
Translation and cross-cultural adaptation of the Sport Imagery Questionnaire to Brazilian Portuguese

Alberto Filgueiras

Abstract

Imagery can be defined as a human capacity of mentally rehearse and reproduce a skill. The use of imagery techniques is common among athletes. To contribute with sport psychologists on the quantitative assessment of mental training based on Allan Paivio's model, this study aims to translate, adapt and assess content validity of the Sport Imagery Questionnaire in Brazil. The process of adaptation followed the guidelines of the International Test Commission. Three independent translators translated to Brazilian Portuguese; then the synthesis of those items produced the first version of the instrument that was back-translated to English. This first version in Brazilian Portuguese with the original and back-translated versions in English were sent to four bilingual sport psychology specialists. Content Validity Coefficient was used to evaluate cultural adequacy, understanding and quality of translation of each item and the questionnaire. Results showed an average CVC of 0,88 for adequacy, 0,87 for understanding and 0,85 for quality of translation among items and a CVC of 0,88 for the scale as a whole. Obtained data was discussed through the light of sports practice and culture in Brazil.

PALAVRAS CHAVE: Imagery, Sport, Translation, Adaptation, Validity.

Tradução e adaptação transcultural do Questionário de Imagética no Esporte para o Português Brasileiro

Alberto Filgueiras

Resumo

Imagética pode ser definida como a capacidade humana de ensaiar e reproduzir mentalmente uma dada habilidade. O uso da técnica de imagens mentais é comum entre atletas. Para contribuir com psicólogos esportivos na avaliação quantitativa de treinamentos mentais baseados no modelo de Allan Paivio, o presente estudo teve por objetivo traduzir, adaptar e avaliar a validade de conteúdo dos itens do *Sport Imagery Questionnaire*, traduzido como Questionário de Imagética no Esporte para o contexto brasileiro. O processo de adaptação seguiu as diretrizes da International Test Commission. Três traduções para o português foram feitas por três tradutores independentes; a síntese dos itens formou a primeira versão do instrumento que foi então retrotraduzida para o inglês. A primeira versão em português e a versão retrotraduzida foram enviadas a quatro especialistas em psicologia esportiva com domínio do inglês. O Coeficiente de Validade de Conteúdo foi usado para calcular adequação cultural, clareza e qualidade da tradução de cada um dos itens e da escala como um todo. Resultados apontaram para um CVC médio de 0,88 para adequação, 0,87 para clareza e 0,85 para tradução entre o itens e um CVC de 0,88 da escala como um todo. Os dados obtidos são discutidos à luz da prática e da cultura esportiva no Brasil.

Palavras-chave: Imagética, Esporte, Tradução, Adaptação, Validade

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Resumen

Se puede definir imágenes mentales como la capacidad humana para ensayar y reproducir mentalmente una destreza en particular. El uso de la técnica de imágenes mentales es común entre los atletas. Para contribuir a psicólogos deportivos en la evaluación cuantitativa de ensayo mental basado en el modelo teórico de Allan Paivio, este estudio tuvo como objetivo traducir, adaptar y evaluar la validez del contenido de los ítems del Cuestionario Imágenes Mentales, traducido como Questionário de Imagética no Esporte para el contexto brasileño. El proceso de adaptación siguió las directrices de la International Test Commission. Tres traducciones al portugués fueron realizadas por tres traductores independientes; la síntesis de los ítems formaron la primera versión del instrumento que fue back-traducido al Inglés. La primera versión en la versión portuguesa y la versión back-traducida fueron enviados a cuatro expertos en psicología del deporte con dominio del Inglés. El coeficiente de validez de contenido fue utilizado para calcular la adecuación cultural, la claridad y la calidad de la traducción de cada ítem y la escala en su conjunto. Los resultados mostraron un promedio CVC 0.88 para adecuación, 0,87 para mayor claridad y 0,85 para la traducción de ítems; y CVC 0,88 para el instrumento en su conjunto. Se analizan los datos a la luz de la práctica deportiva y la cultura en Brasil.

Palabras-clave: Imágenes Mentales, Deportes, Traducción, Adaptación, Validad

Introduction

Imagery is a wide definition that can be defined as the ability to mentally represent, rehearse and execute a task that may or may not require a skill (Gregg, Hall, & Nederhof, 2005; Hall, Rodgers, & Barr, 1990; Kizildag & Tiryaki, 2012). To say that imagery is an ability, it means that whenever someone rehearses what he/she is going to do, the mental image of the situation, among other cognitive factors, presents different levels of expertise. Indeed, the vividness of a mental picture can be associated to the extension of knowledge and experience one has regarding a skill (Bergmann, Kumpulainen, Avela, & Gruber, 2013; Jackson, 1995).

