



Cross-cultural Adaptation of the Pelvic Girdle Questionnaire for the Polish Population

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ABSTRACT

Objective: The purpose of this study was to translate and culturally adapt the Pelvic Girdle Questionnaire (PGQ) into Polish to allow pelvic girdle pain (PGP) assessment in Polish women.

Methods: The translation process comprised 4 stages: forward translation, backward translation, committee review, and pretest. We then conducted a pilot study of the final version of the questionnaire in 49 women (mean age: 31.2 years, standard deviation: 3.74 years) who had PGP when pregnant or within a year postpartum.

Results: The internal consistency of the newly created questionnaire assessed with Cronbach's α was 0.916.

Conclusion: The internal consistency of the process of translation and cross-cultural adaptation of the Polish version of the PGQ was satisfactory. The Polish version of the PGQ may be used both in clinical practice and for research among Polish women with PGP. (*J Manipulative Physiol Ther* 2018;41:698-703)

Key Indexing Terms: *Pelvic Girdle Pain; Pregnancy; Postpartum Period; Outcomes Assessment*

INTRODUCTION

Pregnancy-related low back pain (LBP) and pelvic girdle pain (PGP) are common in pregnant women worldwide.^{1,2} Numerous authors fail to differentiate between these 2 kinds of pain. There is a growing evidence that PGP is a distinct group of motor system disorders with a unique clinical presentation and the need for specific management.^{1,3} Pelvic girdle pain is usually pregnancy related. The pain is felt between the iliac crest and the lower parts of gluteal folds. In the diagnostic procedure, the pain and functional disorders need to be reproduced with specific diagnostic tests.¹

Pelvic girdle pain significantly affects a pregnant

woman's quality of life. The prevalence of the disorder during pregnancy is about 20%.^{1,2} Pelvic girdle pain leads to difficulties in everyday life activities, increased stress levels, lower engagement in social life, decreased efficiency at school or at work, and lowered sexual life satisfaction.^{4,5} There are also significant economy-related consequences of PGP: in Scandinavia it is one of the most common reasons pregnant women take sick leave.⁶⁻⁸ Because of its particular clinical evidence, relatively high prevalence,^{1,2} impact on quality of life,^{4,5} and economy-related consequences,⁶ PGP should be in the focus of the health care system.^{5,9}

Assessments of PGP and treatment processes require reliable and up-to-date tools. There is clinical rationale to classify LBP and PGP as 2 separate disorders. Therefore, standardized tools for assessing LBP disorders may not be appropriate for PGP patients.¹⁰

The condition-specific Pelvic Girdle Questionnaire (PGQ) was published in 2011.¹¹ The PGQ is a standardized, reliable, and valid questionnaire designed to assess the symptom intensity, related disability, and functional limitations in patients with PGP. The questionnaire is appropriate both for the initial pain assessment and for the treatment evaluation in clinical practice, and it is used in scientific studies.¹²⁻¹⁶

Translations of the PGQ into many languages are ongoing and have been published in Norwegian, English, French, and Spanish.^{11,17,18} Poland so far has lacked a questionnaire that assesses PGP, and numerous Polish

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patients with the disorder have been looking for advice in orthopedic and physiotherapy clinics. A Polish version of the PGQ will make it possible to examine PGP in Poland and to compare results with those from other countries. The objective of the study was to translate and culturally adapt the PGQ into the Polish language to enable assessment of pain syndromes of the pelvic girdle in Polish women.

METHODS

The plan for the translation process was based on guidelines proposed by Guillemin et al.¹⁹ The source was the English version of the PGQ.¹¹ The process was as follows:

- 1 Obtaining the consent of the original author.
- 2 Stage I. Forward translation: Maintaining the faithfulness of the transcription and of the translation into Polish.
- 3 Stage II. Backward translation/re-translation: Translating the newly translated version back into the original.
- 4 Stage III. Committee review: Creating the preliminary version of the Polish questionnaire.
- 5 Stage IV. Pretesting the Polish version of the questionnaire.
- 6 Pilot study with the final Polish version of the questionnaire.

