

M.A. RUPP, J.R. MICHAELIS, D.S. MCCONNELL, J.A. SMITHER. **Examining the usability of several wearable fitness devices.** *Gerontechnology* 2016;15(suppl):160s; doi:10.4017/gt.2016.15.s.755.00. **Purpose** The purpose of our study was to compare participants' user experience, motivation to use, and trust of 6 wearable fitness devices: Fitbit Zip, Flex, Charge, Surge, Mi-crosoft Band, and Basis Peak, to provide insight into why fitness devices are commonly abandoned¹. **Method** We randomly assigned 36 healthy older adult participants (age 67.36±9.09, 22 female, 14 male) with normal vision and normal cognitive functioning to interact with one of the six devices. Each user completed several common tasks on their device (e.g. Setup, log a walk, change step goals, view activity). Following this, participants completed the System Usability Scale (SUS)², a self-determined Wearable Device Motivation Scale³, a Wearable Device Trust Scale³, reported their desire to continue using the device on 7-point Likert scale (1=strongly disagree; 7=strongly agree), and provided open-ended feedback about their experience. **Results & Discussion** We conducted correlations and between-subjects ANOVAs on each scale. Our analyses revealed significant effects for usability ($p=0.042$), motivation ($p=0.045$), trust ($p=0.034$), and the desire to continue to use the device ($p=0.001$). Overall, the Fitbit Flex and Charge-HR were rated the least usable and motivating due to issues experienced during use. Many users were unable to secure the clasp on the Flex and many did not like the small screen and font on the Charge-HR. The Fitbit Zip and Surge were rated the most usable and most likely to be used by participants due to their large screen and font. We also found several significant correlations between usability, trust, motivation and participants' desire to continue using their fitness device. Usability did not directly increase individuals' motivation to be more active using the device. However, users placed greater trust in the devices that they rated more usable. It was instead trust that was associated with greater projected motivation. Finally, together usability, trust, and motivation were significantly associated with an increased desire to use a fitness device. Our results indicated that device designers need to focus on fitness device usability, trust, and motivation to decrease the likelihood of users abandoning their fitness devices. Finally, we found a recurring theme, independent of the device used, users requested more instructions. Most devices provided a brief tutorial during setup or provided a guide emailed later on. Users requested a step-by-step guide or video that they could pull up on demand. Additionally, many participants' were unfamiliar with the icons used with the device and application. It is therefore recommended that fitness devices provide optional descriptions of terms and icons that may be unfamiliar to novice users.

References

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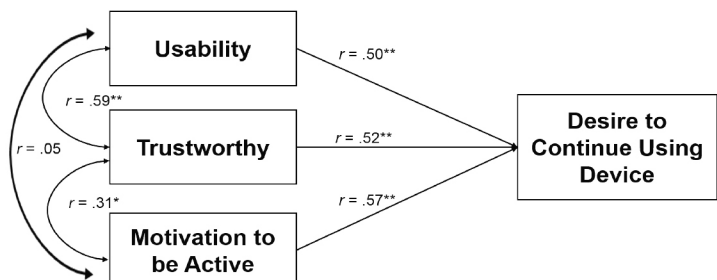


Figure 1. Correlations between study dependent variables (Usability, Trust, Motivation) and participants' desire to continue to use a wearable fitness device; $n=36$