During sports events and competitions, it is quite common to see an athlete rehearsing his routine (Filgueiras, Santana, Conde, & Ribeiro, 2012; Filgueiras, 2010). Sport psychologists motivate their athletes to mentally practice their movements, event routine and results to achieve higher levels of performance, self-confidence and self-efficacy (Callow, Roberts, Hardy, Jiang, & Edwards, 2013; Cumming & Hall, 2002; Hall et al., 1990; Slimani, Chamari, Boudhiba, & Chéour, 2016). Even off season, studies report imagery use among elite athletes (Cumming & Hall, 2002). Regarding motivation, it is reported in the literature that mental rehearsal enables athletes to build a winning attitude (i.e., they strengthen their beliefs toward being capable of winning) (Callow, Hardy, & Hall, 2001) and to improve their trust in their own sport skills (Ardehjani, Mokhtari, & Tayyari, 2013).

Beyond the domains of performance and motivation, there is evidence reporting that imagery helps athletes to focus their attention in the competition, thus, enhancing concentration (Mizuguchi, Nakata, Uchida, & Kanosue, 2012). In the emotional domain, researchers found out that during mental image practices, athletes who participated of their studies reported feeling the same arousal and anxiety of a real event (Louis, Collet, & Guillot, 2011); that enabled to work on anxiety management and improve their emotional control during competitions (Slimani et al., 2016).

It indeed seems that imagery can be used in several conditions when applied to sports, however to assess whether an athlete is conducting a good mental rehearsal that is going to help him/her to improve performance, self-confidence, attentional and emotional controls, a psychometric measure is needed. Several scales and questionnaires have been developed through the years to assess imagery ability and vividness, for example, Vividness of Movement Imagery Questionnaire (Issac, 1983), Individual Differences Questionnaire (Paivio, 1971), Movement Imagery Questionnaire (Hall & Martin, 1997), Vividness of Visual Imagery Questionnaire (McKelvie, 1995) and Kinesthetic and Visual Imagery Questionnaire (Malouin et al., 2007). However, none of those measures assess the ability of an athlete to mentally rehearse his/her event routine, they assess generic movements and tasks rather than sport-specific mental images. Thus, a problem in the literature was posed to researchers: to develop a evidence-based imagery questionnaire specific to sports considering the theoretical domains of mental images in games and competitions.

Assessment measures for Imagery in Sports

In order to fill the gap in the field of sports imagery, two major psychometric measures were developed: Sport Imagery Ability Questionnaire (SIAQ) (Williams & Cumming, 2011) and Sport Imagery Question-

naire (SIQ) (Hall, Mack, Paivio, & Hausenblas, 1998). The two measures are similar because they both were built over Paivio's theoretical model (Paivio, 1985), however, they differ in purpose: SIAQ assesses function of imagery use among athletes, whereas SIQ measures frequency of use (Williams & Cumming, 2011).

The theoretical approach of Paivio (1985) is based on the ability to learn and produce vivid mental images regarding cognitive and motivational domains. Accordingly, imagery can be divided into these two different domains and, then, subdivided in five factors: Cognitive is subdivided in: cognitive general (CG)—involves the mental rehearsal of game plans and strategies; and cognitive specific (CS)—involves the mental rehearsal of physical and motor skills; and Motivational is subdivided in: general-arousal (MG-A)—involves imaging the emotional arousal and anxiety of competition; general-mastery (MG-M)—involves the mental rehearsal of emotional control and confidence; and specific (MS)—involves imaging winning and goal achievement.

