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Study Protocol

Cross-cultural Adaptation and Reliability of the Multidimensional Outcome Expectations for Exercise Scale (MOEES) in Filipino Older Adults: A Study Protocol

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Abstract

Background: Older adults have varying outcome expectations on why they exercise. The Multidimensional Outcomes Expectation for Exercise Scale (MOEES) is a tool used to measure this; however, it has not been cross-culturally adapted yet in the Filipino setting. **Objectives**: This study aims to translate and cross-culturally adapt the MOEES into Filipino and establish its preliminary psychometric properties in terms of internal consistency and test-retest reliability in community-dwelling Filipino older adults. **Methods**: This psychometric study is divided into two phases. Phase 1 will be on the MOEES translation and cross-cultural adaptation in accordance with the guidelines set by the Beaton Protocol. Phase 2 will be on the establishment of preliminary psychometric properties based on the internal consistency and test-retest reliability of the adapted MOEES from at least 30 conveniently sampled community-dwelling Filipino older adults, aged 60 years old or above, with a Mini-Mental State Examination score of at least 24 and classified as active based on the Telephone Assessment of Physical Activity. Internal consistency will be assessed using Cronbach's alpha coefficient and item-total correlations. Intraclass correlation/ ICC (3, K) will be utilized to establish the tool's test-retest reliability. **Expected Results**: This will develop a translated and cross-culturally adapted MOEES in Filipino with good internal consistency, item-total correlation, and test-retest reliability that can be used by health professionals as a guide in designing, implementing, and assessing exercise programs for older persons to ensure achievement of their treatment outcome expectations.

Key Words: *Outcome Expectations, Exercise, MOEES, Older adults*

INTRODUCTION

Regular exercise participation in the geriatric population is linked to their outcome expectations.[1-5] Outcome expectation for exercise is defined as the perceived effects of participating in exercise or physical activity.[6] It encompasses three related but conceptually independent sub-domains: physical, social, and self-evaluative outcome expectations.[7-8] It has been shown to predict physical activity in older adults, with positive outcome expectations linked to a greater likelihood of exercising.[1,7-8]

The exercise outcomes expectations of older adults include: 1) prevention of disease and health complications, and 2) promotion of social engagement and psychological needs.[1-5] Exercise participation has been shown to reduce the risk of cardiovascular disease in older adults while improving physical functioning and quality of life.[2-4] Also, it has been proven to promote an interpersonal environment that fosters social interaction and connection.[5] Furthermore, it has been attributed to the fulfillment of psychological needs such as stress relief, a sense of accomplishment, and competence.[1,4-5]

Physical, psychological, and social health outcome expectations have also been identified

as motivating factors of Filipino older adults to exercise based on qualitative interviews and analysis of demographic characteristics in previous studies.[9-10] Benefits in disease management and mood enhancement have been listed as factors associated with Filipino older adults' exercise participation.[9] Similarly, outcome expectations of belongingness and social acceptance are also cited as motivating factors.[10]

It is essential to measure and document exercise outcome expectations to design appropriate exercise regimens and ensure the older adults' participation and commitment to these physical activity programs.[3] Multidimensional Outcome Expectations for Exercise Scale (MOEES) is one of the tools used to assess the motivating factors towards exercise.[7,11] It is a self-reported 15-item questionnaire that encompasses three subscales: physical, social, and self-evaluative.[7] Physical subscale, comprised of six items, assesses the perceived effects of exercise on physical health. The social subscale, composed of four items, evaluates the effects of exercise on their social lives. Lastly, the self-evaluative subscale, with five items, reflects the perceived effects of exercise on their psychological state and self-worth.[7] For each item, participants indicate their degree of agreement with each statement using a 5-point scale (1-strongly disagree; 2-disagree; 3-neutral; 4-agree; 5-strongly agree). Lower scores indicate low outcome expectations for exercise while higher scores indicate otherwise.[11]

