



Original Article

Translation and cross-cultural adaptation of the Friedrich Short Form of the Questionnaire on Resources and Stress (QRS-F) to measure the stress level of Filipino parents and other caregivers of children with disability

Paulin Grace Morato-Espino,^a Kim Gerald Medallon,^b Rigel Benzon,^b Mark Timothy Arrozo,^b Carlo Angelino Buencamino,^b Cecilia Anne Ibay,^b Marie Selene Ko,^b Ivan Neil Gomez^a

^aCenter for Health Research and Movement Science, University of Santo Tomas, Manila, Philippines; ^bDepartment of Occupational Therapy, College of Rehabilitation Sciences, University of Santo Tomas, Manila, Philippines

Correspondence should be addressed to: Paulin Grace Morato-Espino^a; pgmorato@ust.edu.ph

Article Received: 15 February 2019

Article Accepted: 19 June 2019

Article Published: 18 July 2019 (Online)

Copyright © 2019 Morato-Espino et al. This is an open-access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Background: The Friedrich Short Form of the Questionnaire on Resources and Stress (QRS-F) is a tool that measures stress levels of parents of children with disabilities. **Objectives:** The objectives of this study are 1) To translate and culturally adapt the QRS-F for use by Filipino parents and other caregivers of children with disability in the Philippines, and 2) To establish its psychometric properties. **Methods:** The tool underwent the process of translation & cross-cultural adaptation with the following steps: 1) face & content validation, 2) translation and equivalence and 3) pilot study of the pre-final QRS-F. Convenience sampling was performed to select sixty Filipino parents and other caregivers of children with disability enrolled in special education schools and thirty Filipino parents and other caregivers of typically developing children enrolled in regular schools, all located in Metro Manila. **Results:** A translated, and culturally adapted QRS-F was developed and was found to have good reliability and construct (known group) validity. **Conclusion:** The QRS-F is a culturally valid tool that can be used to measure the stress levels of Filipino parents and other caregivers of children with disability.

Key Words: questionnaire, stress, parents, children, disability

Introduction

Parenting or child rearing is the provision of care and supervision to support the child's developmental needs. While it may pose several demands, for most, parenting is a positive experience. However, parenting could also be more difficult and stressful for some, such as in the case of parents of children with disability. Literature supports that the stress levels between parents and caregivers of children with disability and parents and caregivers of typically developing children are different with the former showing higher levels.^{1,2,3} Stress is a negative psychological response to demands that are usually greater than one's currently available

resources and may be manifested in ways such as depression, anxiety, negative impact on health, welfare, safety and psychosomatic symptoms.⁴

Various factors contribute to the stress experienced by parents of children with disability. The nature and severity of a child's disability and temperament, behavior problems, and demands placed upon the parent are significantly and directly related to each other.⁵ Parents would rather consider the persistent needs and concerns of their children with disability than their own needs. The lack of rest causes much strain on the parents. A study found that there are Filipino parents who choose to

quit their jobs to devote their time fully in taking care of their child with disability.⁶ This, unfortunately results to financial constraints further causing stress to them.⁶

Elevated levels of stress may have negative effects on the parent, child, and even the entire family which may lead to substantial disturbance in relationships.⁴ Stress brought about by nurturing a child with special needs may have adverse effects on the parent's general well-being which affects one's overall functioning.⁷ The presence of high levels of disturbed sleep, emergence of mood problems, restricting relationships between peers and other family members, limited participation in leisure activities, and limited employment opportunities are common occurrences associated with caring for a child with disability.^{8,9} Stress can lead to unhealthy lifestyles, and restrict caregivers' activities, which in turn, can result to various physical and psychosocial problems.^{5,7} Child rearing, which includes the ability to accommodate and respond to the child's behavior and unique contexts, can also be affected causing a negative, cyclic interaction.^{7,10} Elevated parent-related stress has been associated with poorer child outcomes in intervention programs. Overly stressed parents have been found to respond poorly to interventions made for families with a child with ASD.⁶

Due to the numerous detrimental effects of elevated stress, interventions and support for stressed parents of children with disability are imperative. The role of occupational therapists to advocate health and wellness and to help parents improve participation in child rearing are highly relevant.¹¹ The first step to address the problem, however, is to be able to identify these parents who have elevated levels of stress and, therefore, are in need of help.

