COMMUNICATION - MANAGEMENT - GOVERNANCE Actual use of gerontechnologies

J.L. FOZARD, W.D. KEARNS. How well does an elderly person's actual use of a gerontechnology relate to its intended use? Gerontechnology 2016;15(suppl):36s: doi:10.4017/gt.2016 .15.s.620.00 Background Analyses of changing person-environment interactions guide the creation of technologies that address Gerontechnology's four goals: preventing or delaying age associated declines in functioning; compensation for declines; caring for persons who experienced the decline; and for all three, maximizing of guality of life¹. A successful gerontechnology related to these goals requires an assessment of four factors: (i) interest in and motivation to use the product; (ii) ability to successfully use the technology; (iii) determination if the user actually employs the product as intended; and, where appropriate, (iv) whether the person continues to use the technology. Market analyses, focus groups and/or some version of available technology acceptance analyses are used to assess how the perceived need for and motivation to use predict the potential adoption of a gerontechnology. Ergonomic analyses determine the intended user's ability to use a gerontechnology². A comparison of the behavior of the user with and without the technology enabled determines whether a particular technology works as intended for a particular person. A device to remotely determine whether the technology is actively used helps determine whether and when the technology is abandoned by the user. Up to the present, most research has focused on the first two of the four factors; the present paper focuses on the last two. Method Single Case Experimental Designs (SCED) provide an efficient way to assess if a gerontechnology works as intended³. Periods in which the gerontechnology is active alternate with baseline periods in which the gerontehnology being evaluated is disabled; measurable changes in user behavior with vs. without the product feature enabled constitutes the evaluation. Results Two examples provide illustrations how the basic SCED elements are implemented. Reversal SCED involves a change from a baseline to an intervention phase followed by baseline etc. If the intervention is a prompt by a wearable device to increase walking, walking than baseline is less than when the prompt is enabled. Multiple baselines across behaviors involves evaluating changes in multiple behaviors in the same time period. Using the prompting example, the device could prompt more walking activity, taking prescribed medication on time and compliance and attendance at scheduled meetings with clinicians. The prompts for the three behaviors would occur successively, i.e., the prompt for taking medications would be introduced after the prompt for increased walking, etc. By tracking the location and/or the activation of a technology, it is possible to describe the abandonment of a once apparently useful gerontechnology. **Conclusions** SCEDs provide the link between predictions about the usefulness and actual use of a gerontechnology. They offer an alternative to the more expensive and complex Randomized Controlled Trials (RCTs) generally considered the 'gold standard' for treatment evaluations.

References

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