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Original Article

Translation and cross-cultural adaptation of the Get Active Questionnaire for Pregnancy (GAQ-P) to Spanish population

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ABSTRACT

Background: Physical activity during pregnancy reduces the risk of developing pregnancy complications. Despite the strong recommendations for physical activity during pregnancy, the compliance is suboptimal. The *Get Active Questionnaire for Pregnancy (GAQ-P)*, developed by CESP provides a screening tool for physical activity contraindications and promotes physical activity during pregnancy. The aim of this study is to translate, and perform a cross-cultural adaptation of the GAQ-P to be used in Spanish population.
Methods: A multidisciplinary expert group was set-up for the validation process including experts in obstetrics and gynecology, sports medicine, physical activity and sports, and midwives. The translation and cultural adaptation of the GAQ-P and associated Health Care Provider Consultation Form followed the International Society for Pharmaecoeconomics and Outcomes Research guidelines.
Results: The validated Spanish version of the GAQ-P, and the Health Care Provider Consultation Form for Prenatal Physical Activity was achieved. During the cognitive debriefing, we included 73 stakeholders (pregnant women, healthcare professionals and physical activity and sports professionals) from different regions of Spain, to improve the cultural aspects and the comprehensibility of the translation.
Conclusions: Following the validation process, we have obtained a reliable evidence-based screening tool to be used in Spanish, aiming to reduce the barriers for most women to be physically active during pregnancy, and assisting healthcare providers and physical activity professionals in the identification of women that have contraindications for physical activity during pregnancy.

Introduction

Prenatal physical activity (PA) has a powerful influence for optimizing the health of two generations: the mother and child. Extensive scientific evidence supports the safety and benefits of prenatal PA for most pregnant individuals.[1–3] Currently, PA guidelines around the world recommend engaging in at least 150 min of moderate-intensity PA spread over three or more days of the week throughout pregnancy.[1,3] Nevertheless, studies including pregnant women conclude that only 47 % of women meet these PA recommendations[4,5]

In Spain, the national health insurance system guideline recommendations strongly encourage physical activity during pregnancy.[6] While self-reported questionnaires indicate 54.5 %, 61.9 % and 59.1 % of pregnant women achieve current recommendations in the first, second and third trimesters, respectively, objective assessment of PA via accelerometer found much lower compliance (~22 %).[7]

There are many barriers for pregnant women to become active during pregnancy such as pregnancy related symptoms, sociocultural

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and personal beliefs, lack of information from health care professionals, emotional changes, and stigma among others. To obtain medical approval for prenatal physical activity was meant to identify conditions in which physical activity could potentially be harmful to mother or foetus, and we believe that the use of the Get Active Questionnaire for Pregnancy (GAQ-P) will help to reduce some of these barriers, mainly those related to lack of information and personal beliefs,[8] https://csep.ca/2021/05/27/get-active-questionnaire-for-pregnancy/

The goal of the GAQ-P is to empower women to make informed decisions about whether or not they need to speak to a healthcare provider before beginning or continuing physical activity during pregnancy. In case of concern, pregnant women may discuss with their healthcare providers, about initiation or continuation of a physical activity program during pregnancy, to ensure for safety for both mother and foetus, and individualized advice is essential for achieving benefits and avoiding risks.

The GAQ-P facilitates this discussion since it provides a medical screening for physical activity contraindications, measure the physical activity level of each pregnant women, and promotes a physical activity prescription by a health care professional or physical activity professional.[9] This tool facilitates the communication between the health care provider, the physical activity professional and the pregnant woman.

There are around 500 million native Spanish speakers globally and Spain accounts with 48 million people that potentially users of the questionnaire.[10] The original instrument was developed in English by the Canadian Society for Exercise Physiology.[9] Therefore, a translation and cultural adaptation into Spanish will help to disseminate the instrument for clinical and research use and make it accessible to a large proportion of pregnant women.

The purpose of the present study was to translate and culturally validate the GAQ-P and the HealthCare Provider (HCP) Consultation Form in Spanish-by-Spanish population, using the ISPOR guidelines.[11]

Methods

We used the International Society for Pharmaecoeconomics and Outcomes Research (ISPOR) guidelines,[11] as a framework for the cross-cultural adaptation and translation of the GAQ-P and HCP Consultation Form for Prenatal Physical Activity for use in Spanish.

An independent research team was setup for the development of the validation process, including three researchers, from three hospitals in Barcelona, Spain: Hospital Clinic, Hospital Sant Joan de Déu and Hospital Vall dHebron.