There are various tools used to measure parental stress level.^{12,13,14,15} The Friedrich Short-Form of the Questionnaire on Resources and Stress (QRS-F) is one of the widely used questionnaires used to measure parental stress.^{16,17} It was developed from Holroyd's longer version of Questionnaire on Resources and Stress which was designed to measure the impact of a child with developmental disability or a family member

with chronic illness on the parent or caregiver.^{13,18} The short form was intended for use with parents of young children with Autism Spectrum Disorder. Psychometric properties showed good reliability, internal consistency, and satisfactory convergent, divergent, and construct validity.^{1,12,13}

Most of the self-report measures available for use were developed in English-speaking countries. In countries with different language and culture, such as in the Philippines wherein there is an absence of such a tool, there is a need for translation and cultural adaptation. The QRS-F has been translated and cross-culturally validated for use in several countries, such as Spain, China, Turkey and Israel.^{15, 19, 20, 21}

The Philippines is said to be one of the countries having the highest prevalence of disability who are classified to have low socioeconomic status.²² With this, it is safe to conclude that there are a good number of parents who already are in difficult predicament and have the additional load of taking care of a child with disability. Parenting is an important occupation in the Philippines and is taken seriously and considered a priority by most. Stress levels of Filipino parents of children with disability may be highly similar to other cultures; however, the lack of research in the Philippines is glaring.

To determine the stress level of Filipino-speaking parents and other caregivers of children with disability in the Philippines, there is a need to create a culturally appropriate tool to cater to these parents. Thus, the aim of the study is to establish a culturally adapted Filipino version of the QRS-F. The specific objectives of this study are to 1) Translate and cultural adapt the QRS-F for use by Filipino-speaking parents and other caregivers of children with disability in the Philippines; and 2) Establish the psychometric properties of the cross-culturally adapted QRS-F specifically face, content, construct validity specifically known groups validity, and internal consistency.

Methodology

Participants

Purposive sampling was performed to select six experts namely two occupational therapists (OT), two guidance counselors and two parents of children with disability to validate the questionnaire on face and content level. Three forward translators and two backward translators were invited to translate the tool to Filipino and evaluate its equivalence.

Convenience sampling was used to select two groups of parents and other caregivers of children aged 2 to 18 years old. Parents and other caregivers of children with disability from one private and one public special education schools were invited to participate in the pilot study. Participants for the other group were invited from private and public regular schools located within Metro Manila. Other caregivers of children are those individuals whom the children spend most of their time with and provide the care and supervision they need in the absence of their parents.

Procedures

This study has been approved by the Ethics Review Committee of the University of Santo Tomas, College of Rehabilitation Sciences. The cross-cultural adaptation process performed in this study consists of three steps: 1) Tool Validation (Face and Content), 2) Translation and Equivalence, and 3) Pilot Testing. Access to the tool has been provided by one of the authors of the short form which is readily available from the published article.¹⁷

Step 1: Face and content validation

Face Validation. Each item of the Short form of the Questionnaire on Resources and Stress and the questionnaire as a whole were examined for face validity. All six-panel experts were able to answer the face validation questionnaire completely.

Content Validation. The same panel of experts examined the QRS-F to validate its content. Each item on the questionnaire was assessed using the Content Validity Index (CVI) where four parameters relevant to content validation were described: relevance, clarity, simplicity, ambiguity and were rated using a 4-point scale.

CVI was computed as the number of experts giving a rating of 3 or 4 divided by the total number of experts. Item - Content Validity Index (I-CVI) was derived by computing the mean CVI per item. The Scale Content Validity Index (S-CVI/Ave) is the mean I-CVI of all items. The minimum acceptable CVI is 0.79. Items with CVI below 0.79 has to be reviewed and revised or removed.²³

Modification of Tool. After validation of the QRS-F at face and content level, the comments of the experts were consolidated as a basis for the changes done on the Short form of the Questionnaire on Resources and Stress (QRS-F).

The revised QRS-F was sent back to the same panel of experts for review. Each item on the QRS-F was re-assessed using the same questions. All six experts were able to answer the second face validation questionnaire completely. A written report regarding their comments on the changes done to the QRS-F was generated.

Step 2: Translation and equivalence

The process of translation and cross-cultural adaptation of the questionnaire is based on the Guidelines for the process of Cross-Cultural Adaptation of Self Report Measures by Beaton, Bombardier, Guillemin, and Ferraz.²⁴ Cross-cultural adaptation is different from merely translating a questionnaire into the intended language of use. It is a process where the questionnaire is being prepared for use in another setting and tries to produce equivalency between the source and target based on the content of the questionnaires. Different scenarios would dictate whether there is a need to do both translation and cultural validation or cultural validation only. Since the QRS-F will be used in another country and in another language, it was determined that both translation and cultural validation are required.²⁴

Forward Translation. Three independent translators translated the questionnaire from English to Filipino language. The first translator is an independent Filipino translator who does not have any background regarding the questionnaire. The translation made by the first translator was labeled as FT1 (translator 1). The second translator is a Filipino rehabilitation professional that has experienced administering

similar questionnaires and the translation made was labeled as FT2 (translator 2).

The researchers compared and consolidated the two translations to develop the Filipino version of the questionnaire. A third translator was hired in order to translate item 28 from the questionnaire because of the difficulty to consolidate the translations from translators 1 and 2 for the said item only. The translation was labeled as FT3 (translator 3).

Backward Translation. Two independent translators performed backward translation. The two translators were independent translators who do not have any background regarding the questionnaire. The translation made by the first translator was labeled as BT1 and the translation made by the second translator was labeled as BT2.

