<u>Title:</u> FES-Rowing: Preventing the Secondary Conditions of Paralysis Through Vigorous exercise-A Survey Study of User Needs

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Statistical Analysis Plan

Data analysis

Intrapersonal (health and beliefs/attitudes) and interpersonal (friends and family) domain scores from the Barriers to Physical Activity Questionnaire for People With Mobility Impairments (BPAQ-MI) were calculated using weighted sums of the corresponding survey items. A factor correlation matrix[1] was used to determine each item weight. Each participant's domain scores were then calculated by summing the products of each item score (0, *not a barrier at* all to 5, *largest barrier*) with each item's weight. For the Barriers to Physical Activity and Disability Survey (BPAD-S), the number of endorsements ("yes") for 19 items on distinct barriers to physical activity was counted. Participant characteristics that informed user and design needs and potential market for the at-home FES-row system were defined as the clinical diagnosis causing paralysis and type of wheelchair primarily used (i.e., manual vs. power chair). For the FES-row training group only, each participant's total score on the Quebec User Evaluation of Satisfaction With Assistive Technology (QUEST 2.0) was calculated by summing the item scores (0, *least satisfied* to 5, *most satisfied*) and dividing the sum by the number of valid responses (invalid responses were outside 0-5 range and included: "not applicable"). Data are expressed as group (FES-row and non FES-row) mean ± standard error or number (percentage of group total).

Statistics

Between-group comparisons of demographics and questionnaire data were evaluated with two-sample *t*-tests when appropriate. Statistical significance will be considered at $p < 0.05$.

References

1. Vasudevan, V., Rimmer, J.H., & Kviz, F. (2015). Development of the Barriers to Physical Activity Questionnaire for People with Mobility Impairments. *Disability and Health Journal, 8*, 547-556.