MOEES is a relatively new outcome measure developed by Wojcicki et al. in 2009[7] which evolved mainly from the tool Outcome Expectations for Exercise Scale (OEES) by Resnick et al. in 2000.[12] Good internal consistency of the MOEES subscales was established in studies involving community-dwelling older adults (physical α= 0.82, social α= 0.81, self-evaluative α= 0.81) and older adults with comorbidities (physical α= 0.75, social α= 0.82, self-evaluative α= 0.84).[7,13] In addition, the tool's construct validity in community-dwelling older adults was evident with the significant association between exercise and the three outcome expectations (physical: r= 0.32, p< 0.001; self-evaluative: r= 0.30, p< 0.001; social: r= 0.20, p= 0.01). However, in the study of older adults with comorbidities, only the physical and self-evaluative outcome expectations exhibited a significant association with exercise (physical: r= 0.30, p< 0.01; self-evaluative: r= 0.21, p< 0.05; social: r= 0.04, p= 0.69).[7,13] It has also been proven that MOEES is valid and reliable [Root Mean Square Error of Approximation [(95% CI) = 0.07 (0.06 –0.08)]; Comparative Fit Index = 0.92)] for patients with multiple sclerosis.[11]

A cross-cultural adaptation of the original OEES is currently being conducted in Germany.[14] On the other hand, OEES-2, a second revision that included negative expectations of exercise, was cross-culturally adapted into Chinese and Korean.[15] However, both OEES and OEES-2 are only single-dimension scales that assess physical outcome expectations.[7,14-15] Based on Bandura's social cognitive model of behavior, outcome expectations are important to encouraging action and developing behavior and should be assessed completely along with its three dimensions: physical, social, and self-evaluative.[7-8] Therefore, the researchers sought to translate and culturally adapt MOEES.

Currently, there is no Filipino version of the tool, and there is no outcome measure being used in the Philippines to assess outcome expectations for exercise. It is important to align the design of exercise programs with the older adults' expectations after their exercise participation.[7] The translation and cultural adaptation of the tool in the local vernacular is therefore warranted. Hence, the primary objective of this study is to translate and cross-culturally adapt the original MOEES to Filipino. The secondary objective is to establish preliminary psychometric properties of the adapted tool in terms of internal consistency and test-retest reliability. Physical therapists and other health professionals can use this tool as a guide in designing, implementing, and assessing exercise programs for older persons based on their expectations to ensure that set treatment goals and outcomes are achieved throughout the rehabilitation.

