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Original Article

Translation and Cross-Cultural Adaptation of the Filipino Worker Role Interview

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Abstract

Background: The Worker Role Interview (WRI) is an assessment tool that looks at factors impacting return to work capabilities and the client's capacity to return to work. The WRI is developed and originally written by Braveman et al. **Objective:** The objective of the study is to provide a Filipino translation and cross-cultural adaptation of the WRI, as well as establish its face, content, and convergent validity and inter-rater, test-retest, and internal consistency reliability. **Methods:** Expert panels were utilized in the two phases of the study. Phase 1 involves forward translation, synthesis of the translations, backward translation, expert panel review, and pilot testing involving 31 participants. Phase 2 involves retranslation, expert panel review, and administration of the Filipino WRI to 85 participants. **Results**: Certain items were subjected for retranslation to adequately represent the domain of content addressed by the tool to ensure cultural equivalence. The tool has good inter-rater (ICC = 0.75-0.90), test-retest ($rs(85)$ = 0.72-0.91, $p<0.001$), and internal consistency (Cronbach's alpha= 0.96) reliability. Convergent validity with the Worker Role Self-Assessment yielded a weak correlation ($rs(85)$=0.42 - -0.04, $p<0.001$) due to possible differences in language used and manner of administration. **Conclusion:** At this level, the WRI has good validity and reliability properties which can assess the ability of Filipino early adults with disability to return to work.

Key Words: *work, occupational therapy, cross-cultural, disability, Filipino*

INTRODUCTION

Work is defined by the American Occupational Therapy Association (AOTA) as "committed occupation that is performed with or without financial reward."[1] It allows individuals to gain income, build their identity, and support one's family.[2] This occupation is more relevant to people in early adulthood, ranging from age 20-45 years old, as this is the period where the establishment of a career is an expected developmental task according to Levinson's Life Transition Theory.[3,4] With that said, the possible experience of disability within this period would greatly impact one's career, role competence, and occupational performance.

Occupational Therapists (OTs) have an important role in the prevention and rehabilitation of disabilities.[5,6] It is necessary for OTs to adequately evaluate and address clients' concerns regarding work to facilitate continuous occupational performance.[6] One way of achieving this outcome is to use valid and reliable work assessment tools to determine various factors affecting one's capacity to work specifically.

Most of the work assessment tools used by OTs are anchored on various conceptual models of practice like the Model of Human Occupation (MOHO). It explores the interplay of volition, habituation, and performance capacity in order for one to function.[7] Specifically, the Worker Role Interview (WRI) assesses all the constructs of

MOHO that have an impact in returning–to–work, such as personal causation, roles, values, interests, habits, and environment. These constructs can be related to the client's capacity to return to work and may also serve as supporting factors or barriers.[6] The WRI utilizes a semi-structured interview method administered by health professionals. It was found to have high inter-rater and test-retest reliability.[8]

The Worker Role Self-Assessment (WRS) is another work assessment tool that is based on the items in the WRI. It is a self-report questionnaire that has 14 items that determine various aspects of the worker's role. It uses a four-point Likert scale with 4 as *fully agree* to 1 as *fully disagree*.[9]

The WRI has three available formats for OTs, which assess psychosocial and environmental factors that influence a worker with injury and/or disability. The first format is used for injured persons who intend to return to a specific work. The second format is used for persons with long-standing illness or disability who may have limitations in work participation. The third format combines the WRI and Occupational Circumstances Assessment Interview and Rating Scale (OCAIRS) used for clients with long-standing illness or disability. The WRI rating form comprises 16 items that correspond to six MOHO constructs and is scored by the rater using a four-point Likert scale with 1 as *strongly interferes*, 2 as *interferes*, 3 as *supports*, and 4 as *strongly supports* return-to-work.[10] The scores are interpreted per item to assess which MOHO construct may be reflected as an issue that causes the clients' problem to work.

The WRI is originally written in the English language. It has been culturally adapted and translated to several languages such as the Swedish (WRI-S), Icelandic (WRI-IS), and German (WRI-G) Worker Role Interview. At present, there is no Filipino version of this work assessment tool. The administration of the original tool may not fully capture certain linguistic and cultural nuances when utilized in the Filipino setting. The lack of a culturally adapted WRI may cause difficulties in determining factors that are influencing the Filipino workers' capacity for work reintegration.

With this, this study aims to provide a Filipino translation and cross-cultural adaptation of the WRI. This study also aims to determine its psychometric properties; namely: face, content, convergent validity and inter-rater, test-retest, and internal consistency reliability.

METHODS

Ethical Considerations. The study complied with the Declaration of Helsinki, Good Clinical Practice Guidelines of the Philippine Health Research Ethics Board, CIOMS 2016, and the National Ethical Guidelines for Health and Health-related Research 2017. It obtained approval from the University of Santo Tomas-College of Rehabilitation Sciences Ethics Review Committee (UST-CRS ERC) to guarantee compliance with ethical standards before conducting the study.

Study Design. The study utilized a quantitative, psychometric, cross-cultural validation design accomplished in two phases. Cross-cultural validation was done to determine whether the measures produced in one culture are meaningful and can be applied in another culture. Expert reviews were gathered across the phases of the study using semi-structured interviews.