This theoretical structure seems to rely on strong evidence in the literature. Factor analyses conducted with SIQ in the original psychometric research (Hall et al., 1998) and adaptation studies to other languages such as Spanish (Ruiz & Watt, 2014), Finnish (Watt, Jaakola, & Morris, 2006) and Turkish (Kizildag & Tiryaki, 2012) SD=3.3; females' M age=20.0 yr., SD=3.5 showed a five-factor solution with high reliability for each factor as measured by Cronbach's alpha, ranging from 0.71 to 0.88 (Gregg, Hall, McGowan, & Hall, 2011; Hall et al., 1998; Kizildag & Tiryaki, 2012; Ruiz & Watt, 2014; Watt et al., 2006). The same phenomenon happened with the SIAQ: the researchers found a five-factor solution using a Principal Axis Factoring (PAF) and oblimin rotation; however further exploration of the latent structure of this instrument found a better four-factor solution to explain data variance (Williams & Cumming, 2011). Apparently, empirical evidence suggest that SIQ represent Paivio's theoretical model better than SIAQ. Additionally, SIQ presents a children version (Hall, Munroe-Chandler, Fishburne, & Hall, 2009) and it is already translated to other languages whereas SIAQ was recently published.

In Brazil there are no psychometric instruments to assess imagery in sports. In fact, imagery researches conducted with measures use translated, but non-validated or non-adapted versions of the Vividness of Visual Imagery Questionnaire (Busatto, Almeida, Cerqueira, & Gorenstein, 2006) and the Movement Imagery Questionnaire (Sales de Almeida, 2008).

The International Test Commission (ITC) is the institution responsible for discussing translation and cross-cultural adaptation issues and solutions for psychological tests and psychometric instruments. The ITC provides guidelines to guarantee the quality and adequacy of the adaptation to different cultures (ITC, 2010) and among those guidelines, the respect to language idiosyncrasies, the adequacy towards the assessed construct and the ability of an item to be understood by all kinds of participants are pivotal to a good cross-cultural adaptation. In fact, the absence of these three aspects may jeopardize results obtained by non-adapted measures (ITC, 2010).

Brazilian literature lacks adapted measures in sports imagery following the ITC guidelines. Among the available instruments in the international scientific literature, SIQ and SIAQ seem to be the most adequate

and only sport-specific assessment questionnaires. When SIQ is compared to SIAQ, it presents three advantages: (a) latent structure adequacy to the theoretical model, (b) children version available and (c) already adapted to Spanish, Finnish and Turkish, which allows cross-cultural comparisons. For those three reasons, the present study aims to translate the Sport Imagery Questionnaire (Hall et al., 1998) to Brazilian Portuguese and to adapt it to Brazilian culture following the ITC guidelines.

Method

Participants

Four bilingual specialists in psychology (3 in sport psychology and 1 in cognitive psychology) participated of the present study. They all agreed to participate voluntarily, and signed a Term of Consent. The present research was authorized by the institution Ethics Committee.

Measure: the Sport Imagery Questionnaire

The SIQ is a 30-item self-reported assessment measure with a 7-point Likert-type structure for answers ranging from (1) never/rarely to (7) often. Items are divided by the frequency that athletes report to use each of Paivio's constructs: CS, CG, MG-A, MG-M and MS. Examples of items are: in cognitive specific "I can mentally make corrections to physical skills"; in cognitive general "I make up new strategies in my head"; in motivational general-arousal "I image the stress and anxiety associated with competing"; in motivational general-mastery "I imagine myself being mentally tough"; and in motivational specific "I image myself winning a medal".

Back-translation

All procedures began after the authorization of SIQ's author. Back-translation process followed the guidelines of the International Test Commission (ITC, 2010). First, three independent professional translators prepared a Brazilian Portuguese version of SIQ. Secondly, those three versions were synthesized by this study's author in one *beta* version that was discussed in the author's research group; cultural adaptations were implemented. This adapted version was back-translated to English by a bilingual translator who had English as his native language. It was then presented to SIQ's original author who suggested a couple of modifications. These alterations were adopted and the final version of the SIQ in Brazilian Portuguese was finalized. In Brazilian Portuguese, the title of the instrument became *Questionário de Imagética no Esporte (QIE)*.

Item content validity procedure

The specialists participants of the present study evaluated content validity of the QIE. The three main aspects suggested by the ITC to guarantee a good cross-cultural adaptation were assessed using the Content Validity Coefficient (CVC) (Filgueiras et al., 2015): (a) adequacy of the item to the construct (adequacy), (b) the ability of the item to be understood by

different individuals (understanding), and (c) the quality of the relationship between translation and back-translation (back-translation). Each specialist answered three questions regarding these aspects, respectively: (a) "How adequate is this item to assess imagery under Paivio's (1985) approach?", (b) "How easy to understand this item is?", (c) "How reliable is this back-translated item when compared to its original version?". A 5-point Likert scale was used by the participants to answer those questions: 1-"poorly", 2-"less than average", 3-"average", 4-"more than average", 5-"completely".