Equivalence. The researchers, experts and translators consolidated all of the translations to develop the pre-final Filipino Questionnaire on Resources and Stress. One of the researchers who had previous training and experience in cross-cultural adaption and translation of questionnaires acted as the methodologist and one of the forward translators who is part of a renowned national university Filipino language center acted as the language expert. A written report was prepared based on the discussion of the translations. The researchers, translators and experts determined equivalence between the target version and the source in four areas by answering the following questions: 1) *Semantic Equivalence: Do the words mean the same thing? Are there multiple meanings to a given item? Are there grammatical difficulties in the translations?;* 2) *Idiomatic Equivalence: Were the idioms or colloquialisms properly and correctly translated?;* 3) *Experiential Equivalence: Are translated items in fact experienced in the target culture?;* and 4) *Conceptual Equivalence: Are the conceptual meaning of translated words same in both cultures?*²⁴

Step 3: Pilot testing

The pre-final Filipino version of the QRS-F was pilot tested and used to determine and compare the stress level of Filipino parents and other caregivers of a child with disability and Filipino parents and other caregivers of a typically

developing child. It was suggested to recruit between thirty to forty persons according to the guidelines by Beaton.²⁴

The participants who consented to participate in the study were gathered in one room located in the school and they were each provided a copy of the questionnaire. Demographic data was gathered from each of the participant before the instructions for the questionnaire was explained to the group. After each participant completed answering the questionnaire, the participants were asked for 1) the meaning of each item in the questionnaire and their responses and 2) any parts or words in the questionnaire that are hard to understand, if any. Questions were asked further regarding the item/s that are difficult to understand. Parents of typically developing children studying in regular schools were only asked to accomplish the questionnaire for the assessment of the tool's known group validity.

Data analysis

All the written reports of the experts and translators were consolidated and summarized. Data analysis was performed using Microsoft Excel 2013 and SPSS 20.0 programs. Microsoft Excel was used to determine the face and content validity of the tool by computing the mean scores. SPSS 20.0 was used for descriptive statistics to analyze the participant characteristics, internal consistency as measured by Cronbach's Alpha and the differences among groups using the Mann Whitney U-test, the non-parametric equivalent of independent t-test, following non-normal distribution of samples and non-homogeneity of variances.

Results

Phase I: Validation of Tool

Face Validation. After face validation, results revealed that four items (1, 4, 10, 28) of the questionnaire was not able to meet the set criteria (66%) and were found to be invalid at face level. All other items of the QRS-F were found to be valid at a face level.

Content Validation. All items of the questionnaire have met the set criteria (0.79) except for the relevance of item 2. The item was reviewed and after a discussion with the expert

panel, the item was retained in its current form. The scenario of putting children with special needs in group homes or institutions is not

common and may even be unacceptable for most Filipinos; however, it was also discussed that it is a viable option for some families since there are

Table 1. Content Validity Index Results of Filipino QRS-F

Item number	CVI -Relevance	CVI - Clarity	CVI -Simplicity	CVI -Ambiguity	I-CVI
1	1.00	1.00	1.00	1.00	1.00
2*	0.67	1.00	1.00	1.00	.92
3	1.00	1.00	1.00	1.00	1.00
4	1.00	1.00	1.00	1.00	1.00
5	1.00	1.00	1.00	1.00	1.00
6	1.00	1.00	1.00	1.00	1.00
7	1.00	1.00	1.00	1.00	1.00
8	1.00	1.00	1.00	1.00	1.00
9	1.00	1.00	1.00	1.00	1.00
10	1.00	1.00	1.00	1.00	1.00
11	1.00	1.00	1.00	1.00	1.00
12	1.00	1.00	1.00	1.00	1.00
13	1.00	1.00	1.00	1.00	1.00
14	1.00	1.00	0.83	1.00	0.96
15	1.00	1.00	1.00	1.00	1.00
16	1.00	1.00	1.00	1.00	1.00
17	1.00	0.83	1.00	1.00	0.96
18	1.00	1.00	1.00	1.00	1.00
19	1.00	1.00	0.83	1.00	0.96
20	1.00	1.00	1.00	1.00	1.00
21	1.00	1.00	0.83	1.00	0.96
22	1.00	1.00	1.00	1.00	1.00
23	1.00	1.00	1.00	1.00	1.00
24	1.00	1.00	1.00	1.00	1.00
25	1.00	1.00	1.00	1.00	1.00
26	1.00	1.00	1.00	1.00	1.00
27	1.00	1.00	1.00	1.00	1.00
28	1.00	1.00	1.00	0.83	0.96
29	1.00	1.00	1.00	1.00	1.00
30	1.00	1.00	1.00	1.00	1.00
31	1.00	1.00	1.00	1.00	1.00
Mean	0.99	0.99	0.98	0.99	0.99

* Item was reviewed in terms of relevance.

groups and institutions currently providing this service for a fee or as charitable work.