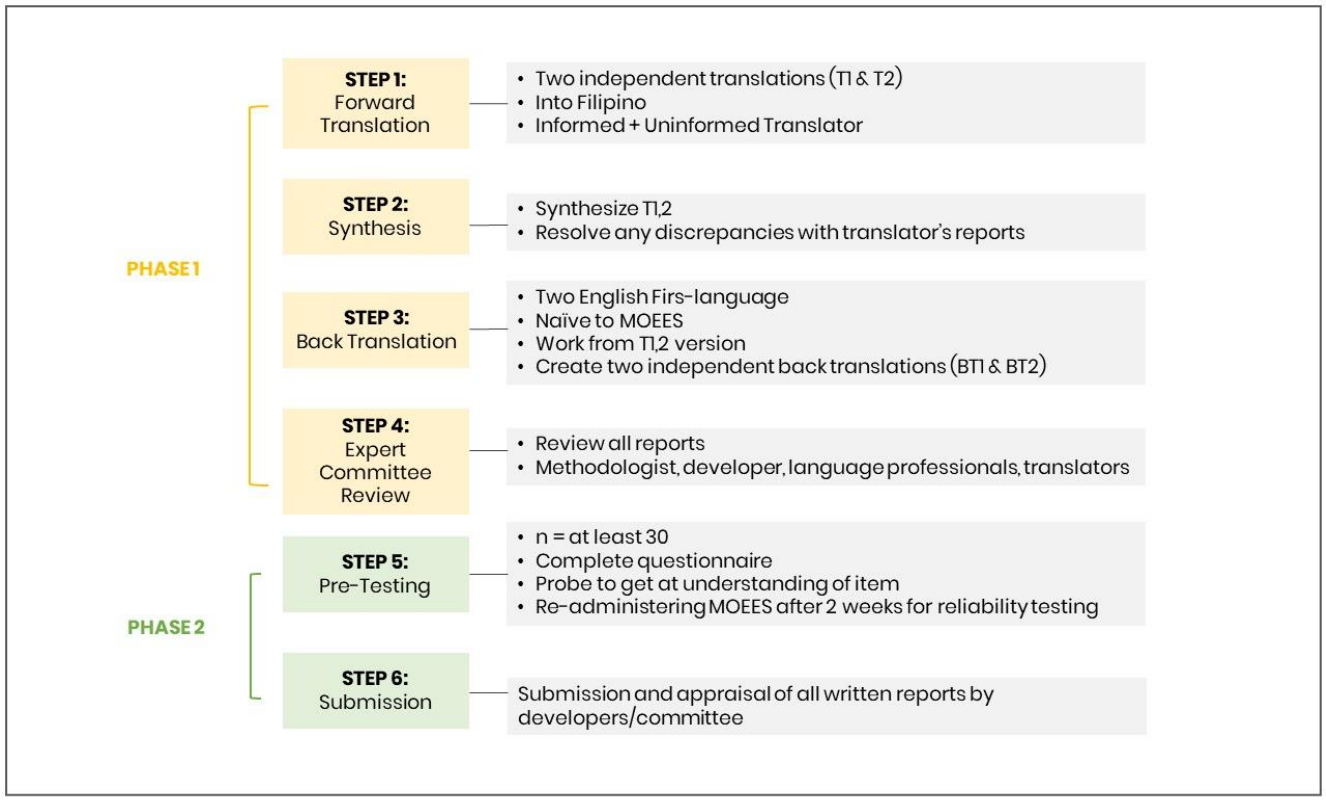
METHODS

Ethical Considerations. The researchers will abide by RA 10173 or the Data Privacy Act of 2012. All procedures in the study will be

conducted in compliance with the Declaration of Helsinki and Good Research Practice Principles. This study was already reviewed and approved by the Ethics Review Committee of the University of Santo Tomas - College of Rehabilitation Sciences (Protocol no.: SI-2020-026-R1). This study was registered to PHRR with registry number: PHRR210308-003280

Study Design. This study will be a two-phase psychometric study. Phase 1 is the MOEES translation and cross-cultural adaptation. Phase 2 establishes the preliminary psychometric properties of the adapted tool in terms of internal consistency and test-retest reliability. The guidelines for cross-cultural adaptation by Beaton et al.[16] will be followed. Steps one to four in the Beaton protocol will fall under Phase 1 while steps five and six will be under Phase 2 of the current study (Figure 1).

Figure 1. Cross-cultural adaptation process adapted by the authors from Beaton et al.[16]



Data Gathering Procedures.

Phase 1: Translation and Cross-cultural adaptation.

Step 1: Original MOEES forward translation from English into Filipino. Two bilingual translators, whose native language is Filipino, will produce two independent forward translations. The first forward translator (T1) will be a licensed Physical Therapist who is knowledgeable about the content of the questionnaire. The second (T2) is a Filipino language professor who has no medical background and is uninformed about MOEES.

Step 2: Synthesis of two forward translations. The two forward translators and at least two recording observers from the research team will discuss and synthesize the results of the translations to produce one common translation (T-1,2). This process, including means for resolving issues, will be properly documented in a written report.

Step 3: Back translation. This is when two blinded translators, whose native language is

English, will independently translate the T-1,2 version back into English (BT1 and BT2). This is a validity check process to ensure that the quality of a translation equates with the MOEES original content. It highlights the inconsistencies present in the translation.

Step 4: Expert committee review. This is composed of a methodologist with experience in cross-cultural adaptation studies, a licensed physical therapist, and translators (forward and backward). The research team will mediate between the members of the expert committee. In any disagreement without a concession, each side would be allowed to defend their stances on the subject. After which, a consensus must be reached which would mean that all the committee members agreed on a final decision. Moreover, an answer sheet regarding the semantic, idiomatic, experiential, and conceptual equivalence will be provided to help the panels decide and settle disagreements. Semantic equivalence is reached when a word has the same literal meaning in both the source and target languages, as well as when grammatical issues in the translation are addressed. Idiomatic equivalence is attained when equivalent expressions of idioms or colloquialisms are provided in the target language. Experiential equivalence is achieved when the words are used to capture the experience of daily life in the target culture. Lastly, conceptual equivalence is fulfilled when words in the target language describe an equivalent concept in the source language.[16]

The committee's goal is to consolidate all translations and establish the pre-final version that will be administered to the participants for testing. Each translation made from the beginning of the process has corresponding written reports and documentation. During this process, there will be close contact between the expert committee and the questionnaire's original developers. A pre-final version of the tool will then be produced.

Phase 2: Establishment of Preliminary Psychometric Properties of MOEES in Filipino.