The CVC algorithm follows four simple steps to calculate coefficients for each item and the scale as a whole. The first step is to calculate the CVC of the item, it is one index for each item in each assessed aspect (CVC_i). The answers of the participants are divided by the maximum value of the Likert scale, which generates a value between 0.2 and 1.0; the average of participants' division is the CVC_i for the aspects. The second step is the coefficient for participants (CVC_p), it is used to assess the validity content of the scale as a whole; all answers of each specialist are summed and divided by the maximum sum possible, in the present study the maximum sum is 150 (30 items times 5-point Likert answers). Thirdly, participant's polarization (P_p) is calculated by dividing the integer 1 by the number of specialists, and then elevating it to the number of participants; because the present study present four participants, the P_p is 0.004. Finally the fourth step is to calculate the test's CVC (CVC_t) that is given by the subtraction P_p from the CVC_p . The literature recommends either CVC_i and CVC_t to show values above 0.80 (Filgueiras et al., 2015). All calculations were conducted using the Microsoft Office Excel.

Results

Among the items, items number 9, 12, 13, 15, 22, 24, 26 and 30 were modified in some way to adequately adapt their content to the Brazilian culture. Reasons for these modifications will be discussed in the following section. Regardless, the alterations are: in the item 9 the term "fast vs. slow" was altered to "transitions" in the QIE; in the item 12, as well as item 30, the term "successfully" was changed to "well" in the *beta* version, but returned to the original term after the SIQ's author evaluation of the back-translation; in the item 13, as well as items 15, 22 and 24, the term "excited" was adapted to "joy", "happiness" or "enthusiasm" depending on the item; finally, in the item 26 the term "mentally tough" was replaced by "mentally strong".

Table 1 depicts CVC_i for each item and the scale as a whole. Adequacy of items to the construct according to judge specialists had CVC_i ranging from 0.80 (in seven items: 5, 6, 7, 12, 16, 17 and 27) to 1.00 (in four items: 4, 11, 25 and 29); understanding of items CVC_i varied from 0.80 (in eleven items: 5, 7, 8, 11, 13, 15, 20, 23, 26, 28 and 30) to 1.00 (in five items: 1, 6, 18, 24 and 29); and back-translation CVC_i ranged from 0.65 (item 9) to 1.00 (item 26). Nonetheless, the CVC_i correspondent to back-translation was the only index that presented values below 0.80: items 9 and 13.

Table 1. Content Validity Coefficient for each item (CVC_i) in each aspect: adequacy, understanding and back-translation; and test's CVC considered as a whole (CVC_t).

Item in Brazilian Portuguese [Original English version]	CVCi		
	Adequacy	Understanding	Back-translation
1. Posso consistentemente controlar a imagem de uma habilidade física. [I can consistently control the image of a physical skill.]	0.90	1.00	0.80
2. Consigo facilmente transitar da imagem mental de uma técnica para outra. [I easily change an image of skill.]	0.85	0.85	0.85
3. Quando imagino uma técnica, executo-a mentalmente com perfeição consistentemente. [When imaging a particular skill, I consistently perform it perfectly in my mind.]	0.95	1.00	0.90
4. Consigo corrigir mentalmente minhas habilidades físicas. [I can mentally make corrections of physical skills.]	1.00	0.95	0.90
5. Antes de fazer uma técnica específica, imagino a mim mesmo(a) executando-a perfeitamente. [Before attempting a particular skill, I imagine myself performing it perfectly.]	0.80	0.80	0.80
6. Quando aprendo uma técnica nova, imagino a mim mesmo(a) executando-a com perfeição. [When learning a new skill, I imagine myself performing it perfectly.]	0.80	0.95	0.85
7. Eu crio novas estratégias na minha cabeça. [I make up new strategies in my head.]	0.80	0.80	0.90
8. Imagino estratégias alternativas caso meus planos para a competição não dêem certo. [I imagine alternative strategies in case my event/game plan fails.]	1.00	0.80	0.95
9. Imagino cada parte da competição/jogo (por exemplo: ataque vs. defesa, transições). [I imagine each session of an event/game (e.g., offense vs. defense; fast vs. slow).]	0.95	0.95	0.65*
10. Me imagino continuando meu plano de ação para a competição/jogo mesmo se minha performance estiver ruim. [I imagine myself continuing with my game/event plan, even when performing poorly.]	0.90	0.85	0.90
11. Me imagino executando jogadas/programas/ partes do modo exato que eu quero que ocorram na competição/jogo. [I imagine executing entire plays/programs/sections just the way I want them to happen in an event/game.]	0.90	0.80	0.85
12. Me imagino seguindo com sucesso o meu plano de competição. [I imagine myself successfully following my game/event plan.]	0.80	0.90	0.80
13. Imagino a atmosfera de ganhar um campeonato (por exemplo: a alegria depois de vencer um campeonato). [I image the atmosphere of winning a championship (e.g., the excitement that follows winning a championship).]	0.95	0.80	0.75*
14. Imagino outros atletas me dando os parabéns por uma boa performance. [I image other athletes congratulating me on a good performance.]	0.95	0.90	0.95
15. Imagino a atmosfera de ganhar uma medalha (por exemplo: o orgulho, a felicidade). [I image the atmosphere of receiving a medal (e.g., the pride, the excitement, etc.).]	0.85	0.80	0.90
16. Imagino o público aplaudindo minha performance. [I image the audience applauding my performance.]	0.80	0.90	0.85

