

A One-Day Practical Workshop Can Improve the Knowledge and Skills of Therapists and Research Personnel About the Wheelchair Skills Program

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ABSTRACT

To test the hypothesis that a one-day practical workshop can improve the knowledge and skills of therapists and research personnel about the Wheelchair Skills Program (WSP), we assessed the knowledge and skills of participants before and after one-day workshops at 4 sites. The mean (\pm SD) pre- and post-workshop total percentage knowledge scores ($n = 20$) were 69.7% (± 10.1) and 84.3% (± 8.5) respectively; the median difference was 13.3% ($p = 0.000$). The mean (\pm SD) pre- and post-workshop total percentage capacity scores on the questionnaire version of the Wheelchair Skills Test (WST-Q 4.2) ($n = 17$) were 54.6% (± 29.0) and 80.0% (± 24.0) respectively; the median difference was 15.6% ($p = 0.001$). The participants' perceptions ($n = 24$) were very positive. All participants said that they would recommend the workshop to others. A one-day practical workshop can improve the knowledge and skills of therapists and research personnel about the WSP.

BACKGROUND

The World Health Organization (WHO) guidelines on the provision of wheelchairs include an 8-step service delivery process (WHO, 2008), two steps of which are assessment and user training. However, Hosseini et al (2012) showed that even people with spinal cord injury who received care at Spinal Cord Injury Model Systems sites do not have all of the skills that might be expected.

The Wheelchair Skills Program (WSP) represents a potential solution to this problem. The WSP includes assessment and training protocols, the Wheelchair Skills Test (WST) and Wheelchair Skills Training Program (WSTP) respectively. There is good and growing evidence regarding the measurement properties of the WST (e.g. Rushton et al, 2012) and the safety and effectiveness of the WSTP (e.g. Routhier et al, 2012). Clinicians and therapists

wishing to implement the WSP can access the free materials and learn about the protocols through the website (Kirby et al, 2013). However, the motor skills of the WSP personnel involved require practical training. Ideally such training should take place over a series of sessions, to allow the skills to be acquired, retained and generalized.

However, logistical and practical difficulties often necessitate that such training take place in workshops of 1-3 days duration. Some preliminary data suggest that one-day WSP workshops can have positive results with respect to participant satisfaction (Kirby et al, 2009; 2011), knowledge about the WSP (Kirby et al, 2010) and improved wheelchair skills (Routhier et al, 2008).

We and other colleagues are undertaking a multi-center Spinal Cord Injury Model Systems project – Collaboration on Mobility Training (COMIT), funded by the US National Institute for Disability and Rehabilitation Research (NIDRR) – that includes the evaluation of group wheelchair skills training for manual wheelchair users with spinal cord injury. To prepare the research personnel in each of the four sites to use the WST and WSTP correctly, two of the WSP developers (Kirby and Smith) travelled to each site and held one-day training workshops.

PURPOSE

The objective of this study was to test the hypothesis that a one-day practical workshop can improve the knowledge and skills of therapists and research personnel about the WSP.

METHODS

Study Design

This was an uncontrolled study, comparing the knowledge and skills of the participants before and after the workshop.

Ethical Issues

The overall COMIT study has been approved by the Institutional Review Board of each of the sites.

Sites

The four sites were the University of Miami, the Kessler Institute for Rehabilitation, the Rehabilitation Institute of Chicago and the University of Pittsburgh (the coordinating center).

Participants

Participants were selected by each site (5-9 at each), generally because of their involvement in the COMIT Project. There were a few others who attended because of their interest in learning more about the WSP. To describe the sample, we recorded the participants' age, sex, number of years of wheelchair experience and educational background.

The Workshops

The four 8-hour workshops were virtually identical except for the participants and the settings in which the training took place. At two sites, the workshops were conducted entirely on one calendar day; for the other two, the workshops began at noon on one day and finished at noon on the next day. The majority of the workshop time was spent with the participants in wheelchairs learning about the assessment and training principles related to a set of 32 manual wheelchair skills (WSP 4.2). In addition to practical skills training, there was a one-hour overview lecture and time was also spent reviewing videotapes of wheelchair users performing wheelchair skills. Following the workshops, participants were encouraged to use the website to read further about the WSP. Participants were also encouraged to continue to practice the skills that they had learned.

Outcome Measures

To assess the participants' knowledge about the WSP, we administered two written examinations, one about two weeks before and one about two weeks after the workshops. The 113 items on each exam covered the same content in slightly different ways, using true/false and multiple-choice responses. Some of the questions used videotapes of wheelchair users performing the skills as parts of the question stems.

To assess the participants' wheelchair skills, we used the total percentage capacity score of the manual wheelchair version of WST-Q 4.2, the self-administered questionnaire version of the WST. The WST-Q correlates highly with the WST (Rushton et al, 2012). The participants self-administered the WST-Q twice, once at the beginning of the workshop (as part of the learning about the instrument) and once about two weeks after the workshop.

To assess the participants' perceptions about the workshop, we administered a standard one-page questionnaire to them at the end of the workshop. We used 0-5 (low-high) ordinal scales to assess whether the participants found the workshop to be "useful", "relevant", "easily tolerated", "understandable" and "enjoyable". Regarding the duration of sessions, we asked participants if they thought the workshop was "too long", "too short" or "just right". We also asked participants if they would recommend the workshop to others (yes/no).

Data Analysis

We performed paired t tests, comparing the pre- and post-workshop total percentage knowledge scores and total percentage WST-Q capacity scores. Statistical significance was defined as $p < 0.05$.

RESULTS

There were 28 participants, 21 women and 7 men, with a mean (\pm SD) age of 40.2 (\pm 10.4) years. The median wheelchair experience was 11.5 years. Of the participants, 9 were physical therapists or physical therapy aids, 7 were occupational therapists, 7 were research personnel, 3 were physicians and 2 had other backgrounds. Two participants were wheelchair users, in addition to their other credentials.

The mean (\pm SD) pre- and post-workshop total percentage knowledge scores ($n = 20$) were 69.7% (\pm 10.1) and 84.3% (\pm 8.5) respectively; the median difference was 13.3% ($p = 0.000$).

The mean (\pm SD) pre- and post-workshop total percentage WST-Q scores ($n = 17$) were 54.6% (\pm 29.0) and 80.0% (\pm 24.0) respectively; the median difference was 15.6% ($p = 0.001$).

Regarding the participants' perceptions ($n = 24$) about the workshop, the mean 0-5 ordinal scale scores were 4.9 for being "useful", 5.0 for being "relevant", 5.0 for being "easily tolerated", 5.0 for being "understandable" and 5.0 for being "enjoyable". Regarding the duration of sessions, 19 (79%) participants thought the workshop was "just right" and 5 (21%) thought it was "too short". All participants (100%) said that they would recommend the workshop to others.

DISCUSSION

We accomplished our study objective, corroborating the hypothesis that a one-day practical workshop can improve the knowledge and skills of therapists and research personnel about the WSP. The magnitudes of the differences were clinically and statistically significant. Participants had very positive perceptions of the workshop experience.

Study limitations include the small sample size, the absence of a control group and the number of drop-outs. Future research is needed to explore the impact of such training on specific wheelchair skills. The nature of the workshop needs to be formalized so that trainers other than the developers can achieve the same results in other settings.

Despite the study limitations and the need for further study, these results replicate and extend earlier work in training clinicians and researchers about the WSP. These findings should be helpful in achieving broader implementation of the WSP.

CONCLUSIONS

A one-day practical workshop can improve the knowledge and skills of therapists and research personnel about the WSP.

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