Revised QRS-F. The tool was modified based on the comments of the experts after face validation. The four items (1, 4, 10, 28) were then revised. The format of the questionnaire was not able to meet the set criteria (66%) and was revised according to the comments of the reviewers. All other items were retained, and no changes were done. The revised QRS-F was sent back to the

panel of experts for review. The format and all items of the questionnaire were then found to be valid at face and content level.

Phase II: Translation and Equivalence

Forward and Backward Translation. The QRS-F has been translated into Filipino language and back to the English language.

Table 2. Forward and Backward Translations

Item number	Original	Forward Translation	Backward Translation 1 (BT1)	Backward Translation 2 (BT2)	Resolution of Expert Panel
1	I worry about what will happen to ____ when I can no longer take care of him/her.	Nag-aalala ako kung ano ang maaaring mangyari kay _____ kung sakaling hindi ko na siya maalagaan.	I am worried about what may happen to _____ in case I am unable to take care of him anymore.	I am worried with what might happen to _____ if I am no longer capable of taking care of him/her.	Accept the forward translation.
2	I have accepted the fact that ____ might have to live out his/her life in some special setting (e.g., group home, institution) .	Tinanggap ko na ang katotohanang maaring mamuhay si ____ sa isang espesyal na lugar (katulad ng group home o sa isang institusyon)	I had already accepted the fact that _____ may stay in a special place (like a group home or an institution).	I have already accepted the fact that ____ may have to live in a special place (a group home or specialized institution)	Accept the forward translation.
3	I have given up things I have really wanted to do in order to care for ____.	Tinalikuran ko na ang mga bagay-bagay na talagang nais kong gawin para maalagaan si _____.	I had to forego some things which I like to do just to take care of _____.	I have already put aside on the things that I like to do to be able to care for ____.	Accept the forward translation.
4	It bothers me that ____ will always be this way.	Nababahala ako na magiging ganito palagi si _____.	I am worried that _____ will always stay this way.	I am worried that _____ will always be like this.	Accept the forward translation.
5	I can visit my friends whenever I want.	Maari kong bisitahin ang aking mga kaibigan kailan ko man gustuhin.	I can visit my friends whenever I want to.	I can visit my friends whenever I wish to.	Accept the forward translation.
6	I get upset with the way my life is going.	Naiinis ako sa patutunguhan ng buhay ko.	I am annoyed with the way my life is leading to.	I am irritated with how my life might become.	Accept the forward translation.
7	I am disappointed that ____ does not lead a normal life.	Nadidismaya ako dahil hindi makapamuhay nang normal si _____.	I am upset that _____ cannot live a normal life.	I am frustrated because ____ cannot have a normal life.	Accept the forward translation.
8	It is easy for me to relax.	Madali para sa akin ang makapagpahinga at magrelaks.	It is very easy for me to take a rest and relax.	It is easy for me to be able to rest and relax.	Accept the forward translation.
9	I worry about what will be done with ____ when he/she gets older.	Nag-aalala ako kung ano ang gagawin kay _____ kapag matanda na siya.	I am worried about taking care of _____ when he becomes old.	I am worried of what might happen to ____ when he is old already.	Accept the forward translation.
10	I get almost too tired to enjoy myself.	Masyado na akong pagod para libangin pa ang sarili ko.	I am already too tired to find recreation.	I am already too tired already to enjoy myself.	Accept the forward translation.
11	I feel sad when I think of ____.	Nalulungkot ako sa tuwing naiisip ko si _____.	I become sad whenever I think of _____.	I feel sad whenever I think of _____.	Accept the forward translation.