Before translating the PGQ into Polish, we obtained the written consent of the first author of the questionnaire,¹¹ and the ethics committee of Jozef Pilsudski's University of Physical Education in Warsaw gave approval. We then proceeded to the first stage of the process, which comprised direct translations of the source questionnaire. The translations were conducted by 4 independent native Polish translators who are proficient in English. Among the 4 translators were 3 experienced physiotherapists who deal with LBP and PGP; the fourth translator was proficient in English and was an English philologist.

In stage II, backward translation, the obtained version was translated back into English by 4 new translators: 3 English philologists and a political scientist, each of whom was proficient in English.

A commission of 2 experienced physiotherapists assessed all versions of the translations and analyzed the source questionnaire and the original questionnaire (in Norwegian). The commission assessed whether the questionnaires could be put to the same use as the original questionnaire. The commission evaluated the intercultural equivalence and the reconstruction faithfulness of the new version, taking into consideration semantic equivalence (the meaning of the words chosen); equivalence of idiomatic expressions (adequate translation of colloquial language

and idiomatic expressions); empirical equivalence (whether real-life circumstances defined in the source questionnaire are relevant for the cultural context of the target version); and equivalence of graphic design.

The pretest consisted of 5 evaluations by different specialists (physiotherapists, a lawyer, a medical student) fluent in English. Their task was to compare the 2 versions (the English source questionnaire and the Polish target questionnaire) and to evaluate the target questionnaire. The pretest participants rated each item by answering the following questions (maximum score = 4):

- 1 Is the item precise and unambiguous? Does it reflect the item from the source version properly? Is it understandable for everyone? (semantic equivalence = 1 point)
- 2 Are the idioms and colloquial phrases clear? Do they reflect well those from the source version? (idiomatic equivalence = 1 point)
- 3 Does the mentioned activity play the same role in Polish cultural context? (experiential equivalence = 1 point)
- 4 Is the translated phrase conceptually equivalent? Does it have the same area of meaning as the source phrase? (conceptual equivalence = 1 point)

Participants were also encouraged to write their points down for each item as well as at the end of the questionnaire. On this basis, we introduced the final amendments in the target version. We chose participants who had different educations and who came from different environments for subsequent stages and for the pretest alike so that the questionnaire would suit the largest possible group of target respondents. Because of the small number of pretest participants, we did not conduct a statistical analysis of the pretest.

Having analyzed the translations from stages I and II and the remarks made at the pretest stage, we designed the final Polish version of the PGQ. We then used it in the pilot study. The pilot study population consisted of 49 women with PGP who were pregnant or within a year postpartum. The study population comprised participants in childbirth classes and fitness classes aimed at women and patients of a physiotherapeutic office that specializes in perinatal and urogynecologic care. The criterion for participant inclusion in the study was pain located in an area typical of PGP. Only the women who felt pain in areas marked on relevant diagrams completed the questionnaire.

The pilot study results were then analyzed. To calculate the total PGQ score, all scores were summarized and divided by the total possible score of 75 (maximum possible score = 60 for activity and 15 for symptoms), subsequently recalculated as a percentage; the resulting scores ranged from 0 (no disability) to 100% (severe disability). For each "not applicable" answer to an item, 3 points were deducted from the total possible score.

Table 1. Participants' Baseline Characteristics

Characteristic	Pregnant (n = 43)		Postpartum (n = 6)		Total (n = 49)	
	Mean	SD	Mean	SD	Mean	SD
Age (y)	29.9	3.4	31.8	5.7	30.2	3.7
Gestational age (wk)	31.1	4.3	—	—	—	—
Height (cm)	167.9	6.5	164.7	7.5	167.5	6.7
Weight (kg)	74.1	12	68	13.1	70.7	12.1
Body mass index	25.2	3.8	25.1	4.8	25.2	3.8

SD, standard deviation.