This study was approved by the *Comité de Ética de Investigación con Medicamentos del* Hospital Universitario Vall d'Hebron (PR(AMI)444/2023), and by the Comitè d'Ètica d'Investigacions Clíniques de l'Administració Esportiva de Catalunya (021/CEICGC/2023). All the participants involved in this research, gave written consent before providing feedback on the translated documents.

Results

1. **Preparation**
   The independent research team requested authorization to the Canadian Society for Exercise Physiology (CSEP) to use and translate the instrument in January 2023.
2. **First translation**
   Two translators who are native Spanish speakers and residents of Spain, who constituted the translation panel, performed the forward translation. These individuals conducted two independent literal translations of the original English instrument to Spanish, in order to avoid persons own style of writing (V1 and V2).
3. **Reconciliation**
   The forward translations were compared by the translation panel consisted in the key in country person (one of the members of the research team) and the forward translators (other two members of the research team). The panel discussed discrepancies between V1 to V2, and then created a third version of the instrument according to the discussion (V3).
4. **Back Translation**
   Two independent translators, who were native English speakers who were fluent in Spanish, each performed a back translation using V3.
5. **Revision of Back translation**
   The research team and the instrument developer reviewed the back translations (V4 and V5) against the original English version to identify discrepancies.
6. **Harmonization**
   When an instrument is being adapted to other languages, the back translations produced in other countries should be compared, as suggested by the TCA Group, to achieve a consistent approach to translation problems. At the beginning of the validation process, the GAQ-P and HP Consultation form were published in French and Polish languages.
7. **Cognitive debriefing**
   This step aims to assess the level of comprehensibility and cognitive equivalence of the translation, to test any translation alternatives, to highlight any item that may be inappropriate at a conceptual level. Responders should be native speakers of the target language who adequately represent the target population. In the current study, a total of 73 of respondents reviewed the revised V3 of the instrument. Forty-three pregnant women (maternal age 33.5 ± 5.5 years, gestational age 27.3 ± 11 weeks of gestation), and 30 professionals (midwives 33 %, obstetrics & gynaecology physicians 33 % and physical activity and sports professionals33 %) from diverse regions of Spain included Cataluña, Madrid, Valencia, Galicia, Islas Baleares and Aragón provided feedback. Main characteristics of the cognitive debriefing questionnaire responders are shown in Table 1.
8. **Revision of debriefing results**
   The debriefing results were revised against the original version of the instrument to assure cultural relevance. The research team performed this step. Changes kept the semantic value of the original phrases.
9. **Syntax and orthographic revision**
   Proofreading was performed to check for minor errors, which have been missed during the translation process. The research team checked the final translation and corrected any remaining spelling, diacritical, grammatical or other errors.
10. **Final report**
    Finally, we performed a brief communication of the description of all translation and cultural adaptation decisions, which may be

Table 1
Main characteristics of the responders to the Cognitive Debriefing of the Get Active Questionnaire for Pregnancy and Healthcare Provider Consultation form, in Spanish.

Characteristics of pregnant women (n = 43)	
	mean±sd
Maternal age (years)	33.5 ± 5.5
Gestational Age (weeks)	27.3 ± 11.9
Educational level	**%**
Primary-Secondary school	4, 9
College Education	2, 4
Professional studies	10, 23
University studies	27, 62
Characteristics of professionals (n = 30)	
Type of professional	**n (%)**
Obs&Gyn doctor	10 (33 %)
Midwives	10 (33 %)
Qualified Exercise Professional	10 (33 %)

useful when interpretation derivative data sets of informing other future translations of the same instrument.

After contacting the Spanish scientific societies of both Obstetrics and Gynaecology (Sociedad Española de Obstetricia y Ginecología, SEGO), and Sports Medicine (Sociedad Española de Medicina del Deporte SEMED/FEMEDE) and explaining the validation process of the Spanish version of the questionnaire, the Spanish version of this questionnaire was certified by these societies, which will help to disseminate it through the clinical practice. These societies authorized to use their logos in the print version of the document.

Table 2, in the supplementary material, summarizes the results of the translation and adaptation of the Get Active questionnaire for Pregnancy (GAQ-P) and The HCP Consultation Form into Spanish according to the ISPOR guidelines.

Annex 1 and 2 show the final report of the GAQ-P and HCP Consultation form in Spanish, respectively.

Discussion

This study provides a translated and culturally adapted Spanish version of the GAQ-P, following international recommendations for this process. Our approach adheres to a comprehensive international guideline that outlines the systematic steps essential for accurately translating and culturally adapting instruments.[11]

During the process, meaning preservation and cultural adaptation were ensured in this validation. The back-translation discrepancies were minor despite the cultural and linguistic differences. Forty three pregnant women completed the GAQ-P Spanish version, in the cognitive debriefing, with external validation since they were from different areas of Spain, ages, and educational level. In addition, 30 professionals, from different areas of knowledge, dealing with pregnant women were included in the cognitive debriefing. All these aspects suggest a useful content validity without any patients finding the items unclear or irrelevant.