					translation.
12	I often worry about what will happen to ____ when I can no longer take care of him/her.	Madalas akong nag-aalala kung ano na ang mangyayari kay ____ kapag hindi ko na siya kayang alagaan.	I often worry about what may happen to _____ when I can no longer take care of him.	I am often worried of what might happen to ____ if I do not take care of him/her.	Accept the forward translation.
13	Caring for ____ puts a strain on me.	Nagpapahirap sa akin ang pag-aalaga kay _____.	It is a burden for me to take care of _____.	Taking care of _____ has brought hardships to me.	Accept the forward translation.
14	The constant demands for care for ____ limit my growth and development.	Ang pagyabong at pag-unlad ng aking sarili ay nalilimitahan dahil sa patuloy na pangangailangan para alagaan si _____.	My self-growth and self-fulfillment are diminished by the constant need to take care of _____.	My personal development and growth is hindered because of the need to continuously care for _____.	Accept the forward translation.
15	I rarely feel blue	Bihira akong makadama ng lungkot.	I seldom become sad.	I rarely feel any sadness.	Accept the forward translation.
16	I am worried much of the time	Madalas akong nag-aalala.	I often worry.	I am worried most of the time.	Accept the forward translation.
17	Other members of the family have to do things despite limited resources because of ____.	Ang ibang miyembro ng pamilya ay ginagawa pa rin ang kanilang normal na gawain sa kabila ng kakulangan sa pangangailangan.	The other family members continue to live a normal life despite the lack of resources.	The other members of the family can still do their work normally despite the lack of necessities.	Remove “normal”; ... kanilang mga gawain...”
18	Our family agrees on important matters.	Ang aming pamilya ay nagkakasundo sa mahahalagang bagay.	Our family agrees with important matters.	Our family agrees on important matters or decisions.	Accept the forward translation.
19	The constant demands for care for ____ limit growth and development (ex: physically, emotionally, socially and spiritually) of someone else in the family.	Nalilimitahan ang pagyabong at pag-unlad (hb. Pisikal, emosyonal, pakikitungo sa ibang tao at espirituwal) ng ibang miyembro sa aming pamilya dahil sa patuloy na pangangailangan para alagaan si _____.	The growth (whether physical, emotional, dealing with other people, and spiritual) of the other family members is hindered because of the constant need to take care of _____.	The personal growth and development (eg. Physical, emotional, social, and spiritual) of the other members of the family is hindered because of the need to continuously care for _____.	Accept the forward translation.
20	____ is able to fit into the family social group.	Si _____ ay may kakayahang makisalamuha sa aming pamilya.	_____ is capable of mingling with our family.	_____ has the ability to communicate and socialize with the family.	Accept the forward translation.
21	In the future, our family’s social life will	Sa hinaharap, magiging mahirap ang pakikisalamuha	In the future, our family may find it hard to mingle with	In the future, it will be difficult for our family to interact with	Accept the forward

	suffer because of increased responsibilities and financial stress.	ng aming pamilya sa ibang tao dahil sa dumarami naming responsibilidad at problemang pinansyal.	other people because of our increasing responsibilities and financial problems.	other people because of the increasing number of responsibilities and financial problems.	translation.
22	Taking ____ on a holiday spoils the pleasure for the whole family.	Nasira ang kasiyahang dulot ng bakasyon ng pamilya kapag isinasama si _____.	We enjoy less our vacations whenever we bring _____ along.	The enjoyment of having a vacation is ruined whenever the family decides to let _____ go with them.	Accept the forward translation.
23	The family does as many things together now as we ever did.	Mas maraming ginagawang aktibidad ngayon ang aking pamilya kumpara noong dati.	My family does a lot of things now compared before.	The family is busy with more activities today than in the past.	Accept the forward translation.
24	Members of our family get to do the same kind of activities as other families do.	Nagagawa rin ng mga miyembro ng aming pamilya ang mga gawain na ginagawa ng ibang pamilya.	Our family members can also do what other families are doing.	The members of our family are still able to perform the activities that other families do.	Accept the forward translation.
25	____ will always be a problem to us.	Palaging magiging problema si _____ sa amin.	_____ will always be a problem to us.	_____ will always be a problem to our family.	Accept the forward translation.
26	There is a lot of anger and resentment in our family.	Maraming hinanakit at galit na dinadala ang aming sambayanan.	Our household carries a lot of resentment and anger.	There are many ill feelings and grudges brought in our household.	Accept the forward translation.
27	____ doesn't do as much as he/she should be able to do.	Hindi nagagawa ni ____ ang dapat na nagagawa niya.	_____ is unable to do what he is supposed to be doing.	_____ is not able to the things he/she should be doing.	Accept the forward translation.
28	There are many places where we can enjoy ourselves as a family when ____ comes along.	Kapag nariyan si _____, maraming lugar upang maramdaman namin ang saya bilang isang pamilya.	We feel happy in many ways whenever _____ is around.	Whenever ____ is around, we can feel happy in different places as a family.	Revise to ..."lugar kung saan maari kaming maglibang bilang..."
29	_____ is over-protected.	Labis ang pagprotekta namin kay _____.	We overprotect _____.	We are very protective of _____.	Accept the forward translation.
30	____ has too much time on his/her hands.	Napakaraming oras ni _____.	_____ has a lot of time to spend.	_____ has so much time.	Accept the forward translation.
31	Time drags for _____, especially free time.	Mabagal ang oras para kay _____, lalo na ang libreng oras.	Time seems slow for _____, especially free time.	Time is lengthy for _____, especially during periods with nothing to do.	Accept the forward translation.

Pre-final version of QRS-F. Unanimous consensus was sought among the researchers, experts, and translators regarding the equivalence of the instructions and each item of the Filipino QRS-F to the English version of the QRS-F in four areas: semantic, idiomatic, experiential and conceptual equivalence in order to develop the Pre-Final QRS-F. The instructions and all of the items of the Filipino QRS-F had met the equivalence in its English version in four areas except for two items. The researchers reached a consensus and made changes to one item (item 26) based on a discussion with the expert panel. No changes were made to item 30 (*Napakaraming oras ni _____*). Details regarding the forward and backward translations of the questionnaire can be seen in Table 2.