Participants. Two sets of expert panels, each composed of four licensed OTs (OT 1-4 for Phase 1 and OT 5-8 for Phase 2), with at least three years of experience in the adult clinical setting and are utilizing various work assessment tools, two forward (F) translators (F1, F2 for Phase 1 and F3, F4 for Phase 2), and two backward (B) translators (B1, B2 for Phase 1 and B3, B4 for Phase 2), were purposefully selected. The translators should be bilingual, bicultural, and have at least a bachelor's degree in Linguistics. F1 and F3 should have Filipino as the primary language and should know the health terminology and construct of the instrument. F2 and F4 should have Filipino as the primary language, should know cultural and linguistic nuances of Filipino, and have no medical background and knowledge of the construct of the instrument. B1-4 should have English as the

primary language, should know cultural and linguistic nuances of English, and have no medical background and knowledge of the construct of the instrument. These two sets of expert panels were tasked to review the final synthesized version of the translated questionnaire (T12) to establish its validity on the face and content level. Then, OT 5-8, F3, F4, B3, and B4 were tasked to retranslate certain items with a Content Validity Index for individual items (I-CVI) score of 0.75 and below to produce the final translated version used to establish its convergent validity and reliability measures.

The study obtained informed consent from all participants to ensure voluntariness before the commencement of the study. A total of 31 participants without disabilities, who are currently working in the service sector and whose ages fall between 17 to 45, were recruited from Barangay Salvacion, Quezon City. The barangay was chosen using simple randomization for the pilot testing for Phase 1. It was performed through a fishbowl method by a person not related to this study and the researchers. This number is within the recommended range (30-40 participants) based on existing protocols.[11] Meanwhile, a total of 85 participants, who are classified as persons with disabilities, were invited to participate in Phase 2. The medical diagnoses of these persons with disabilities run across various general medical, psychiatric, orthopedic, and neurologic conditions. Additional inclusion criteria include being a Filipino, age between 17 to 45, residing in Metro Manila, understands verbal and written instructions, understands Filipino and English, and has a history of being employed. The Mini-Mental Status Examination (MMSE) and Transparent Language English and Filipino online proficiency tests were respectively administered to rule out cognitive deficits and ensure bilingual competence for both English and Filipino. The participants can represent the target users for the WRI since they fall under the intended demographic profile. The WRI is also not specific to a certain medical diagnosis or condition.

Procedures. The WRI is a work-related assessment tool administered by health professionals as a semi-structured interview to determine the factors that support or hinder the return-to-work of individuals with injury or disability. Permission from the developer of the tool was obtained before conducting the research.

The translation and cross-cultural adaptation of the Filipino Worker Role Interview underwent two phases (Phase 1 and Phase 2). Phase 1 (Steps 1-5) was the initial translation of the tool from the source language (English) to the target language (Filipino) and the establishment of face and content validity. Face validity determines whether the test measures what it claims to, while content validity identifies whether the test can cover all relevant variables in the domain that it needs to measure. Retranslation and re-evaluation of the content validity for selected items may be performed under these phases. Phase 2 (Steps 6-8) covers possible retranslation and re-evaluation of selected items and further determination of other psychometric properties, specifically convergent validity, inter-rater, test-retest, and internal consistency reliability. Convergent validity pertains to the degree of relatedness of two measures. Inter-rater reliability measures the degree of agreement among the raters. Test-retest reliability, also called repeatability, shows the degree to which scores remain the same when measuring a variable on different occasions. Lastly, internal consistency reliability evaluates the connection among multiple items in a test that intends to measure the same construct.

Step 1: Forward Translation. Following the guidelines provided by Beaton and Sousa & Rojjanasrirat, two forward translations (FT 1, FT 2) were done from the source language (English) to the target language (Filipino).[11] FT 1 provided a more reliable and clinical perspective equivalency, while FT 2 reflected the nuances of the language by highlighting ambiguous meanings in the original questionnaire. In this step, all 30 questions in Format 1 of the WRI were used for the forward translation.

Step 2: Synthesis of the Translations. F1, F2, and a recording observer synthesized their independent translations of all the 30 questions in Format 1 of the WRI during a meeting with the researchers to produce a final synthesized translation (T12). A written report containing the synthesis process, the issues addressed, and

how these issues were resolved were also produced.

Step 3: Back Translation. To ensure that the 30 items in Format 1 of the WRI in T12 reflected the same item content as the original version, two backward translators, both blinded to the original version of WRI, translated T12 back to the original English language, producing versions BT 1 and BT 2. This was to avoid information bias and to elicit unexpected meanings of the items in T12. Steps 1 to 3 are done to determine the I-CVI scores to assess similarity in the meaning of the items.

Step 4: Expert Panel Review 1. The expert panel (OT 1-4, F1, F2, B1, and B2) examined the original 30 questions in Format 1 of the WRI, the T12, BT 1, and BT 2, and the written reports which explained the issues encountered and the rationale behind the decisions made in the earlier stages. Face validity and content validity were also determined during this meeting by determining the equivalence between the original and translated versions of the WRI. The panel ensured that people with a Grade 6 level of reading would understand the new translated version by making minor changes to the wording of some items. The final version was used during pilot testing.