Step 5: Pre-final version testing. This will be conducted to at least 30 participants to: 1) ensure that the pre-final Filipino MOEES version still retains its equivalence in an applied situation, and 2) establish its preliminary psychometric properties in terms of internal consistency and test-retest reliability.

The participants will be Filipino older adults aged 60 years or above who live in the Philippines. They must be able to read, speak, and write in the Filipino language.[7,17-18] They will undergo an eligibility screening process to be conducted by the trained researchers. Participants will be included if they have a Mini-Mental State Examination score of at least 24 to indicate good cognition.[19] They will also be included if they qualify to have an active level of physical activity based on the Telephone Assessment of Physical Activity. That is at least 30 minutes of moderate physical activity such as fast walking, aerobics, strength exercise, or recreational swimming at least five days per week; or at least 20 minutes of vigorous physical activity such as jogging, hiking, playing tennis, or badminton at least three days per week.[20] Participants with conditions or barriers that hinder them from responding appropriately such as neurological disorders and communication barriers including severe hearing impairment, blindness, or illiteracy, will be excluded.[18]

At least 30 Filipino older adults will be conveniently sampled and recruited through social media, other platforms, and researchers' networks. This sampling technique was selected due to the COVID-19 health protocols.[21] Prospective participants will be requested to sign a written document prior to study participation. They will be screened and interviewed in an environment with the least intrusion and distraction using a questionnaire via video calls on Facebook Messenger as the online platform. This is the platform selected because 98% of the country's internet users utilize messaging apps; with this having the most monthly active users.[22] By using this, it would facilitate accessibility and convenience to the participants. A family member or a caregiver who is familiar with the said application may assist the participant during the interview.

Demographic data such as age, home region and comorbidities will be obtained using a questionnaire for screening purposes. Following that, during a private video call, the researchers will inquire about the participant's level of

physical activity. Afterward, researchers will conduct the Mini-Mental State Examination in which questions will be read aloud to the participants, and they will be asked to respond verbally. Each eligible participant will be asked by an assigned researcher to answer one question after the other about the Filipino MOEES pre-final version. The participant will then be asked about their understanding of each item and the reasoning behind their corresponding response. For test-retest reliability testing, each participant will be contacted again after two weeks[23] to answer the same MOEES questionnaire.

Step 6: Reports and forms submission to MOEES developer. This will be done for keeping track of the translated version. After which, a soft copy of the results will be submitted to the College of Rehabilitation Sciences and its Ethical Review Committee. The results summary and study outcome, along with a brochure containing suggested indoor exercise routines, will also be sent to the participants or their guardians through their respective email addresses after conducting the study.

Data Analysis. Data from Phase 1 of the study will be presented in tables and through narrative summaries. Data from Phase 2 will be encoded using Microsoft Excel version no. 2016 and analyzed using IBM® SPSS 25. Demographic characteristics of the participants will be summarized using descriptive statistics. The pre-final version MOEES in Filipino will be evaluated for internal consistency and test-retest reliability. For internal consistency, Cronbach's alpha coefficient and item-total correlations will be used. Intraclass correlation/ ICC (3, K) will be utilized in analyzing the adapted tool's test-retest reliability. The level of significance for all computations will be set at 0.05.

EXPECTED RESULTS

This study expects to produce a cross-culturally adapted MOEES in Filipino that has at least good internal consistency (>0.70), item-total correlation (>0.30), and test-retest reliability (>0.65). A cross-culturally adapted tool with good psychometric properties that will provide healthcare professionals with accurate results about the outcome expectations of Filipino older adults in exercise. With this, assessments can be done thoroughly, and appropriate interventions can be set for these older adults.

Individual author's contributions

D.L.; Led the design and conceptualization of this review, supervised the entire process, drafted the protocol, and edited the manuscript. A.H.: Identified key terms for the literature review, coordinated with the expert committee members, facilitated communications with relevant individuals to the study, and edited the manuscript. E.A., F.C., R.D., M.L., C.H.T., C.P.T; contributed to identifying key terms for the literature review, searching, and coordinating with the members of the expert committee, and editing the manuscript. All authors read and approved the manuscript's final version.

Disclosure statement

No funding was received for this work.

Conflicts of interest

Author DL is an Associate Editor of PJAHS. All the other authors declare no conflicts of interest.

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