaluation of their measurement properties.[15] As a result, clinicians and researchers can have access to concepts and measures in their own culture and language to assess pelvic pain during pregnancy in a valid and reliable manner.[16]

The objective of this study was to translate and cross-culturally adapt the PGQ to Brazilian Portuguese and test its measurement properties in a sample of patients with pelvic pain during pregnancy. Given that the RMDQ has been used to assess disability due to pelvic pain during pregnancy, a secondary objective was to test the measurement properties of this questionnaire in patients with pelvic pain during pregnancy and correlate its score with the PGQ score.

Methods

Study design

The use of the original questionnaire was approved by the original authors and the study was approved by the Research Ethics Committee of Universidade Cidade de São Paulo (UNICID), São Paulo, SP, Brazil (CAAE: 31984914.1.0000.0064). Data collection was also approved by the administration of a clinic in the city of Taubaté, São Paulo, Brazil. All patients signed the informed consent form.

Sample

Thirty pregnant women were included in the assessment of the pre-test of the final version of the questionnaire and 100 were included in the assessment of the measurement properties. The participants should have pelvic pain during pregnancy and have the ability to read and write in Portuguese. To confirm the diagnosis of pelvic pain during pregnancy, the following tests were conducted: Posterior Pelvic Pain Provocation test, Active Straight Leg Raising test, Pain Provocation of the Long Dorsal Sacroiliac Ligament test, Symphysis Pubis Palpation test, and modified Trendelenburg test.[5] The inclusion criteria were positive test results on the first two tests on one or both sides and a positive test result on at least one of the three other tests.[1] Patients with serious spinal pathologies, cognitive impairment, or symptoms of non-specific low back pain were excluded.

Instruments

Demographic questionnaire

The questionnaire contained information related to the weight, height, age, gestational age, number of pregnancies (including current), number of births, number of miscarriages, and characteristics of the pelvic pain during pregnancy.

Pelvic Girdle Questionnaire (PGQ)

The PGQ consists of 25 questions and is divided into two subscales: the first contains questions from 1 to 20 and evaluates the limitations of daily activities, and the second contains questions 21 to 25 and evaluates the symptoms. The questions are scored according to a Likert scale from 0 to 3, with higher values indicating a higher degree of impairment. To obtain a total score ranging from 0 to 75 points, the points of the 25 questions must be added up and the total must be converted into a percentage ranging from 0% (no impairment) to 100% (wide range of impairment). The subscales are scored in the same way: the activity subscale is scored from 0 to 60 points and the symptom subscale from 0 to 15 points.[5] The value of the subscales is also converted to percentage, as described above for the total score.

Roland Morris Disability Questionnaire (RMDQ)

The RMDQ evaluates the disability associated with low back pain and the Brazilian Portuguese version has acceptable measurement properties.[17,18] The RMDQ consists of 24 items describing everyday activities that are difficult to perform due to low back pain. For every item marked as ''yes'', one point is added to the score, which ranges from 0 to 24 points. The greater the number of positive responses is, the greater the disability. This questionnaire has been used to assess patients with pelvic pain during pregnancy,[7,9,19] but it has not been validated for specific use in this population.

Pain Numerical Rating Scale

The pain numerical rating scale is an 11-point scale (0–10), in which the patient rates the intensity of pain from 0 (no pain) to 10 (pain as bad as could be). In this study, the patients were asked about pain intensity at the time of assessment. This scale has also been translated and adapted for use in the Brazilian population.[20]

World Health Organization Quality of Life-BREF (WHOQOL-BREF)

The WHOQOL-BREF is a shortened version of the quality of life questionnaire WHOQOL-100 developed by the Quality of Life Group of the World Health Organization.[21] The WHOQOL-BREF consists of 26 questions that assess quality of life in four domains: physical health (questions 3, 4, 10, and 15 to 18), psychological (questions 5, 6, 7, 11, 19, and 26), social relationships (questions 20 to 22), and environment (questions 8, 9, 12 to 14, and 23 to 25). The scores are calculated according to a standardized algorithm.[21,22] The total score for each domain ranges from 0 to 100, where 0 corresponds to the worst possible health condition and 100 is the best health condition. The algorithm inverts the score values for questions 3, 4, and 26 to calculate the final score.[21–23]

Global Perceived Effect Scale

The global perceived effect scale, available in Brazilian Portuguese, evaluates the global impression of recovery by comparing the onset of symptoms to the last few days. It is an 11-point numerical scale (−5 to +5) in which −5 is ''vastly worse'', 0 ''no change'', and +5 ''completely recovered''. Higher scores indicate greater recovery from the condition.[20]

