ACTIVITIES AND PARTICIPATION WITH POWERED MOBILITY DEVICES: WHICH TOOLS? PRELIMINARY VALIDATION OF THE WHEELCHAIR OUTCOME MEASURE ITALIAN VERSION

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Abstract
Objective: This study reports on a preliminary validation of the Italian version of the Wheelchair Outcome Measure (WhOM-I) to help health and AT professionals to assess the user’s perceived effectiveness of a PMD.

Method: The WHOM-I was administered to a sample of 17 adult PMD users using a pretest/post-test design in order to assess users’ satisfaction with activities of daily life before and after the provision of a PMD. Further, usability of the WhOM-I in clinical practice was assessed by 4 health professionals.

Results: Overall, satisfaction scores increase from pretest (M:31.3; DS:25.6) to post-test (M:78.9; DS:14.2). Effect size was 1.5 showing a large effect of the PMDs provided. The scale was deemed useful by all professionals involved. On the basis of these results, the WhOM-I was included in clinical practice in the Regional Centre for Assistive Technology both for PMD assessment phase and for the follow up phase.

Introduction
The identification of a powered mobility device (PMD; e.g., powered wheelchairs, electric scooter, balancing wheelchair) is a complex process which requires validated strategies. However, in the Italian context, this process is rarely supported by validated instruments: in many instances it depends exclusively on the expertise of the single operator/service or refers to the technicians [1]. One of the main barriers to the introduction of validated measures in clinical settings is the possibility to include them in well consolidated practices which are difficult to change. Increasingly, professionals in the field of rehabilitation are requested to employ validated tools in each phase of the service delivery process [2], from the identification and selection of the device to the evaluation of the outcomes of the intervention. We think appropriate to reconsider these issues and devote time and resources to the assessment process because the number of people with disabilities who use wheelchairs is constantly growing and wheelchair has become a gradually more accepted solution [1,3,4]. Furthermore, users that are often not satisfied with their mobility aids and its services [5, 6] also remind us that to provide an
adequate service is essential having a process centered on resources, activities and desires of the person with disability [7].

Objective
The current research was conducted at the Regional Centre for Assistive Technology (Centro Regionale Ausili; CRA) in Bologna, Italy. This study aims to preliminary validation of a centered person tool focused on satisfaction in activities carried out using wheelchair, in order to improve matching between person and PMD. For this purpose, the multidisciplinary team of CRA has identified the Wheelchair Outcome Measure – Italian version (WhOM-I) [7]. Test and relative manual was translated and adapted by CRA in the recent past but it is not used in clinical practice yet. In particular, the objective of the research was to investigate the possibility of introducing the WhOM-I in the “PMD assessment and training Programme” of the Regional Centre [8].

The research aims to:
1- conduct a first pilot test to investigate the assessment intervention efficacy in terms of satisfaction with the activities
2- test the usability of WhOM-I.

Method
With regards to first objective, WhOM-I was pilot tested with a group of 17 PMD users with different health conditions.

The second objective was pursued by asking to four CRA expert professionals (2 occupational therapists, 1 social educator and 1 psychologist) an opinion about use satisfaction (range 0–10) of WhOM-I considering 3 specific properties: ease of use, time of administration and clinical utility.

Descriptive statistics were used to analyze WhOM-I results. Mean (M), standard deviation (SD) were used to describe the data collected. To quantify the amount of change measured, the responsiveness index by Cohen [9] was applied, for which WhOM-I effect sizes were calculated as the ratio of the mean change to the SD of the change scores. Cohen [9] has provided benchmarks that serve to guide the interpretation of effect sizes: 0.20 is considered small, 0.50 moderate, and 0.80 or more is defined as large.

Results
At post-test 6 out of 17 PMD users were surveyed. A total of 25 activities were indicated by PMD users. It was found an increase in overall satisfaction score at post-test (M:78.9; SD:14.2) compared to pre-test (M:31.3; SD:25.6). On average, at group level, the change score was 47.6 (SD = 31.4) with an effect size of 1.5 which, according to Cohen’s criterion, should be considered large. Satisfaction with PMD comfort changed from 6.5 (SD: 3.5) to 9.1 (SD: 0.8).

Concerning perceived usability in clinical practice, the scale was considered easy to use (M: 8; SD:0), quick to administer (M: 7,5; SD:1,3), and useful (M: 9; SD:0).

Conclusion
On the basis of these results, the WhOM-I was included in clinical practice in the Regional Centre for Assistive Technology both for PMD assessment phase and for the follow up phase. It was also included in the "CRA - PMD assessment and training Programme" (figure 1) [8].

This study represents an important part in the development and definition of a PMD assessment and training Programme to be implemented in routine clinical activities in CRA. The Programme will be further tested in the future for validity and reliability in order to assess its efficacy in helping professionals selecting and evaluating the effectiveness of PMDs.

**Figure 1. CRA - PMD assessment and training Programme.**

**References**