Phase III: Pilot Testing

Participant Characteristics. A total of 90 participants participated in this study. Sixty Filipino parents and other caregivers of children with disability who are enrolled at special education schools and 30 Filipino parents and other caregivers of typically developing children were asked to accomplish the Pre-Final QRS-F. Most of the respondents of the questionnaire are mothers of the children and are high school graduates. Table 3 presents the participant characteristics.

Reliability of the 31-item Pre-Final QRS-F. The 31-item culturally adapted QRS-F appears to have good internal consistency, with a Cronbach's alpha of 0.82. The interpretation of values for internal consistency are as follows:> 0.90 – Excellent, > 0.80 – Good, > 0.70 – Acceptable, > 0.60 – Questionable, > 0.50 – Poor, and < 0.50 – Unacceptable.²⁵

Known Groups Validity. The stress levels of Filipino parents and other caregivers with

typically developing children and stress levels of Filipino parents and other caregivers with children with disability were compared. Literature supports that these two groups are different in terms of stress levels.^{26, 27, 28, 29}

Analysis of the scores from the adapted QRS-F revealed that there is a significant difference between the total scores of stress levels of Filipino parents and caregivers of typically developing children and Filipino parents and caregivers of children with disability ($p < 0.001$).

General Comments on and Meaning of Filipino QRS-F. The parents and other caregivers understood almost all of the questions of the translated and culturally adapted QRS-F and had no difficulty comprehending the instructions during pilot testing except for item 30. The statement, "*Napakaraming oras ni _____*" was not fully understood by a small number of parents ($n = 4$) due to its incomplete nature. The researchers met to consolidate comments during pilot testing and decided to retain item 30 since the majority of parents understood this item. Difficulty to understand this particular item may be easily solved by providing an example and filling in the blank.

The participants of the pilot study were able to state the meaning of each item and their responses according to how they understood them by rephrasing the items or explaining how the items relate to them personally.

No further modifications were made on the pre-final QRS-F and the tool may now be used as a to measure the stress level of Filipino-speaking parents and other caregivers of children with disability. The final version, as well as all the relevant files that documented the process, were sent to the author of the original tool.

Table 3. Participant Characteristics

Total Respondents		n=90	
Age (median)			40.5 years old
Relationship to the child			
Parents	68		(75.6%)
Grandparents	9		(10.0%)
Aunt/Uncle	10		(11.1%)
Household Helper	3		(3.3%)
Gender			
Male	24		(26.7%)
Female	66		(73.3%)
Educational Attainment			
Elementary Graduate	5		(5.6%)
High school Graduate	47		(52.2%)
College Graduate	36		(40.0%)
Vocational Course	1		(1.1%)
Children			
Age (median)			8 years old
Gender			
Male	53		(58.9%)
Female	37		(41.1%)
With disability n=60		Typically Developing n=30	
School		School	
Public	30 (33.3%)	Public	14 (15.6%)
Private	30 (33.3%)	Private	16 (17.8%)
Diagnosis			
Autism Spectrum Disorder	25 (27.8%)		
Global Developmental Delay	11 (12.2%)		
Cerebral Palsy	2 (2.2%)		
Attention Deficit Hyperactivity Disorder	7 (7.8%)		
Down Syndrome	8 (8.9%)		
Intellectual Disability	3 (3.3%)		
Angelman Syndrome	1 (1.1%)		
Hearing Impairment	1 (1.1%)		
Learning Disorder	1 (1.1%)		
Unknown	1 (1.1%)		

Discussion

A translated and culturally-adapted QRS-F for use with Filipino speaking parents in the Philippines was developed by the researchers. A culturally valid tool is needed as it will be more applicable to the intended population and thus will be able to correctly capture what the tool is intended to measure. Using an assessment tool developed in another country and of an unfamiliar language will provide invalid and inaccurate results due to language barrier and culturally irrelevant items.³¹ This may consequently affect the provision of correct, client-centered, and context-specific intervention

measures to attain the set outcomes in the occupational therapy service delivery.

Having an available tool in the Filipino language will also ensure that more parents of children with disability could be reached and evaluated. This may prompt greater participation and commitment on the part of the parents and the caregivers in the occupational therapy process. According to the 2010 Census of Persons with Disability (PWD) in the Philippines, Region IV-A had the highest number of PWD at 193,000, followed by the National Capital Region with 167,000.³² Filipino, primarily derived from Tagalog, is the main language used in these two regions. In addition, it is said that 1 of 3 persons

in the poorest wealth are disabled in the Philippines.²² Low socioeconomic status and low educational level usually go hand in hand and these parents, who may be experiencing the highest level of stress, may have poor comprehension of the English language; thus, justifying the relevance and need for such cultural adaptation.

