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Detection of Biomechanical Stress for the Prevention of Disability Derived from Musculoskeletal Disorders

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Abstract : In order to have an epidemiological tool to detect biomechanical stress (ERGO-Mex), which impose physical labor or recreational activities, a questionnaire is constructed in Spanish, validated and culturally adapted to the Mayan indigenous population of Yucatan. Through the seven steps proposed by Guillemin and Beaton the procedure was: initial translation, synthesis of the translations, feed back of the translation. After that review by a committee of experts, pre-test of the preliminary version, and presentation of the results to the committee of experts and members of the community. Finally the evaluation of its internal validity (Cronbach's α coefficient) and external (intraclass correlation coefficient). The results for the validation in Spanish indicated that 45% of the participants have biomechanical stress. The ERGO-Mex correlation was 0.69 ($p < 0.0001$). Subjects with high biomechanical stress had a higher score than subjects with low biomechanical stress (17.4 ± 8.9 vs.9.8 ± 2.8, $p = 0.003$). The Cronbach's α coefficient was 0.92; and for validation in Cronbach's α maya it was 0.82 and CCI = 0.70 (95% CI: 0.58-0.79; p‹0.0001); ERGO-Mex is suitable for performing early detection of musculoskeletal diseases and helping to prevent disability.

Keywords : biomechanical stress, disability, musculoskeletal disorders, prevention
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