We believe that using an instrument from a different culture should be dealt with caution, since it is not just a “term replacement” but also a semantic, conceptual, and idiomatic equivalency unchanged from the original English document. An example of inclusion of the cultural aspects is the change of the definition of the light intensity physical activity. In the English version, “walking to get the mail” was included. In Spain, this activity is not frequent since 81 % of Spain’s population is urban population and that many people in cities live in flats rather than houses.

Therefore, the research team considered including instead in the Spanish final version “ir a la compra, o llevar a pasear el perro”, meaning in English “go shopping or take the dog for a walk”. These actions, in terms of physical activity could be equivalent to “walking to get the mail”. In addition, it has been changed “Obstetric Health Care Provider” in the English version by “obstetra-ginecólogo o matrona” in the Spanish version, meaning “consultant in obstetrics, gynecology or midwife”. This cultural adaptation will help to better understand the questionnaire, and therefore to better achieve the aims of the questionnaire in the Spanish population.

During pregnancy, half of women decrease the physical activity in our setting[7] and are not compliant with current recommendations on physical activity during pregnancy.[1,3,6] This phenomenon holds notable implications for maternal and fetal health, as regular physical activity during pregnancy has been associated with various positive outcomes, including improved cardiovascular health, reduced risk of gestational diabetes, and enhanced psychological well-being.[12,13] However, the observed reluctance or inability of pregnant women to adhere to these guidelines suggests a gap in the dissemination and uptake of crucial information regarding prenatal care.

Despite the several guidelines for physical activity during pregnancy,[1,3,6] this scientific knowledge has not yet been well translated to the healthcare providers (obstetricians and midwives), physical activity and sports professionalsand physiotherapist, that are in contact with pregnant women, and still there is the concept that exercising during pregnancy is not safe. These guidelines recommend that in the absence of obstetric or medical contraindications, pregnant women should be encouraged to engage in regular, moderate-intensity physical activity during pregnancy.[3] This strong message is not directed towards pregnant women, but to their obstetric care providers. The process of encouragement involves educating women about the risks and benefits of physical activity during pregnancy, in addition to developing and writing an individualized physical activity prescription for each woman.[14] Most of the times, physicians or midwives do not have the knowledge or the time in a double-booked clinic to properly counsel pregnant women about physical activity, and to promote them to become active during pregnancy. The GAQ-P was designed to be self-completed by pregnant women for this purpose. When answering individual questions, they are able to easily self-assess their health, the course of pregnancy and the level and quality of physical activity undertaken so far, both during and before pregnancy. Based on their responses to these questions, they will have a clear direction that they are at low risk for contraindication to prenatal physical activity and can begin or continue physical activity, or they will be directed to obtain additional screening with their obstetric care provider.[15]

Additionally, the short evidence-based information contained in the questionnaire may reinforce their positive health behaviours and making them more prone to become physically active during pregnancy. We believe that the Spanish version of the GAQ-P questionnaire, will break this knowledge barrier for both childbearing women and professional, and will promote an individualized conversation about physical activity and pregnancy among Spanish speakers, in order to improve the compliance with the current guidelines[1,3,6]

There are around 500 million native Spanish speakers globally and Spain accounts with 48 million people that potentially users of the questionnaire,[10] but also partners and families can be interested, and therefore a global society impact could be achieved by the dissemination of this Spanish version of the GAP-Q questionnaire.

In our process, we have used other translation and cultural adaptation questionnaire publication as a template.[16] In addition, GAQ-P has been validated for other languages[15] and our approach has been similar, however we have included stakeholders and childbearing women from several regions of Spain, for a better external validation, since Spanish can vary according to the region.

The main strengths of this research are the cultural adaptation of the questionnaire, and the external validation due to the inclusion of stakeholders from several regions and heterogeneous characteristics. The instrument developer and the local research team led a multi-stage and rigorous process of validation, aiming a good reliability of the translated questionnaire. In addition, the potentially use of this questionnaire in an important part of the global population highlights the potential societal impact of the use of this questionnaire.

In conclusion, following the ISPOR methodology, we have acquired a reliable, evidence-based screening tool for physical activity during pregnancy in Spanish. This tool will help to assist obstetric care providers and physical activity and sports professionalsin the identification of women that have contraindications for performing a moderate-intensity physical activity during pregnancy. At the same time, this tool will break barriers for most of women who should and are willing to engage in physical activity during pregnancy. The implementation into the Spanish healthcare system should be assessed in further studies.