Procedures

The study was divided into two stages: translation and cross-cultural adaptation of the PGQ administered to 30 patients and assessment of the measurement properties of the Brazilian Portuguese version of the questionnaire (PGQ-Br) and the RMDQ with 100 patients. The patients were invited to participate in the study while they waited for their medical appointment. After the diagnosis of pelvic pain during pregnancy was confirmed with clinical tests, all instruments were administered to the participants: PGQ-Br, RMDQ, WHOQOL-BREF, pain numerical rating scale, and global perceived effect scale. After 48 h, the PGQ-Br and RMDQ were administered again over the phone. After a month, the PGQ-Br, RMDQ, and global perceived effect scale were administered once more over the phone. In the initial assessment, internal consistency and construct validity were tested. In the 48-hour assessment, reliability and measurement error were tested. Finally, in the 1-month assessment, responsiveness was tested.

Translation and cross-cultural adaptation and measurement property testing

The process of translation and cross-cultural adaptation of the PGQ followed the COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN),[24] which recommends the use of the Guidelines for the Process of Cross-Cultural Adaptation of Self-Report Measures[15] consisting of five parts: Initial translation, Translation synthesis, Back-translation, Expert committee review, and Pre-test of the final version (Table 1). In the last part, the participants had the opportunity to write what they thought each item meant and if they had any difficulty in answering the questionnaire. The definition of the measurement properties is also described in Table 1.

Statistical analysis

In this study, the following hypotheses were tested:

1) The Brazilian Portuguese versions of the PGQ and RMDQ will present an adequate level of internal consistency (Cronbach's alpha > 0.70).
2) The PGQ-Br and RMDQ will present acceptable levels of reliability and measurement error in a test–retest with a 48-hour interval. Reliability values are expected to be moderate to substantial and measurement error is expected to be good to very good.
3) The PGQ-Br and RMDQ will correlate positively with instruments that assess similar constructs. Taking into account the constructs evaluated by each questionnaire, the PGQ-Br is expected to have a moderate to good correlation with the RMDQ and pain numerical rating scale and a moderate correlation with the WHOQOL-BREF. Similarly, the RMDQ is expected to have a moderate to good correlation with the pain numerical rating scale and a moderate correlation with the WHOQOL-BREF.
4) In the responsiveness analysis, the differences of the scores for the initial and 1-month assessments of the PGQ-Br and RMDQ will present a moderate inverse correlation with the global perceived effect scale.

Table 1 Description of the stages of translation and cross-cultural adaptation and test of measurement properties.[15,24]

Stage	Description
Initial translation	Two translators with training and different profile translated the questionnaire independently. Preferably the native language of the translators was the target language translation.
Translation synthesis	Translators synthesized all the translations and produced a consensus version.
Back-translation	Two translators who were not aware of the original questionnaire translated the consensual version of the translation back to the original language of the questionnaire.
Expert committee review	An experts committee analyzed all the versions of the questionnaire and developed what was considered the final version of the questionnaire.
Pre-test of the final version	Final version was tested in 30 patients of the target population.
Reliability test	It is a domain that tests if the questionnaire is measurement error free and includes the following properties: Internal Consistency, Measurement Error (Standard Error of Measurement and Smallest Detectable Change) and Reliability.
Validity test	It is a domain that shows if an instrument actually measures the construct to be measured, which was analyzed in the present study through the construct validity.
Responsiveness test	It is the questionnaire's ability to detect clinical changes over time in the construct being measured, even if these changes are small.

Internal consistency, reliability, and measurement error were analyzed considering the total score and the subscale scores. Internal consistency was analyzed by calculating Cronbach's alpha if an item was deleted. Alpha values are considered adequate when greater than or equal to 0.70 and less than 0.95.[25] Reliability was assessed using a type 2,1 intraclass correlation coefficient (ICC) and their respective confidence intervals (CI) at 95%. ICC values less than 0.40 represent poor reliability, values between 0.40 and 0.75 represent moderate reliability, values between 0.75 and 0.90 substantial reliability, and values greater than 0.90 excellent reliability.[25] The measurement error was calculated using two forms: standard error of measurement (SEM) and smallest detectable change (SDC). The SEM is expressed in units of measurement of the instrument and was calculated by dividing the standard deviation of the mean of the differences by the square root of 2 (standard deviation of differences/$\sqrt{2}$).[26] The percentage of SEM related to a questionnaire's total score should be interpreted as follows: $\leq$5% very good; >5% and $\leq$10% good; >10% and $\leq$20% doubtful; and >20% negative.[25] The SDC was calculated using the formula SDC = $1.645 \times \sqrt{2} \times$ SEM. We considered a CI of 90%, reflecting the SDC for the participant. Values above the SDC indicate a change in the participant's score above the measurement error.[24–27]