Step 5: Pilot Testing. Training of the researchers was done to review the administration of the WRI before the pilot test. The final version was administered to 31 early adults without disabilities working in the service sector. Participants were asked whether or not each question was understood and how they understood the question. It should be noted that this process only provides for some measures of quality for content validity. This step marks the end of Phase 1.

Step 6: Retranslation. In Phase 1, questions 3, 3.1, 3.2, 20, 23, 27, and 28 in the final version of Format 1 of the WRI received I-CVI scores of 0.75 and below. This necessitated F3, F4, B3, and B4 to perform Steps 1-3 again in Phase 2. Under the same phase, Format 2 of the WRI, which has 64 questions, has also undergone Steps 1-3 so that it may be utilized for the intended population who have disabilities.

Step 7: Expert Panel Review 2. The seven retranslated items from Format 1 and thirteen retranslated items from Format 2 underwent another expert panel review under OT 5-8. The expert panel explained the issues encountered per item and finalized the translation to be used in determining other psychometric properties prior to the administration of the tool to its intended population.

Step 8: Administration of the Filipino WRI. Prior to the actual administration of the Filipino WRI and WRS, a dry run was performed to ensure consistent administration and scoring. Data gathering commenced at rehabilitation centers catering to physical dysfunction cases.

Administration of the Filipino WRI was done with two researchers independently scoring the 16-item WRI rating form from which inter-rater reliability can be measured. The WRS was answered by the 85 participants after the administration of the Filipino WRI for convergent validity. Participants were informed that a re-administration would be done after seven days. Upon return, the same researchers performed a re-administration of the Filipino WRI for test-retest reliability. The internal consistency reliability of the 64 items of the Filipino WRI was determined. Convergent validity of the 64 items of the Filipino WRI was also performed. A summary of all the steps performed can be found in Figure 1.

Data Analysis. The gathered data were analyzed using Microsoft Excel and Stata Statistical Software. In determining the content validity per item in the tool, the CVI was utilized to analyze scores if they are acceptable. Identified context experts rated the item relevance for the I-CVI and S-CVI, which will indicate whether the questions will suffice to represent the domain covered by the tool. If and when the I-CVI is greater than 75%, the item is considered appropriate enough. If it falls between 70% and 75%, the item will need revision.[12] However, if it falls under 70%, it will be eradicated.

For the inter-rater reliability, data gathered from the first administration by the two raters were

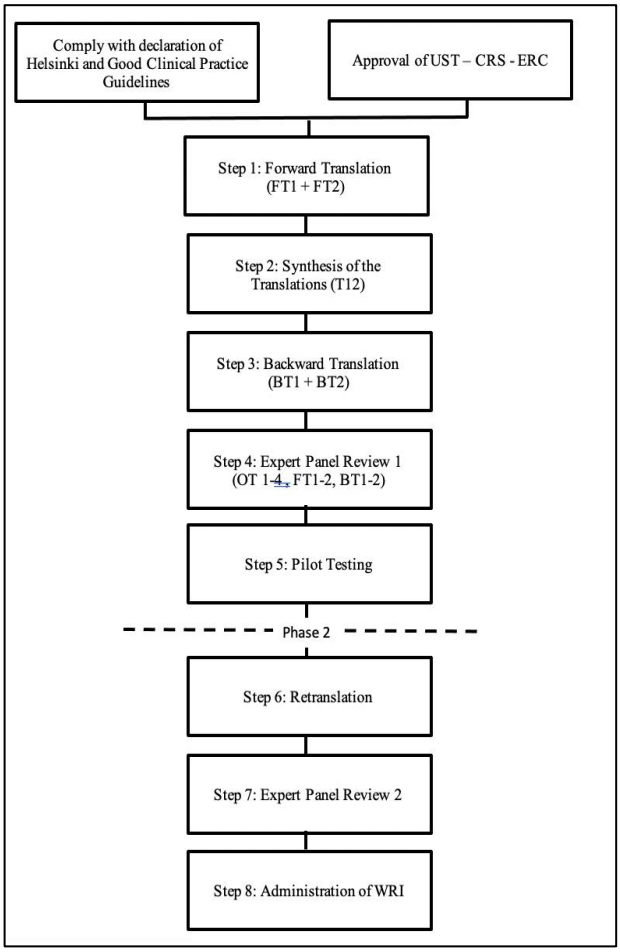

Figure 1. Summary of procedures done for Phase 1 and 2 of the study.

analyzed using a confidence interval of Intraclass Correlation Coefficient (ICC) where values of <0.50, between 0.50 and 0.75, between 0.75 and 0.90, and greater than 0.90 will correspond to poor, moderate, good, and excellent reliability, respectively.[13] For internal consistency, the researchers agreed that Cronbach's alpha values of 0.70 or higher are considered acceptable.[11,14] Spearman's correlation test was used for convergent validity to determine the statistical relationship between the scores. It was also utilized in determining the test-retest reliability to compare the results of the first and second administrations.[15] A correlation coefficient of >0.00 would mean there is a positive correlation between 2 variables.[16]

RESULTS

Translation. The Phase 1 expert panel had to agree on a version that captures the same meaning as the original version of the WRI. Some of the translation process issues were as follows:

1. There were no direct Filipino translations for some terms (e.g., Personal Causation, Values, Interests, Roles, Habits, and Environment;
2. Some terms have different technical meanings, such as "injury" and "disability;"
3. Translated term/phrase may not be culturally appropriate or may have a negative connotation; and
4. Some items are too vague to be understood and may not entirely capture the intended meaning of the question being asked.