be continued

Continuation

Item in Brazilian Portuguese [Original English version]	CVCi		
	Adequacy	Understanding	Back-translation
17. Me imagino ganhando uma medalha. [I image myself winning a medal.]	0.80	0.95	0.90
18. Me imagino sendo entrevistado como campeão. [I image myself being interviewed as a champion.]	0.90	1.00	0.90
19. Consigo recriar na minha mente as emoções que sinto antes de competir. [I can re-create in my head the emotions I feel before I compete.]	0.90	0.90	0.85
20. Me imagino lidando com o estresse e nervosismo das competições e me mantendo calmo(a). [I image myself handling the stress and excitement of competitions and remaining calm.]	0.90	0.80	0.90
21. Imagino o estresse e a ansiedade de competir. [I image the stress and anxiety associated with competing.]	0.85	0.95	0.90
22. Quando imagino uma competição, sinto-me entusiasmado(a). [When I image a competition, I feel myself getting emotionally excited.]	0.95	0.85	0.85
23. Quando imagino uma competição/jogo em que vou participar, sinto-me ansioso(a). [When I image an event/game that I am to participate in, I feel anxious.]	0.90	0.80	0.80

Discussion

The Content Validity Coefficient for the whole scale (CVC_t) showed good result: 0.88; it means that overall the QIE follows the theoretical model it assesses, it is easy to fill and shows correspondence to the original measure, the SIQ. Those three aspects altogether do not guarantee a perfect adaptation, in fact, according to the ITC (2010) it is not expected that adaptations are only the most reliable translations, rather than that, a good adaptation concerns to the adequacy of items to the assessed construct respecting the theoretical model that is used as foundation to the scale. In this regard, all judges agreed that adequacy (i.e., how adequate to the construct an item is) was respected through the adaptation process; no item had CVC_i for adequacy below 0.80.

Ruiz and Watt (2014) stress that an easy and understandable scale is important because athletes show different intellectual and educational levels. Indeed, evidence found among Great Britain soccer players suggest that only 28% of those athletes pursued careers that required higher educational levels after retirement (Houlston, 1982), in fact it seems that in Brazil those numbers are even lower due to a culture of early specialization in soccer (Cavichioli, Cheluchinhak, Capraro, Junior, & Mezzadri, 2011): only 13% of Brazilian soccer players achieve College-level education (Soares, Melo, Costa, Bartholo, & Bento, 2011). Those evidence suggest that easy to understand items are needed to attend the aimed population. Judges considered understanding of items simple enough to athletes, such as revealed by the CVC_i .

The back-translation is a process that enables researchers to compare the content of items in the same as the original instrument's language. It is a technique used to evaluate whether adaptations impairs or not the content of items in several aspects (ITC, 2010). First, item 9 "I imagine each session of an event/game (e.g., offense vs. defense; fast vs. slow)" had the expression "fast vs. slow" replaced by "transitions"; it apparently impaired the evaluation of the back-translation because judges assumed that the image of different speeds of a session in an event is not the same as transitions from attack to defense during a match. In fact, the speed of a mental image is called timing, thus imagery should be produced in many times (i.e., a volleyball serve should be imagined quickly, in the real speed it is executed and in slow-motion) to be effective in mental practice (Filgueiras, 2010; Gregg et al., 2011; Hall et al., 1990). The item 9 belongs to CS dimension according to the literature (Hall et al., 1998; Ruiz & Watt, 2014), thus it was created to assess the mental rehearsal of motor skills and movements. Despite of not being able to reproduce exactly the same words of the original item in the back-translation, the author considered more adequate to the Brazilian culture to change the expression "fast vs. slow", because the construct of cognitive-specific imagery remained regardless of the expression used. It still respect Paivio's (1985) theoretical model and this modification was accepted by the original author. Then, the low CVC_i of the item 9 should not be a concern; this is why the term "transition" was not altered in the final version of QIE.

