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Letter to the Editor

Chronic Ankle Instability Research and Cross-Cultural Adaptation Process Necessity for the Self-Reported Questionnaire

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Dear Editor-in-Chief

Chronic Ankle Instability (CAI) is characterized by various symptoms such as the sensation of "giving way," pain, weakness, loss of function, and reduced range of motion (ROM) of the ankle (1). The symptoms of CAI can be classified into mechanical ankle instability (MAI), functional ankle instability (FAI), and perceived instability (PI) (1). In order to assess this subjective measure, a patient-reported outcome (PRO) questionnaire, also known as a self-reported outcome questionnaire, is recommended and applying the PRO questionnaire with specific cut-off scores is essential for return-to-play decision making when dealing with a lateral ankle sprain and PI (2). The International Ankle Consortium (IAC) also strongly recommended using PRO questionnaires such as the Cumberland Ankle Instability Tool (CAIT) in order to diagnose CAI (3, 4).

PRO questionnaires have their original forms, usually developed in English, and when they are to be used in a different language and/or cultural setting, the translation must go through cross-cultural adaptation to validate the translated questionnaires as to whether they contain the intrinsic meaning and cultural characteristics of the original questionnaires (5, 6). Regarding the significance of PRO questionnaires in CAI research and clinical settings, many PRO questionnaires have been translated and cross-culturally adapted in various languages (7). Despite the significance of this process, many countries are still utilizing PRO questionnaires that have not been cross-culturally adapted due to the complicated and time-consuming procedure (5, 6).

The cross-cultural adaptation process consists of 6 steps including the translation by several experts who are fluent in both languages. Thus, it requires a fair amount of effort and cost. There has been no comparison of reliability and validity between cross-culturally adapted PRO questionnaires and non-cross-culturally adapted PRO questionnaires (translated without the adaptation process). If there is no significant difference between the cross-culturally adapted and non-cross-culturally adapted PRO, this may prove that there is no need for the cross-cultural adaptation in CAI research. On the other hand, if the cross-culturally adapted and non-cross-culturally adapted PRO questionnaires are significantly different, then this would indicate that cross-cultural adaptation needs to be a mandatory process for an accurate and reliable measure regarding patients with CAI.

Fifty participants with CAI were recruited based on the inclusion and exclusion criteria and an injury history questionnaire from the IAC (4). All participants completed the cross-culturally adapted and validated Cumberland Ankle Instability Tool in Korean (CAIT-k) and the non-cross-culturally adapted and validated Cumberland Ankle Instability Tool in Korean (CAIT-n) (7). The CAIT-n was developed by a native Korean

speaker who is bilingual in both Korean and English, and blinded to the CAIT-k. The CAIT-k and -n were administered in random order with a 1-month interval between each administration to minimize the learning effect.

All participants were required to read and sign a written informed consent approved by the Institutional Review Board at Incheon National University (#7007971-201910-005A).

Criterion-related validity of the CAIT-n was assessed using Spearman's rank correlation coefficient between the CAIT-k and the CAIT-n. The correlation coefficient (r_s) was interpreted as weak (0.00-0.30), moderate (0.31-0.59), or strong (0.60-1.00) (8). There was no statistically significant Spearman correlation between the CAIT-k and the CAIT-n ($r_s = 0.108$, $P > 0.05$). The CAIT-n had a weak correlation with the CAIT-k. The CAIT-k was validated to evaluate perceived ankle instability in native Korean speakers throughout the cross-cultural adaptation process ($r_s = 0.70$, $P < 0.01$) (7). The result from the current study suggested that the CAIT-n, which had not gone through the cross-cultural adaptation process, is not validated to evaluate perceived ankle instability (PI) in native Korean speakers even though it has been translated by experts with knowledge and experience. Our findings highlighted that the cross-cultural adaptation process could be a critical procedure for applying the PRO to individuals with CAI who are not native speakers in the language of the original version of the PRO. Therefore, the cross-cultural adaptation process should be considered as a mandatory step for conducting the research and utilizing in clinical setting when participants who are not native speakers in the language of the original PRO are recruited.

Future studies should further investigate the different outcome measures between the cross-culturally adapted and validated, and the non-cross-culturally adapted and validated PROs in not only individuals with CAI, but also the healthy population. Additionally, the test-retest reliability and internal consistency of the non-cross-culturally adapted PROs will need to be assessed in the future study.

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Conflict of interest

The authors declare that there is no conflict of interest.

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