Face and Content Validity. The face validity was obtained through the agreement of OT 1-4, who served as the expert panel members during Phase 1.

CVI was used to determine the adequacy of the items sampled for inclusion in representing the domain of content addressed by the instrument. Most of the questions garnered an I-CVI score of 1.00 except for 7 questions in Format 1 and 13 questions in Format 2, which had an I-CVI score of 0.75 and below; hence, these questions were subjected for retranslation. Phase 2 of the study focused only on Format 2 of the WRI. Modification of certain items in Format 2 of the WRI, which are numbers 3, 4, 5, 9, 16, 22, 24, 25, 29, 30, 31, 48, and 49, was performed. After retranslation, 7 out of 13 items garnered a 1.00 I-CVI score; two items received a 0.75 I-CVI score, while four had a 0.50 I-CVI score. Table 1 shows a summary of the I-CVI scores of the 20 items that were subjected to retranslation. The S-CVI/Ave of the tool, computed by obtaining the average of all I-CVI scores, is 0.95.

The summary of the translations and retranslations of the items with low I-CVI scores is seen in Table 2.

Construct Validity. The proportion of each member of the expert panel for Phase 1 (F1, F2, B1, B2, and OT 1- 4), who understood and deemed each item valid, was computed to

determine the construct validity of each item (including headings, subheadings, and

Table 1. Summary of the I-CVI scores of the 20 items from WRI before and after retranslation.

Question	I-CVI Score	
	Phase 1	Phase 2 (Retranslation)
Part 1		
3	0.75	
3.1	0.75	
3.2	0.75	
20	0.75	N/A
23	0.75	
27	0.75	
28	0.75	
Part 2		
3	0.75	0.75
4	0.75	1.00
5	0.75	0.75
9	0.75	1.00
16	0.50	1.00
22	0.75	0.50
24	0.75	1.00
25	0.75	1.00
29	0.75	0.5
30	0.75	0.5
31	0.75	1.00
39	0.50	0.50
48	0.75	1.00

instructions) for each equivalence. This will also determine if the tool will be able to assess the intended construct on the psychosocial and environmental factors that influence a worker with injury and/or disability. The set criterion for each item of the translated version is 0.80, and all items that scored a proportion that is higher than the criterion were considered culturally equivalent.

Table 3 shows a summary of the scores that did not meet the criterion set for each equivalence. A total of 49 out of 52 items met the criterion set for semantic equivalence of the first part of the translated tool. Items 41, 44, and 49 did not meet the criterion as they attained a proportion of 0.75, 0.63, and 0.75, respectively. A total of 75 out of 78 items met the criterion set for the second part of the tool. Items 23, 50, and 69 attained a proportion of 0.75.

A total of 49 out of 52 items met the criterion set for idiomatic equivalence of the first part of the translated tool. Items 13, 44, and 49 attained a proportion of 0.75, 0.63, and 0.75, respectively. All 78 items met the criterion set for the second part of the translated tool.

A total of 51 out of 52 items met the criterion set for experiential equivalence of the first part of the translated tool. Only item 44 had a proportion below the criterion set at 0.63. All 78 items of the second part of the tool met the criterion set for experiential equivalence.

A total of 51 out of 52 items met the criterion set for conceptual equivalence of the first part of the translated tool. Item 44 gained a proportion of 0.63, which did not meet the set criteria. All 78 items met the criterion set for conceptual equivalence of the second part of the translated tool.

The proportion of participants who reported that each respective item was understandable was computed and showed that a total of 43 out of 49 items met the criterion set. 87.76% of items in Part 1 and 97.33% of the items in Part 2 were found to be understandable by at least 80% of the participants during the pilot testing.

Common trends in the words that were difficult to understand were actual English words such as *injury*, *routine*, and *paranoid* or English-sounding words such as *promosyon* (promotion), *kwalipikasyon* (qualification), *suportado* (support), *sosyal* (social), and *mag-aadjust* (adjust). Participants also had difficulty understanding several Filipino words and phrases, which may mean that these words are not commonly used Filipino terms. They were subjected to retranslation to ensure complete understanding and adequate representation of the original tool.

Internal Consistency. Internal consistency was determined with the Cronbach's alpha computed for the Filipino WRI being 0.96, which may be interpreted as excellent. This suggests that the Filipino WRI items are interrelated, and items intended to measure the same construct produce similar scores.