Construct validity was assessed using Pearson's correlation test. The total scores of the PGQ-Br were correlated with the scores of the RMDQ, pain numerical rating scale, and WHOQOL-BREF. Correlation coefficient *r* values <0.30 indicate a weak correlation, *r* values $\geq$0.30 and <0.60 indicate moderate correlation, and *r* values $\geq$0.60 indicate good correlation.[24,27–29]

Responsiveness was analyzed using Pearson's correlation coefficient.[29] The differences of the scores for the initial and 1-month assessments of the PGQ-Br and RMDQ were expected to have an inverse correlation with the global perceived effect scale. Correlation coefficient *r* values <0.30 indicate weak correlation, values $\geq$0.30 and <0.60 indicate moderate correlation, and values $\geq$0.60 indicate good correlation.

Ceiling and floor effects were observed using frequency analysis of the total scores obtained in the initial administration of the questionnaire. This effect is present when more than 15% of the sample achieves the maximum (ceiling) or minimum (floor) score in the questionnaire.[24,25,27,28]

Results

The characteristics of the 130 evaluated pregnant women can be found in Table 2. Considering the women assessed in the pre-test of the final version, 7 (23%) were in the second trimester (between 14 and 26 weeks) and 23 (77%) were in the third trimester of pregnancy (between 27 and 40 weeks). In the baseline assessment, 19 women (19%) were in the second trimester and 81 (81%) were in the third trimester.

The translation and cross-cultural adaptation of the PGQ followed all of the steps described in the guidelines.[15] In the back-translation stage, differences in words and phrases were observed between the back-translators. During their meeting, the expert committee agreed that some words had to be cross-culturally adapted into Brazilian Portuguese (Table 3) so that the questionnaire would be more clearly understood by the target population. The pre-test of the final version was completed without reports of difficulties on the part of the respondents, therefore no adjustments to the translated questionnaire were needed. The final version of the PGQ-Br is shown in Appendix A. After this, 100 participants with pelvic pain during pregnancy responded to the final version the PGQ-Br and did not report any difficulty in understanding the questions. The measurement properties of the PGQ-Br and RMDQ were tested and the results can be found in Table 4. There were no ceiling or floor effects.

Table 2 Characteristics of the study participants.

Variable	Pre-test of the final version ($n = 30$)	Baseline ($n = 100$)	1-Month assessment ($n = 100$)
Age (y), mean (SD)	27.8 (8.0)	28.2 (8.6)	NA
Height (cm), mean (SD)	162 (0.04)	162 (0.06)	NA
Weight (kg), mean (SD)	79.1 (17.7)	81.4 (17.8)	–
Weight before pregnancy (kg), mean (SD)	–	71.9 (18.4)	NA
Marital status			
Married, n (%)	20.0 (66.6)	63.0 (63.0)	NA
Educational level, n (%)			
Primary education	12.0 (40.0)	30.0 (30.0)	NA
Secondary education	16.0 (53.4)	64.0 (64.0)	NA
Tertiary education	2.0 (6.6)	6.0 (6.0)	NA
Gestational age (weeks), mean (SD)	30.9 (6.7)	30.5 (5.4)	33.4 (4.9)*
Number of pregnancies, mean (SD)	2.4 (1.7)	2.5 (1.8)	NA
Number of births, mean (SD)	1.1 (1.5)	1.2 (1.4)	NA
Number of miscarriages, mean (SD)	0.2 (0.5)	0.3 (0.7)	NA
Previous pelvic or low back pain, n (%)	9.0 (30.0)	50.0 (50.0)	NA
Limitations of daily activities and symptoms (0–100%), mean (SD)	56.0 (17.8)	57.7 (13.2)	61.2 (13.5)
Activity subscale (0–100%), mean (SD)	54.2 (17.8)	59.4 (12.4)	61.8 (14.8)
Symptom subscale (0–100%), mean (SD)	62.8 (21.4)	51.3 (23.2)	58.5 (21.4)
Disability (0–24 points), mean (SD)	–	13.6 (4.7)	13.8 (6.4)
Current pain intensity (0–10 points), mean (SD)	–	6.5 (1.4)	6.6 (2.6)
Global impression of recovery (−5 to +5 points), mean (SD)	–	−1.6 (1.9)	−0.9 (3.3)
Quality of life (0–100 points), mean (SD)			
Physical health domain	–	51.9 (15.5)	–
Psychological domain	–	57.0 (13.8)	–
Social relationships domain	–	53.9 (13.9)	–
Environment domain	–	51.9 (12.2)	–

''–'', not available; NA, not applicable; *$n = 83$ because 17 patients had already had a baby.

