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Appraisal

Clinimetrics: The Wheelchair User's Shoulder Pain Index (WUSPI)

Summary

Shoulder pain is very common in people who are wheelchair dependent, including those with spinal cord injury, spina bifida and other neurological conditions. Clinicians often need to quantify patients' shoulder pain and gauge the implications of their shoulder pain on their independence and abilities to perform activities of daily living. The most widely used tool for this purpose is The Wheelchair User's Shoulder Pain Index (WUSPI).[1,2]

The WUSPI was designed in 1995 and based on the Shoulder Pain and Disability Index. It is a 15-item self-report questionnaire in which patients are asked to rate, on a 10-cm visual analogue scale, the amount of pain they have experienced in their shoulder/s over the past week when performing everyday activities. The activities include: transfers, mobilising in a wheelchair, dressing and washing, sleeping, driving and performing household and other daily activities. The visual analogue scale is anchored at one end with 'no pain' and at the other end with 'worst pain ever experienced'. The scores are tallied with the total score ranging from 0 to 150 points, where a higher score indicates more severe shoulder pain than a lower score. Patients are given the option of not responding to questions if they are not relevant to them. In this case, a Performance Corrected WUSPI (PC-WUSPI) score can be calculated in which only the scores of questions that are relevant and answered are summed. This score is then divided by the total number of questions that are answered, and then multiplied by 15 to maintain the original scale (ie, from 0 to 150 points).[3–7]

The WUSPI has good repeat measure reliability, with an intraclass correlation coefficient for the total score of 0.99, and for the individual items ranging from 0.84 to 0.99 (95% confidence interval (CI) not provided).[2] Its internal consistency is also good, with a Cronbach's alpha of 0.97.[1] Attempts have been made to validate the WUSPI by correlating WUSPI scores with various other measures of either pain,[8] function,[9] or measures such as range of motion.[9] None of the results are particularly convincing but this may be a reflection of the small and homogenous samples.

Commentary

The WUSPI is easy to administer and score, and takes a patient approximately 5 minutes to complete. It is commonly used in people with spinal cord injuries, and less commonly in other conditions. The WUSPI is ideal for quantifying pain, and for gauging the impact of shoulder pain on people's independence. However, the information provided by the WUSPI is fairly limited because it does not provide information about the type of pain patients experience or how often they experience the pain. In addition, there are no questions about pain for those who may be wheelchair dependent but also very disabled and dependent on others. Therefore, the WUSPI is not particularly useful for people with high levels of tetraplegia who often also experience shoulder pain.

The WUSPI is being increasingly used in observational studies[8,9] and clinical trials.[10,11] However, researchers need to give careful consideration to the analysis of longitudinal data and potential bias if participants respond to different sets of questions at each assessment point. The reliance on a visual analogue scale rather than a numerical rating scale adds complexity and time to the data collection process. It also makes it more difficult to collect data over the telephone or through electronic surveys. In addition, it ignores the obvious problem that some people with tetraplegia and limited hand function may require a verbally administered scale. Consequently, researchers are increasingly using the WUSPI with a numerical rating scale rather than a visual analogue scale.[8]

The WUSPI is a useful assessment tool for people with shoulder pain who are wheelchair dependent. However, it would benefit from further work around its psychometric properties and more consideration about some of the practical problems associated with its administration.

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