Table 2. Summary of the translations and retranslations made for the items with low I-CVI scores

Question	Original	First Translation	Retranslation
		Part 1	
3	How has your injury affected you outside of work? (H)	Paano nakaapekto ang natamong injury o kapansanan sa labas ng iyong trabaho? (H)	N/A
3.1	Describe your responsibilities at home.	Ilarawan mo ang mga tungkulin mo sa bahay.	
3.2	Describe your daily routine.	Ilarawan mo ang mga pang-araw-araw na ginagawa mo sa bahay (routine).	
20	How about work habits that aren't so good or habits that you'd like to change? (H)	Anu-ano naman ang mga hindi gaanong mabubuting gawi na nais mo ring baguhin? (H	
23	Did you have any other jobs that you liked more than your present job? If so, why? (I)	Sa mga naging trabaho mo noon, alin ang pinakagusto mo? Mas gusto mo ba iyon kaysa sa iyong kasalukuyang trabaho? Kung ganon, Bakit? (I)	
27	Do you think they would like to see you back on the job? (E)	Sa palagay mo ba ay matutuwa sila sa iyong pagbabalik-trabaho? (E)	
28	How do your family and friends feel about your injury and your being out of work? (E)	Ano ang naramdaman ng iyong mga kapamilya at kaibigan sa iyong natamong injury o kapansanan at sa pagkawala ng iyong trabaho? (E)	
		Part 2	
3	Are you able to structure your days to meet your current responsibilities? (H)	Naisasaayos mo ba ang iyong araw upang magawa ang iyong mga tungkulin? (H)	Naisasaayos mo ba ang iyong mga araw para matugunan ang iyong mga kasalukuyang tungkulin?
4	How did your routine change when you got sick? (H)	Paano nabago ng pagkakasakit mo ang iyong pang-araw-araw na gawain? (H)	Noong ikaw ay nagkasakit, paano nito nabago ang iyong mga pang-araw-araw na gawain?
5	Were you able to make adjustments in your routines or in your responsibilities (or things you needed to do) while you have been sick? (H/R)	May binago ka ba sa mga bagay na kailangan mong gawin habang may sakit ka? (H)	May mga pagbabago ka bang ginawa sa iyong mga pang-araw-araw na gawain o mga tungkulin habang ikaw ay may sakit?
9	Do you feel that your current routine would support returning to work? (H)	Sa palagay mo ba ay makatutulong ang iyong pang-araw-araw na mga gawain sa iyong pagbabalik-trabaho? (H)	Sa palagay mo ba ay makakatulong ang iyong mga kasalukuyang ginagawa sa araw-araw sa iyong pagbabalik-trabaho?
16	Do you have the physical ability to accomplish the things you need or want to do? (PC)	Kaya mo bang gawin at tapusin ang mga bagay na kailangan o gusto mong gawin? (PC)	Mayroon ka bang pisikal na kakayahan upang magawa ang mga kailangan o gusto mong gawin?
22	How do your family/friends feel about your being out of work? (E)	Ano ang pakiramdam ng iyong mga kapamilya/kaibigan tungkol sa iyong kawalan ng trabaho? (E)	Ano ang pakiramdam ng iyong mga kapamilya/kaibigan tungkol sa iyong hindi pagtatrabaho?
24	In previous jobs, how has your boss supported you working and keeping the job? (E)	Sa iyong mga naging tabaho, paano ka sinuportahan ng dati mong boss para hindi ka mawalan ng trabaho? (E)	Sa iyong mga naging trabaho, paano ka sinuportahan ng iyong boss upang manatili sa iyong pagtatrabaho?
25	Do you prefer to work alone or with others? How well do you work with others? (E)	Mas nakapagtatatrabaho ka ba kapag mag-isa ka o mas gusto mo' ng may kasama? Paano ka makitungo sa iba? (E)	Mas gusto mo bang nagtatrabaho nang mag-isa o mas gusto mo' ng may kasama? Gaano ka kahusay makipagtrabaho kasama ang iba?
29	What was the most enjoyable and/or satisfying work that you have had? What made it enjoyable or satisfying? (I)	Sa lahat ng naging trabaho mo, alin ang pinakanagustuhan mo? Bakit mo ito nagustuhan? (I)	Sa lahat ng naging trabaho mo, alin ang pinakamasaya at/o pinakakinawilihan mong trabaho? Paano ito naging masaya at/o kawili-
30	What was the least enjoyable and/or satisfying work you have had? What made it such an unsatisfying experience? (I)	Sa lahat ng naging trabaho mo, alin ang pinaka hindi mo nagustuhan? Bakit mo ito hindi nagustuhan? (I)	Sa lahat ng naging trabaho mo, alin ang pinakahindi masaya at/o pinakahindi kinawilihan mong trabaho? Paano ito hindi naging masaya
31	What work responsibilities in your life do you feel you do or have done well, or are proud of? (PC)	Anu-anong mga tungkulin sa buhay ang sa tingin mo ay nagawa mo nang maayos, o ipinagmamalaki mo? (PC)	Anu-anong mga tungkulin mo sa trabaho ang sa palagay mo ay nagawa mo nang maayos o ipinagmamalaki mo?
39	What studies have you done in the past? What qualifications did you get? (R)	Anu-ano ang mga pinag-aralan mo noon? Hanggang saan ang naabot mong kwalipikasyon? (R)	Anu-ano ang mga pinag-aralan mo noon? Anong mga kwalipikasyon o degree ang iyong nakuha?
48	Are you able to concentrate, problem-solve, and make decisions to do a job? (PC)	Nakakapag-concentrate ka ba, nakapagbibigay- solusyon sa mga problema at nakapagdedesisyon sa mga bagay na kailangan o gusto mong gawin?	May kakayahan ka ba na makapag-concentrate, makapagbigay ng solusyon sa problema, at makapagdesisyon sa pagtatrabaho?