Data availability

Data could be shared upon request to the authors.

Conflicts of interest

The Authors declare that they don't have any conflict of interests

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.apunsm.2024.100463.

References

1. Mottola MF, Davenport MH, Ruchat S-M, Davies GA, Poitras VJ, Gray CE, et al. Board of directors of the Canadian society for exercise physiology (CSEP). *J Obstetr Gynaecol Canada English Version*. 2018;52:1549–1559.
2. Guías al, Barakat R, Díaz-Blanco A, Franco E, Rollán-Malmierca A, Brik M, et al. Guías clínicas para el ejercicio físico durante el embarazo Clinical guidelines for physical exercise during pregnancy Correspondencia. *Prog Obstet Ginecol*. 2019;62:464–471.
3. Syed H, Slayman T, DuChene Thoma K. ACOG Committee Opinion No. 804: physical Activity and Exercise During Pregnancy and the Postpartum Period. *Obstetrics & Gynecology*. 2021;137:375–376.
4. Lindqvist M., Lindkvist M., Eurenius E., Persson M., Ivarsson A., Mogren I. Leisure time physical activity among pregnant women and its associations with maternal characteristics and pregnancy outcomes. 2016 [cited 2024 Feb 7]; Available from: https://doi.org/10.1016/j.srhc.2016.03.006.
5. Silva-Jose C, Sánchez-Polán M, Barakat R, Gil-Ares J, Refoyo I. Level of Physical Activity in Pregnant Populations from Different Geographic Regions: a Systematic Review. *J Clin Med*. 2022;11:4638.
6. https://portal.guiasalud.es/wp-content/uploads/2023/04/gpc_623_actividad_fisica_embarazo_upm_compl.pdf. Guía de Práctica Clínica sobre la Actividad Física durante el Embarazo. Ministerio de Sanidad. 2023.
7. Román-Gálvez MR, Amezcua-Prieto C, Salcedo-Bellido I, Olmedo-Requena R, Martínez-Galiano JM, Khan KS, et al. Physical activity before and during pregnancy: a cohort study. *Int J Gynecol Obstetr*. 2021;152:374–381.
8. Butler E.A., Cohen E., Berger H., Ray J.G. The Get Active Questionnaire for Pregnancy: reducing the Barriers to Physical Activity. 2022; Available from: https://doi.org/10.1016/j.jogc.2021.09.014.
9. Davenport MH, Neil-Sztramko S, Lett B, Duggan M, Mottola MF, Ruchat S-M, et al. Development of the Get Active Questionnaire for Pregnancy: breaking down barriers to prenatal exercise. *Appl Physiol Nutr Metabol*. 2022;47:787–803.
10. Cervantes I., Pastor C., Elaboración V., Informe D., Fernández D., Dirección V. El español: una lengua viva. 2021.
11. Wild D., Grove A., Martin M., Eremenco S., McElroy S., Verjee-Lorenz A., et al. Volume 8 • Number 2 • 2005 V A L U E I N H E A L T H principles of good practice for the translation and cultural adaptation process for patient-reported outcomes (PRO) measures: report of the ISPOR task force for translation and cultural adaptation background and rationale. 1098 [cited 2024 Feb 6]; Available from: http://www.ispor.org.
12. Davenport MH, McCurdy AP, Mottola MF, Skow RJ, Meah VL, Poitras VJ, et al. Impact of prenatal exercise on both prenatal and postnatal anxiety and depressive symptoms: a systematic review and meta-analysis. *Br J Sports Med*. 2018:1376–1385. BMJ Publishing Group.
13. Davenport MH, Ruchat SM, Poitras VJ, Jaramillo Garcia A, Gray CE, Barrowman N, et al. Prenatal exercise for the prevention of gestational diabetes mellitus and hypertensive disorders of pregnancy: a systematic review and meta-analysis. *Br J Sports Med*. 2018:1367–1375. BMJ Publishing Group.
14. Paisley TS, Joy EA, Price RJ. Exercise During Pregnancy. *Curr Sports Med Rep*. 2003;2:325–330.
15. Szumilewicz A, Davenport MHH, Scholz A, Sikora-Szubert A, Santos-Rocha R, Karowicz-Bilinska A, et al. Translation and cross-cultural adaptation of the Get Active Questionnaire for Pregnancy (kwestionariusz "Badź Aktywna w Ciąży") to support physical activity among pregnant women in Poland. *Ginekol Pol*. 2024.
16. Bgeginski R, Schuch FB, Mottola MF, Ramos JGL. Translation and cross-cultural adaptation of the PARmed-X for Pregnancy into Brazilian Portuguese. *Appl Physiol Nutr Metabol*. 2016;41:335–343.