Stress poses heightened challenges in child rearing most especially since greater attention and effort are needed in caring for children with disability. Thus, the role of occupational therapists to advocate programs providing support to these parents is emphasized.³³ Occupational therapists work with the parents in an attempt to help them manage and reduce the stress they experience. Occupational therapists may provide different interventions to the parents such as stress management and relaxation techniques to help them to cope with and manage their stress through various means.³⁴ Parents may also seek counseling groups, family training, support groups which provide safe venues for social networking, sharing experiences, and generating common solutions for resolving stress.²¹

In the Philippines, there are a number of organizations that provide different opportunities that cater to the needs of the parents and to the children with disability. One of which is Autism Society Philippines, a parent and child support group which aims to empower children with ASD to being dependent, productive, and socially accepted in the community.³⁵ Another organization, the Philippine Association for Citizens with Developmental and Learning Disabilities Inc., organizes seminars, events and workshops to provide support and knowledge for parents and families of children with disability.³⁶

Occupational therapists could also aid in decreasing parental stress, albeit indirectly, by providing interventions to the child aimed at promoting independence and preparing the child for future occupational participation. This will help lessen parents' worrying about their child's future. Provision of meaningful occupations, restructuring the environment, and utilization of an appropriate use the self are important considerations in planning and carrying out

interventions for a child with disability. Home instruction programs are also provided by occupational therapists to ensure that the interventions provided are followed through at home. However, all of these may not essentially target the pressing concerns and limitations if an authentic and comprehensive assessment process, through the use of appropriate tools, will not be advocated and performed.

Conclusion

In conclusion, a cross-culturally valid QRS-F was developed through translation and adaptation of the tool into Filipino language and culture. The said tool has a good internal consistency, is valid at face, content, and construct level (known groups validity) and can now be used to measure the stress levels of Filipino parents and other caregivers of children with disability.

Knowing the stress level of parents and other caregivers who have children with disabilities can help occupational therapists provide interventions to decrease their stress levels, ease their concerns, improve their quality of life and prepare their child to be more independent which may help decrease the stress levels of Filipino parents and other caregivers of children with disability.

Limitation

This research is without any limitations. It has to be noted that the 31-item QRS-F was originally intended for use with parents of children with autism spectrum disorder aged 2-5 years old. In this study, the questionnaire was tested on parents of children with median age of 8 years with various disabilities. Despite the difference, the results of this study show the items of the questionnaire are relevant to parents of children with disability.

Individual author's contributions

All authors met all four criteria of authorship based on the recommendation of the International Committee of Medical Journal Editors (ICJME). P.E. conceptualized the research, analyzed data and co-wrote the paper.

I.G. analyzed and co-wrote the paper. KM co-wrote the paper. R.G., M.A., C.B., C.I., and S.K. collected data and co-wrote the paper.

Disclosure Statement

No funding was received for this work.

Conflict of Interest

We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome. Two of the authors of this paper are part of the editorial board of PJAHS.

Supplementary File

[S1_QRS-F_FilVer](#). Copy of the Maikling Talatanungan sa Resources at Stress ni Friedrich (QRS-F Filipino Version).

References

- Dunning MJ, Giallo R. Fatigue, parenting stress, self-efficacy and satisfaction in mothers of infants and young children. *Journal of Reproductive and Infant Psychology*. 2012 Apr 1;30(2):145-59.
- Little L. Differences in stress and coping for mothers and fathers of children with Asperger's syndrome and nonverbal learning disorders.(Continuing Education Series). *Pediatric nursing*. 2002 Nov 1;28(6):565-71.
- McCarthy A, Cuskelly M, van Kraayenoord CE, Cohen J. Predictors of stress in mothers and fathers of children with fragile X syndrome. *Research in developmental disabilities*. 2006 Nov 1;27(6):688-704.
- Hall HR, Neely-Barnes SL, Graff JC, Krcek TE, Roberts RJ, Hankins JS. Parental stress in families of children with a genetic disorder/disability and the resiliency model of family stress, adjustment, and adaptation. *Issues in comprehensive pediatric nursing*. 2012 Mar 1;35(1):24-44.
- Jones J, Passey J. Family adaptation, coping and resources: Parents of children with developmental disabilities and behaviour problems. *Journal on developmental disabilities*. 2005;11(1):31-46.
- Gomez IN, Gomez MG. Quality of life of parents of filipino children with special needs. *Education Quarterly*. 2013 Jul;71(2):42-58.
- Baker-Ericzén MJ, Brookman-Frazee L, Stahmer A. Stress levels and adaptability in parents of toddlers with and without autism spectrum disorders. *Research and practice for persons with severe disabilities*. 2005 Dec;30(4):194-204.
- Goldman SE, Bichell TJ, Surdyka K, Malow BA. Sleep in children and adolescents with Angelman syndrome: association with parent sleep and stress. *Journal of Intellectual Disability Research*. 2012 Jun;56(6):600-8.
- Yoong A, Koritsas S. The impact of caring for adults with intellectual disability on the quality of life of parents. *Journal of Intellectual Disability Research*. 2012 Jun;56(6):609-19.
- Engström M, Skytt B, Nilsson A. Working life and stress symptoms among caregivers in elderly care with formal and no formal competence. *Journal of nursing management*. 2011 Sep;19(6):732-41.
- American Occupational Therapy Association. Occupational therapy practice framework: Domain and process. *Am J Occup Ther*. 2002;56:609-39.
- Ender D, Kubra K, Asli A, Kezban O. The Examination of the Needs and Stress Levels of the Parents of Handicapped Children in Terms of Some Variables. Online Submission. 2011.
- Antony PJ. How do social, cultural and educational attitudes towards disability affect families of children with disabilities and there by affect the opportunities and daily experiences of people with disabilities in Kerala-India?. Washington State University; 2009.
- Baker BL, McIntyre LL, Blacher J, Crnic K, Edelbrock C, Low C. Pre-school children with and without developmental delay: behaviour problems and parenting stress over time. *Journal of Intellectual Disability Research*. 2003 May;47(4-5):217-30.
- Friedrich WN. A Validational Study of the Questionnaire on Resources and Stress. *Children's Health Care*. 1983 Mar 1;11(4):166-8.
- McKee MG, Gillinov AM, Duffy MB, Gevirtz RN, Russoniello CV. Stress in medicine: strategies for caregivers, patients, clinicians. *Cleve Clin J Med*. 2011 Aug 1;78:S54-64.
- Honey E, Hastings RP, McConachie H. Use of the Questionnaire on Resources and Stress (QRS-F) with parents of young children with autism. *Autism*. 2005 Aug;9(3):246-55.
- Friedrich, Greenberg and Crnic. A Manual of Questionnaire on Resources and Stress. The Child Psychology Portfolio.
- Antony PJ. How do social, cultural and educational attitudes towards disability affect families of children with disabilities and there by affect the opportunities and daily experiences of people with disabilities in Kerala-India?. Washington State University; 2009.
- Tehee E, Honan R, Hevey D. Factors contributing to stress in parents of individuals with autistic spectrum