Inter-Rater Reliability. As seen in Table 4, the items obtained good to excellent inter-rater reliability with 0.75-0.90 ICC estimates with 14 items (Items 2-15) having good inter-rater reliability and notably, two items (Items 1 and 16) having excellent inter-rater reliability with a value of 0.92 and 0.93, respectively. The ICC was reported on an item-by-item basis as the score for the WRI is not totaled; thus, the point of comparison was based as such. This was also done to specifically identify which of the items have high or low inter-rater reliability and, therefore, can be used as a basis to revise the items.

Test-Retest Reliability. Table 4 also shows Spearman's coefficient of the Filipino WRI items. Results of Spearman's correlation test indicated that there was a strong relationship between the ratings ($rs(85)=0.72$ to 0.91, $p<0.001$).

Convergent Validity. The convergent validity computed for the Filipino WRI against WRS indicated that there was a weak relationship between the items ($rs(85)=0.42$ to -0.04, $p<0.0001$ to 0.99). As for the convergent validity among the Filipino WRI items, they yielded a strong relationship between the items ($rs(85)=0.80$ to 0.41, $p<0.001$).

Discussion

Several issues with the translated version emerged during the expert panel review and pilot testing. Concerns regarding the lack of direct translations were raised in certain terms, and issues on the literal translation were identified. There were also recurring issues on lengthy items. According to Widenfelt, problems with translated questionnaires are often due to the nature of items being translated too literally.[11] Conflict in the definition of concepts and implications of differences in meaning may then necessitate the use of equivalent expressions rather than identical.[13]

Discrepancies in the translations may preclude OTs from utilizing coherent and user-friendly evaluation tools in their practice. Difficulty in understanding the concepts being conveyed by a tool can also happen due to altered semantics during translations as two different cultures have different underlying linguistic frameworks.[14] Such concern is continuously addressed by the translators in the study. To produce and eventually carry out an accurate and comprehensive treatment plan, OTs should be able to ensure that all recipients of care have a clear understanding of the questions for them to give relevant answers. Providing a contextual translation of the tool, which accommodates all cultural nuances, can greatly improve the accuracy of the evaluation process. This is of utmost consideration when it comes to work since cultural variations exist in how individuals perform and value this area of occupation.

Most of the items in the Filipino WRI demonstrated acceptable content validity. This is also evident in the other translations from other countries wherein the items generated acceptable content validity indices and replicated the item hierarchies of the original version of the Worker Role Interview.[15-17] In addition, the convergent validity among Filipino WRI items was found to have a strong relationship. However, there exists a weak relationship in the convergent validity obtained between the Filipino WRI and the WRS. The WRS may be based on the items of the WRI; however, the difference in the overall test structure between the two tools may have contributed to this weak relationship. The WRS focuses on predicting the participants' work capacity, while the WRI assesses the different factors that could influence their ability to return to work. Furthermore, in the WRI, the participants were able to give specific and elaborate answers, while the items in WRS were structured to have the participants' responses be reported on a 4-point rating scale. Differences in the language used during their administration may have further contributed to attaining the weak results. A more similar test structure, which should also be the case on the constructs specifically explored, may have generated a strong relationship between the two tools.

The established validity of the Filipino WRI can help OTs determine better return-to-work outcomes and enhance their ability to identify factors that affect one's ability to work after disability. This could also effectively and comprehensively investigate the Filipino

Table 3. Summary of item scores that did not meet the 0.80 criterion set for each equivalence.

Item Number	Equivalence			
	Semantic	Idiomatic	Experiential	Conceptual
		Part 1		
13	0.88	0.75	0.88	0.88
41	0.75	0.88	1.00	1.00
44	0.63	0.63	0.63	0.63
49	0.75	0.75	0.88	0.88
		Part 2		
23	0.75	1.00	1.00	1.00
50	0.75	1.00	1.00	1.00
69	0.75	1.00	1.00	1.00

Table 4. Summary of the Interrater Reliability and Test-Retest Reliability Results

Filipino WRI Rating Form Item	Interrater Reliability	Test-Retest Reliability
	Intraclass Correlation Coefficient	Spearman's Coefficient (***p<0.001)
1	0.92	0.90
2	0.85	0.82
3	0.86	0.85
4	0.78	0.72
5	0.85	0.82
6	0.80	0.75
7	0.76	0.75
8	0.82	0.81
9	0.78	0.74
10	0.82	0.81
11	0.83	0.82
12	0.79	0.76
13	0.80	0.77
14	0.86	0.83
15	0.75	0.77
16	0.93	0.91

worker's personal, physical, and social context to detect barriers and supporting factors to aid in formulating return-to-work interventions given that cultural considerations were rightfully incorporated in the adaptation of this tool.