Table 2. Study Population Education and Place of Residence, n = 49

Characteristic	N (%)
Education	
Primary	1 (2)
Secondary	8 (16)
Vocational	1 (2)
Higher	39 (80)
Place of residence	
Countryside	0 (0)
Town (<100 000 inhabitants)	4 (8)
City (>100 000 inhabitants)	45 (92)

Statistical Analysis

To assess the accuracy and scale internal consistency, we calculated Cronbach's α . Psychometric parameters of the scale were also calculated.²⁰ Using Cronbach's α reliability coefficient, we calculated the standard error of the measurement. This value is useful in estimating the real interval for true score and corrected for error of measurement by adding (and subtracting) the correction, which represents half of the confidence interval width. For example, when the observed result is 40%, a true score would be within the range 29% to 51%.

RESULTS

The mean age of the study population was 30.2 years (range: 23-39 years). Table 1 lists the participants' baseline characteristics. Participant characteristics in terms of education and place of residence are summarized in Table 2.

Table 3. Pilot Study Scores of the Polish Version of the Pelvic Girdle Questionnaire^a

Scale	Pregnant (n = 43)		Postpartum (n = 6)		Total (n = 49)	
	Mean	SD	Mean	SD	Mean	SD
Total (%)	35.4	19.4	34.3	20.4	35.3	19.1
Activity subscale	34.2	20.4	32.9	20	34.1	20
Symptom subscale	39.7	22.8	40	23.9	40.1	22.7

SD, standard deviation.

^a Scoring procedure: The scores were summarized and recalculated to percentage scores. For a total score, the maximum possible outcome was 75, for activity and symptoms subscales 60 and 15, respectively. If the respondent chose the option "not applicable" to an item, 3 points were deducted from the total possible score as well as activity subscale maximum possible score.

Table 4. Psychometric Parameters of the PGQ-PL

PGQ-PL total score mean standard deviation	35.30 (19.07)
Observed score standard error	7.65
True Score Confidence Interval (Corrections to Observed Score)	
Probability	Value
0.85	11.01
0.90	12.58
0.95	15.00
0.99	19.71

PGQ-PL, Polish Version of the Pelvic Girdle Questionnaire.

There were several language difficulties in translating the questionnaire. Item 23 was the most widely discussed question. Although physiotherapist translators were well familiar with it, the remaining translators found it misleading. In addition, the term *leg giving way* does not have a Polish equivalent. Based on the clinical experience of commission members, we decided to use the compound term *osłabienie/uciekanie nogi/nóg*, or "weakening or dragging of one or both legs behind." It was the most common way in which patients described their symptoms. The subsequent disputable items were 11 (*noszenie lekkich rzeczy*) and 12 (*podnoszenie ciężkich rzeczy*), on which we found some discrepancies between the source English version and the original Norwegian version. We contacted the original author to clarify doubts and to better understand the questions. On this basis, the commission decided to use 2 different terms for these 2 different questions. Rather than 1 word, *carry*, which was used in the English version for both items 11 and 12, we used the word *noszenie* or

“carrying” for question 11 and *podnoszenie* or “lifting” for question 12. “Carrying” implies transport of an item and does not fully conform to the original, standardized Norwegian version. The change may seem minute, yet when we analyzed the activities these 2 verbs denote, we realized that they implied different distributions of forces and therefore different loads on the pelvis.

The pilot study scores of the Polish version of the Pelvic Girdle Questionnaire are listed in Table 3. Cronbach’s α reached a value of 0.916. On analysis of scale psychometric parameters, we propose considering values $>56\%$ (the calculated value for the 80th percentile) as moderately increased and values $>68\%$ (90th percentile) as significantly increased. Table 4 summarizes the psychometric parameters of the tool.

DISCUSSION

The current study resulted in a satisfactory Polish-language translation of the PGQ. The validation process had a high level of internal consistency as measured with Cronbach’s α .