- disorders. *Journal of Applied Research in Intellectual Disabilities*. 2009 Jan;22(1):34-42.
21. Wang P, Michaels CA, Day MS. Stresses and coping strategies of Chinese families with children with autism and other developmental disabilities. *Journal of autism and developmental disorders*. 2011 Jun 1;41(6):783-95.
 22. Hosseinpoor AR, Stewart Williams JA, Gautam J, Posarac A, Officer A, Verdes E, Kostanjsek N, Chatterji S. Socioeconomic inequality in disability among adults: a multicountry study using the World Health Survey. *American journal of public health*. 2013 Jul;103(7):1278-86.
 23. Polit DF, Beck CT, Owen SV. Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in nursing & health*. 2007 Aug;30(4):459-67.
 24. Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*. 2000 Dec 15;25(24):3186-91.
 25. George D, Mallery P. SPSS for Windows step by step: A simple guide and reference. 11.0 update. wps. ablongman.com/wps/media/objects/385. George 4answers pdf. 2003.
 26. Zablotsky B, Bradshaw CP, Stuart EA. The association between mental health, stress, and coping supports in mothers of children with autism spectrum disorders. *Journal of autism and developmental disorders*. 2013 Jun 1;43(6):1380-93.
 27. Lopez V, Clifford T, Minnes P, Ouellette-Kuntz H. Parental stress and coping in families of children with and without developmental delays. *Journal on Developmental Disabilities*. 2008 May 1;14(2):99.
 28. Islam MZ, Farjana S, Shahnaz R. Stress among parents of children with mental retardation. *Bangladesh Journal of Medical Science*. 2013 Jan 17;12(1):74-80.
 29. Montes G, Halterman JS. Psychological functioning and coping among mothers of children with autism: A population-based study. *Pediatrics*. 2007 May 1;119(5):e1040-6.
 30. Vijesh PV, Sukumaran PS. Stress among mothers of children with cerebral palsy attending special schools. *Asia Pacific Disability Rehabilitation Journal*. 2007;18(1):76-92.
 31. Mushquash CJ, Bova DL. Cross-cultural assessment and measurement issues. *Journal on Developmental Disabilities*. 2007;13(1):53-65.
 32. Philippine Statistics Authority. Persons with disability in the Philippines (Results from 2010 Census); [cited 2019 Mar 06]. Available from: <https://psa.gov.ph/content/persons-disability-philippines-results-2010-census>
 33. Cousino MK, Hazen RA. Parenting stress among caregivers of children with chronic illness: a systematic review. *Journal of pediatric psychology*. 2013 Sep 1;38(8):809-28.
 34. Early Mary B. *Stress Management and Relaxation Techniques. Mental Health Concepts and Techniques for the Occupational Therapy Assistant*. 4th ed. Pennsylvania: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 546 – 560
 35. Autism Society Philippines. About ASP 2014; [cited 2015 Mar 23]. Available from: <http://www.autismsocietyphilippines.org/p/about-asp.html>.
 36. Philippine Association for Citizens with Developmental & Learning Disabilities, 2011; [cited 2015 Mar 23]. Available from: <http://www.pacdd.org/>.