This study confirmed the excellent internal consistency of the Filipino WRI due to the high value of Cronbach's alpha obtained. This could be associated with the increased number of items in the suggested questionnaire in Format 2 of the Filipino WRI, making the items more closely interrelated with each other. This finding would guarantee a clear focus and emphasis on both evaluation and intervention processes for the tool can actually measure consistently the intended construct on work. This leads to a service delivery that is not fragmented and directly targets components specific to work.

The Filipino WRI also has good inter-rater reliability. According to Ottenbacher, excellent inter-rater reliability of a tool in clinical practice is a necessity.[18] Results also indicate that the Filipino WRI has stability over time based on the findings of the test-retest reliability. This may be associated with the short time interval between the two administrations, resulting in the change in response being minimal.[17] This established stability affirms that the tool may be repetitively administered and would consistently identify issues that should be addressed by OTs.

However, it is worth mentioning that certain items have noticeably higher inter-rater and test-retest reliability while some items gained lower scores. Items 1 and 16 have a specific line of questioning regarding their work resulting in more definite answers from the participants contributing to more consistent results. Specifically, Item 1 is purely introductory in nature to elicit the participant's line of work, while Item 16 focuses on the participant's outlook and expectations of their work environment.

On the other hand, the scope of Items 4, 7, 9, 12, and 15 are broader and are not straightforward in nature; thus, the responses to these items are more subject to change contributing to the attainment of lower scores. For example, Item 9 looks at the participant's current responsibilities and leisure participation, which could elicit variable responses. In addition, Items 4, 7, 12, and 15 are based on the participant's routine and previous work regimen. Some details of which are prone to be easily overlooked. This information could help other studies focusing on tool development by exploring the limitations of specific items and ensuring utmost consistency in test structure and scope of items.

The translation of the Filipino WRI was made to be culturally relevant to reflect the values, habits, and lifestyle of the client working in the Philippines. Contextualizing the terms is critical in accurately communicating the questions and correctly recognizing how the disability affects their work performance. Successfully conveying the translated WRI would establish a deeper understanding of the client's perspective in their work situation here in the Philippines.

In addition, the Filipino WRI may aid in the formulation of relevant programs and practice guidelines when it comes to maximizing work participation. According to the study by Choudhary et al., OTs need to develop practice guidelines in evaluating clients for their work readiness to have greater satisfaction with the evaluation process and improved outcomes for clients.[19] Valid and reliable measures, such as the Filipino WRI, should be staples in every process involved in the OT service delivery since it can comprehensively describe various tenets related to work such as perceptions of abilities and limitation, commitment to the worker role, perception of the impact of disability, and ability to adjust to habits and routines among others. This broadens the lens that OTs may adopt when understanding clients under their case, leading to a more holistic and client-centered provision of services.

CONCLUSIONS

The WRI is an assessment tool that evaluates factors that influence the client's ability to return to work after an injury or disability. At this level, this study was able to produce a translated and culturally-adapted Filipino WRI that is valid and reliable to measure the ability of Filipino early adults with disability to return to work. The said translation and cultural adaptation were performed not only considering the literal translation of items but also emphasizing

implications on clarity in order for the OT and the client to comprehend the items better. The study findings showed that the Filipino WRI items fit together conceptually to measure psychosocial capacity for return-to-work, and it can be used with confidence in determining such despite the independent scoring done by the raters from their clinical judgment. Findings on its convergent validity against another work assessment tool, the WRS, revealed that two tools might not necessarily produce the same results even though they can both measure return-to-work capacity, which can be due to the difference in the utilized language and the difference of administration of the tools. A culturally adapted tool with established psychometric properties will aid in the formulation of contextualized return-to-work interventions that will benefit the Filipino occupational therapists and the profession's stakeholders.

Limitation of the study. In this study, the age group of the participants included those between the ages of 17-45 years old. However, the current workforce of the Philippines consists of individuals between the ages of 25-54.[20] Therefore, it would be beneficial to extend the maximum age of the participants to at least 54 years old for pilot testing. The recruited participants for the study were limited to the population of Metro Manila. It is recommended for future studies to obtain a larger population to generalize the results and gain a more varied perspective to make the tool more culturally relevant and to ensure the sound psychometric properties of the Filipino version to its intended population. The study also gave findings on the psychometric properties of the second format of the Filipino WRI as the researchers focused on the population of those with long-standing illness or disability. Further study on the psychometric properties of the other formats intended for a different population is recommended. The psychometric property findings do not apply to the first and the third format of the tool. In addition, the researchers administered the tool to the participants instead of independent raters who are not part of the study, which may give rise to the tendency of subconsciously obtaining answers that support the researcher's preconceived notions.[21]

Individual author's contributions

All authors met all four criteria of authorship based on the recommendation of the International Committee of Medical Journal Editors. K.M, conceptualized the paper, analyzed data, co-wrote the paper; J.G., J.M. J.T., N.D., H.M., A.O., AND R.S. collected data, analyzed data, co-wrote the paper

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Conflicts of interest

No known conflicts of interest are associated with this work. The corresponding author is part of the Editorial Board of PJAHS

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Supplementary Material

Supplementary Material A. Filipino Worker Role Interview.