Table 3 Results of the cross-cultural adaptation of the PGQ.

English phrase	Translator 1	Translator 2	Experts committee
Pelvic Girdle Questionnaire	Questionário de assoalho pélvico	Questionário de cintura pélvica	Questionário de dor pélvica gestacional
How problematic is it for you because of your pelvic girdle pain to?	Quão problemático isso é para você por causa da sua dor pélvica?	Quão problemático isso é para você por causa da sua dor pélvica?	O quanto considera difícil realizar as atividades listadas por causa da sua dor pélvica?
Roll over in bed	Rolar na cama	Rolar sobre a cama	Virar-se na cama
How much pain do you experience?	Qual sua intensidade de dor?	Quanta dor você relata?	Quanta dor você sente?
Considerable	Considerável	Considerável	Muita
To what extent because of pelvic girdle pain	A quais contextos a sua dor pélvica se estende	Até quanto devido a dor de cintura pélvica	Por causa de sua dor pélvica

Discussion

In this study, patients with pelvic pain during pregnancy were included after a careful diagnostic assessment using a set of clinical tests recommended by the European guidelines for diagnosis and treatment,[1] as carried out systematically in other studies.[5,12] Women were predominantly in their third trimester of pregnancy. Late pregnancy, after the 20 weeks of gestation,[30] is the period with higher prevalence of pelvic pain during pregnancy of 60–70%.[9,11] This suggests that our sample was representative of women with pelvic pain during pregnancy. As in the original study, the patients who had already had their babies and were experiencing postpartum pain were included in the reassessment because they had presented with the same symptoms during pregnancy.[5] We emphasize that all stages of the guidelines for translation and cross-cultural adaptation and testing of measurement properties were strictly observed.

Table 4 Measurement properties of the Brazilian Portuguese version of Pelvic Girdle Questionnaire and Roland Morris Disability Questionnaire.

Measurement property	PGQ-Br	Classification	RMDQ	Classification
Internal consistency, Cronbach's alpha (Cronbach's alpha if an item was deleted)				
Activity subscale	0.76 (0.73–0.77)	Adequate	NA	
Symptom subscale	0.77 (0.69–0.75)	Adequate	NA	
Total score	0.83 (0.81–0.83)	Adequate	0.80 (0.77 to 0.81)	Adequate
Reliability, $ICC_{2,1}$ (95% CI)				
Activity subscale	0.82 (0.75–0.87)	Substantial	NA	
Symptom subscale	0.88 (0.83–0.92)	Substantial	NA	
Total score	0.85 (0.79–0.90)	Substantial	0.76 (0.64–0.84)	Substantial
Measurement error				
Standard error of measurement				
Activity subscale	5.21%	Good	NA	
Symptom subscale	7.64%	Good	NA	
Total score	5.00%	Very good	2.16 points (9.04%)	Good
Smallest detectable change				
Activity subscale	12.11%		NA	
Symptom subscale	17.77%		NA	
Total score	11.63%		5.02 points (20.91%)	
Construct validity, *r* (*p*)				
Disability	0.69 (0.00)*	Good	0.69 (0.00)*	Good
Quality of life – physical health domain	0.63 (0.00)*	Good	0.52 (0.00)*	Moderate
Quality of life – psychological domain	0.54 (0.00)*	Moderate	0.50 (0.00)*	Moderate
Quality of life – social relationships domain	0.15 (0.13)	Weak	0.29 (0.00)*	Weak
Quality of life – environment domain	0.20 (0.03)*	Weak	0.26 (0.00)*	Weak
Pain	0.35 (0.01)*	Moderate	0.19 (0.05)*	Weak
Responsiveness, *r* (*p*)				
Global Perceived Effect Scale	−0.62 (0.00)	Good	−0.51 (0.00)	Moderate

NA, not applicable; PGQ-Br, Pelvic Girdle Questionnaire; RMDQ, Roland Morris Disability Questionnaire; ICC, intraclass correlation coefficient; CI, confidence interval.
* $p < 0.05$.

Cross-cultural adaptations were made so that the instrument could be understood more clearly by the target population. All questions were reviewed by the expert committee, who did not identify any problems with the adaptations. The pre-test of the final version was completed without reports of difficulties on the part of the respondents. The Brazilian Portuguese version of the PGQ published by Simões et al.[14] evaluated only 12 patients in the pre-test of the final version, although the guidelines[15] recommend the evaluation of 30–40 patients of the target population. Moreover, this study[14] did not evaluate any measurement property, so the version cannot be applied in the Brazilian population.