Beyond item 9, item 13 "I image the atmosphere of winning a championship (e.g., the excitement that follows winning a championship)" also presented CVC_i for back-translation below 0.80. The only adaptation other than the translation itself in this item was "excitement" to "joy". Other adaptations of the expression "excitement" were: "happiness" (item 15), "nervousness" (item 20) and "enthusiasm" (items 22 and 24). The reason that judges evaluated badly the back-translation of item 13 was because "joy" does not reflect the significant behind "excitement". The author and his/her research group decided to adapt the word "excitement" because in Brazilian Portuguese it has a sexual connotation; it would not be adequate to present an instrument to athletes with a sexual term. Thus, adaptations were made trying to respect Paivio's (1985) domains for each item. The author of the original scale did not addressed to any of those adaptations which is an evidence that it did not impaired modified items. Addressing specifically to the item 13, it belongs to the motivational-specific dimension; thus it was developed to assess emotions and feelings related to winning a game/event, or achieving a goal. In Brazilian Portuguese, more than excited, athletes tend to use the expressions "cry of joy" when they win a tournament/championship. It is definitely one of the possible emotions that one feels after winning. In item 13, "excitement" is an example of emotional arousal associated with "winning a championship", as well as "joy" ("happiness" and perhaps "relief" would also apply). It means that, despite of presenting a CVC_i for back-translation lower than 0.80, the item assesses Paivio's MS dimension (Hall et al., 1998) adequately, such as revealed by the results of CVC_i for adequacy and understanding.

Finally, it is important to depict that the original author recommended to keep the term "successfully" on items 12 and 30. The problem of

using the term to “well” in adaptation of those items is that there is a clear semantic difference between being successful and playing well: when one is satisfied just with playing well, the mental image produced tends to migrate from one of Paivio’s dimension to another (Hall et al., 1998). It is not the case in the item 12; it asks the frequency the player imaging him/herself “(...) successfully following the game/event plan”, it is expected to be a cognitive-general image, thus linked to game strategies and plans, to imagine him/herself executing a game plan well, the athlete do not necessarily need to image being successful using the imagined strategy. Then this adaptation may not be the most adequate. However, in the item 30 the impairment of content seems to migrate the item from motivational-general mastery to motivational-general arousal: to perform well through tough situations is semantically different from perform successfully. When one performs well, he/she may or may not win, however, when one performs successfully, he/she is going to win. These reasons led the author to change back the adaptation in those items and applying it to the final version of QIE.

LIMITATIONS AND FUTURE DIRECTIONS

The present study aimed to translate and cross-culturally adapt the Sport Imagery Questionnaire (Hall et al., 1998) to Brazilian Portuguese, a psychometric measure used to evaluate frequency of athlete’s imagery production under Paivio’s theoretical approach (Paivio, 1985). Four judges, all specialists in cognitive or sport psychology participated. They assessed: (a) adequacy of items adaptations to the theory, (b) the ability of the item to be understood by all kinds of athletes and (c) quality of back-translation; using the Content Validity Coefficient (CVC) (Filgueiras et al., 2015). Despite of presenting good results, this research does not provide psychometric properties of the adapted measure: QIE.

It is important that, in a near future, researchers study the latent structure of the instrument, among other psychometric analyses such as internal consistency and item functioning. The literature shows that SIQ presents a 5-factor solution in exploratory factor analyses in the original psychometric study (Hall et al., 1998) and other cross-cultural adaptation studies such as Spanish (Ruiz & Watt, 2014), Finnish (Watt et al., 2006) and Turkish (Kizildag & Tiriyaki, 2012) SD=3.3; females’ M age=20.0 yr., SD=3.5. Then, finding a 5-factor structure in the QIE is a strong evidence of a good adaptation. Future studies using QIE should provide the answer to those questions.

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