References

1. American Occupational Therapy Association. Occupational therapy practice framework: Domain and process (3rd ed.). American Journal of Occupational Therapy. 2017;68(Supplement_1):S1-S48. DOI: 10.5014/ajot.2014.682006.
2. Ekbladh E. Return to work: the predictive value of the WRI (WRI) over two years. Work. 2010;35(2):163-172. DOI: 10.3233/WOR-2010-0968.
3. Levinson DJ. The seasons of a woman's life: A fascinating exploration of the events, thoughts, and life experiences that all women share. Ballantine Books; 2011.
4. Luengo Kanacri BP, Pastorelli C, Eisenberg N, Zuffianò A, & Caprara GV. The development of prosociality from adolescence to early adulthood: The role of effortful control. Journal of personality. 2011;81(3):302-312. DOI: 10.1111/jopy.12001.
5. Kaskutas V. Occupational Therapy's Role in Helping Clients Work. OT Practice. 2012;17(9):1-8.
6. Fisher T. Role of Occupational Therapy in Preventing Work-Related Musculoskeletal Disorders With Recycling Workers: A Pilot Study. American Journal of Occupational Therapy. 2016;71(1):7101190030p1. DOI: 10.5014/ajot.2017.022871.
7. Kielhofner G. Model of human occupation: Theory and application (4th ed.). Baltimore: Lippincott Williams & Wilkins; 2008.
8. Velozo CA, Kielhofner G, Gern A, et al. Worker role interview: Toward validation of a psychosocial work-related measure. Journal of Occupational Rehabilitation. 1999;9(3):153-168. DOI: 10.1023/A:1021397600383.
9. Wastberg BA, Haglund L, & Eklund M. Psychometric properties of the Worker Role Self-assessment instrument used to evaluate unemployed people in Sweden. Scandinavian Journal of Occupational Therapy. 2009;16(4):238-246. DOI: 10.3109/11038120902730166.
10. Fisher GS. Administration and application of the Worker Role Interview: Looking beyond functional capacity. Work. 1999;12(1):13-24. Available from: https://content.iospress.com/articles/work/wor00004.
11. Souza ACD, Alexandre NMC, & Guirardello EDB. Psychometric properties in instruments evaluation of reliability and validity. Epidemiologia e Serviços de Saúde. 2017;26(3):649-659. DOI: 10.5123/S1679-49742017000300022.
12. Widenfelt BM, Treffers PD, Beurs ED, Siebelink BM, & Koudijs E. Translation and Cross-Cultural Adaptation of Assessment Instruments Used in Psychological Research With Children and Families. Clinical Child and Family Psychology Review. 2005;8(2):135-147. DOI: 10.1007/s10567-005-4752-1.
13. Hunt SM, Alonso J, Bucquet D, Niero M, Wiklund I, & Mckenna S. Cross-cultural adaptation of health measures. Health Policy. 1991;19(1):33-44. DOI: 10.1016/0168-8510(91)90072-6.
14. Smith KH. Cross-Cultural Equivalence and Psychometric Properties of the Traditional Chinese Version of the Inviting School Survey-Revised. Journal of Invitational Theory and Practice. 2011;17:37-51.
15. Law M. Measurement in occupational therapy: Scientific criteria for evaluation. Canadian Journal of Occupational Therapy. 1987;54(3):133-138. DOI: 10.1177/000841748705400308.
16. Haglund L, Karlsson G, Kielhofner G, & Lai JS. Validity of the Swedish Version of the Worker Role Interview. Scandinavian Journal of Occupational Therapy. 1997;4(1-4):23-29. DOI: 10.3109/11038129709035718.
17. Ottenbacher KJ, Hsu Y, Granger CV, & Fiedler RC. The reliability of the functional independence measure: a quantitative review. Archives of Physical Medicine and Rehabilitation. 1996;77(12):1226-1232. DOI: 10.1016/s0003-9993(96)90184-7.
18. Bolarinwa OA. Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. Nigerian Postgraduate Medical Journal. 2015;22(4):195-201. DOI: 10.4103/1117-1936.173959.
19. Choudhary S, Viner S, & Kirsh B. How Do Occupational Therapists Assess Work Readiness Among Mental Health Consumers?. Occupational Therapy in Mental Health. 2015;31(3):266-282. DOI: 10.1080/0164212x.2015.1046102.
20. Employment Situation in January 2017 (Final Results) [Internet]. [cited 2017 Sept 26]. Available from: https://psa.gov.ph/content/employment-situation-january-2017-final-results.
21. Arafat S, Chowdhury H, Qusar M, & Hafez M. Cross Cultural Adaptation and Psychometric Validation of Research Instruments: A Methodological Review. Journal of Behavioral Health. 2016;5(3)129-136. DOI: 10.5455/jbh.20160615121755.