This study included an appropriate number of participants for the analysis of all of the measurement properties.[15,24,25,27] All hypotheses for the measurement properties related to the PGQ-Br were tested, and the results confirmed that it is a reproducible questionnaire that assesses the same constructs as in the other versions.[5,12] Internal consistency was adequate, reliability was substantial, and measurement error was very good. For construct validity, the PGQ-Br showed a good correlation with disability and quality of life in the physical health domain and a moderate correlation with pain and quality of life in the psychological domain. The weak correlation with the domains social relationships and environment can be justified by the original purpose of the PGQ-Br, which is to evaluate daily activity limitations and symptoms of pelvic pain during pregnancy and is not related to these domains of quality of life. As in the other versions, no ceiling or floor effects were found.

Comparing the English, Norwegian[5] and Spanish[12] versions of the PGQ to the Brazilian Portuguese version, a similarity between the results can be observed in all measurement properties. The only exception is that the Spanish[12] version did not assess SDC. Moreover, in the other versions,[5,12] the responsiveness of the PGQ was not tested. The present study is the first to analyze this property, following the COSMIN[27] recommendations. Responsiveness was analyzed by correlating the differences of the means of the questionnaire. This analysis was chosen because this study did not offer a clinical intervention and because there are no other instruments considered the gold standard for the assessment of pelvic pain during pregnancy.[24,27,28] A good inverse correlation was noted between the differences in the PGQ-Br scores in the initial and 1-month assessments and the global perceived effect scale. Thus, we believe that the PGQ-Br is responsive to clinical changes in these patients over time.

The total score of the PGQ-Br was used for faster and direct analysis of the overall impairment of the participants. We suggest an analysis of the final score of the subscales if the purpose of the evaluation is to specifically

determine the impairment of the limitations of daily activities or symptoms.[5]

The RMDQ showed adequate levels of internal consistency, substantial reliability, and good measurement error. The value of the SDC was considered high for the total score of the questionnaire, and this can make it difficult to use the RMDQ questionnaire in longitudinal studies with pregnant women because a very large variation in the score would be needed to identify a real clinical change in the patient's condition. For construct validity, results showed moderate correlation with quality of life in the domains physical health and psychological and weak correlation with pain and the domains environment and social relationships. The weak correlation with pain showed a negative and troubling point, as this is the main construct related to the symptoms of the participants of this study. There were no ceiling or floor effects, and responsiveness was moderate. Based on the analysis of the measurement properties, we believe that the RMDQ is acceptable for use in patients with pelvic pain during pregnancy. However, when compared to the PGQ-Br, the RMDQ did not show such positive results for the measurement properties.

Pelvic pain during pregnancy and non-specific low back pain have similar characteristics. In the absence of a specific questionnaire, the RMDQ was the option of choice in academic and clinical practice in patients with pelvic pain during pregnancy. With the development of the PGQ and subsequent analysis of important issues from the clinical point of view, it was clear that there are no questions that reflect the specific characteristics of pelvic pain during pregnancy in the low back pain questionnaires. Based on this information, the items of the PGQ were tested until they included a set of activities and symptoms specifically related to pelvic pain as well as questions specifically related to low back pain.[5]

The results of this study indicate that the PGQ-Br can make a positive contribution to clinical practice, optimizing assessments, decision-making, follow-up, and reassessments. The PGQ-Br is the only questionnaire that assesses pain and limitations of daily activities in women with pelvic pain during pregnancy, and its use during clinical assessment can certainly improve the diagnosis and management of pelvic pain during pregnancy. Further, it can assist research in the outcomes of observational, cohort, and longitudinal studies. The measurement properties of the PGQ-Br were adequately tested and showed acceptable results, confirming that it is a valid and reliable measurement questionnaire for patients with pelvic pain during pregnancy.

Conclusion

We conclude that the PGQ-Br has been validated for Brazilian patients with pelvic pain during pregnancy because it showed acceptable results for all tested measurement properties and can be used by clinicians and researchers. The properties of the RMDQ were also tested, but the results were not superior to those of the PGQ-Br. Thus, we elect the PGQ-Br as the only specific instrument that assesses the limitations of daily activities and symptoms of patients with pelvic pain during pregnancy.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent

Informed consent was obtained from all individual participants included in the study.

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Conflicts of interest

The authors declare no conflicts of interest.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.bjpt.2018.11.003.

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