So far, there has been no tool in Polish to assess PGP-related disorders. Grotle et al²¹ compared the PGQ with other questionnaires used for assessing PGP: Oswestry Disability Index, Disability Rating Index, Fear-Avoidance Beliefs Questionnaire, Pain Catastrophizing Scale, and Medical Outcomes Study 36-Item Short-Form Health Survey. The PGQ had the highest differentiation accuracy and can be recommended for assessment of both the symptoms and the disability related to PGP. Because of its high sensitivity, the tool may be used for assessing therapeutic effects in clinical practice and in scientific studies. Bishop et al¹⁵ stated that the PGQ is the recommended primary outcome for a future trial. The Polish-language version may facilitate the diagnostic and therapeutic process for Polish women, thus resulting in more reliable initial symptom assessment and evaluation of treatment. It will also facilitate further research on PGP in Poland.

Translation and cross-cultural adaptation of a new language version of a questionnaire constitute a long and painstaking process. It consists not only of word-by-word translation of individual questions, but also in cultural and linguistic adjustment of the tool so that it is clear and understandable for a given population. Girard et al,¹⁷ while working on the French version of the PGQ, encountered difficulties similar to those we faced. They handled questions 11 and 12 and proceeded in a manner similar to ours: in question 12 they used a word that did not denote the activity of transporting. For question 23, Girard et al¹⁷ also used an additional descriptive term so that the question was clear and understandable for a person without a medical education. Question 23 was also the least understood item in the Spanish PGQ validation study.¹⁸

In their PGQ version, Girard et al¹⁷ added body diagrams with the PGP location marked. In the presented Polish version, we decided not to include the diagrams. It is highly recommended, though, that before a patient completes her questionnaire, she undergoes the relevant diagnostic tests and understands the character of her disorder and the material covered in the questionnaire.

Testing the internal consistency of the scale yielded a satisfactory result with a Cronbach α of 0.916. The Spanish version reached a value of 0.96, indicating suitable consistency.¹⁸ Therefore, we may propose that our scale is accurate and reliable. A complete validation study is recommended to calculate psychometric properties such as content and convergent validity, floor and ceiling effects, discriminatory ability, and test–retest reliability. These items will be the subject of our future PGP studies and will be published after completion of the studies.

One of the strengths of the current study was the engagement of participants from many different environments and with different specializations. An analysis of their remarks and comments proved that the questionnaire is suitable for a wide variety of target patients. When we doubted the wording of the final version of the questionnaire, we consulted the original author, which might be considered another strength of this study.

Limitations

We based PGP diagnosis on participants’ reports and pain maps, with no clinical examination. This method of classifying PGP is quite common in the literature,^{15,22-24} and previous studies have found that self-reported PGP correlates well with clinically examined PGP.^{18,25,26}

A larger group of pretest participants would certainly have increased the value of the research described here. Because of the small number of participants, the data for these participants were not statistically analyzed. A possible limitation may be that there was little difference in educational level and place of residency among our pilot study population. Overcoming this limitation would require a larger study with the participants reflecting the general Polish population. However, in a previous adaptation study, the analysis found no correlation between educational level and PGQ understanding.¹⁷

CONCLUSIONS

The internal consistency of the translation and cross-cultural adaptation of the Polish version of the PGQ was satisfactory. This new tool, now available in Polish, should become widely popularized and used by health care workers who treat obstetric patients and by scientists who study PGP. Further testing of the tool is suggested.

FUNDING SOURCES AND CONFLICTS OF INTEREST

No funding sources or conflicts of interest were reported for this study.

CONTRIBUTORSHIP INFORMATION

Concept development (provided idea for the research): B.S.

Design (planned the methods to generate the results): M.S., A.T.-B., B.S.

Supervision (provided oversight, responsible for organization and implementation, writing of the manuscript): A.T.-B.

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Other (participated in writing): M.S., A.T.-B., B.S., A.T., W.R.

Practical Applications

- The cross-cultural adaptation of the PGQ for the Polish population is a ready-to-use tool that can become a substantial part of pelvic girdle pain assessment in both clinical practice and research settings. To date, no such tool was available in the Polish language.
- The newly adapted version of the PGQ will make it possible to examine pelvic girdle pain in Polish women and to compare results with those from other countries.
- Translations of the PGQ into many languages are ongoing; thus, publication of this article may be useful for other researchers preparing their adaptation study of the PGQ.

APPENDIX A. SUPPLEMENTARY DATA

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jmpt.2018.04.002>.

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