The diffusion of gerontechnology for fall prevention, fall detection, and fall monitoring model testing
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Background. Over recent years, a number of gerontechnologies for fall prevention, fall detection, and fall monitoring have emerged to promote aging-in-place at home (Van Hoof et al., 2011; Godfrey 2017). These types of gerontechnologies have been generated or adapted to be pro-active in preventing and detecting falls, as well as on monitoring older adults activities at home environments to rapidly respond in case of a fall (Hawley-Hague et al., 2014). However, the literature does not make clear what influence older adults to adopt or reject the use of such devices. **Purpose** The purpose of this study was to examine the diffusion of gerontechnologies for fall prevention, detection, and monitoring among older adults for aging-in-place based on the model of five stages in the innovation-decision process, proposed by Rogers (Rogers 2003). **Methods** The predictors of the first three stages of the original model[4] – knowledge, persuasion, and decision – were examined and variables related to older adults' characteristics, housing interior design, relationship with technology, aging-in-place, and fall concerns were included in the model to be tested (Figure 1). A self-administered survey was conducted with 331 older adults in southwestern U.S.A. The inclusion criteria encompassed age (being 55 years or older), living in the community (not living in a long-term care facility), and being able to read, understand, and fill out a paper survey. The questionnaire consisted of three sections: talking about yourself, talking about your home, and talking about technology, respectively. In the last section, participants were presented to different types of fall prevention, fall detection, and fall monitoring gerontechnologies and were asked to answer questions about each type individually. Descriptive statistics was used to analyse the characteristics of the sample. Path analysis through multiple regression was used to test direct, indirect, and total effects of the variables in the proposed model with 15 hypotheses organized in eight groups. **Results & Discussion** The main path of the model (knowledge, persuasion, and decision stages) appeared to have the most significant relationships, while the variables that influence the main path would vary from type to type of fall-related gerontechnology. Among the variables around the main path, technology readiness was a significant predictor for at least one stage of the innovation-decision process for fall prevention, detection, and monitoring gerontechnologies. In addition, sources of information were correlated to the different stages of the process; however, it had the highest significance to the persuasion stage. Participants in this study highly rely on their children when accepting to purchase new technologies. Overall, older adults living in the community in southwestern USA are unaware about most of the new fall-related gerontechnologies. Those who presented higher levels of perceived knowledge and technology readiness, also presented more positive attitudes towards and higher purchase intention of fall-related gerontechnologies.

References

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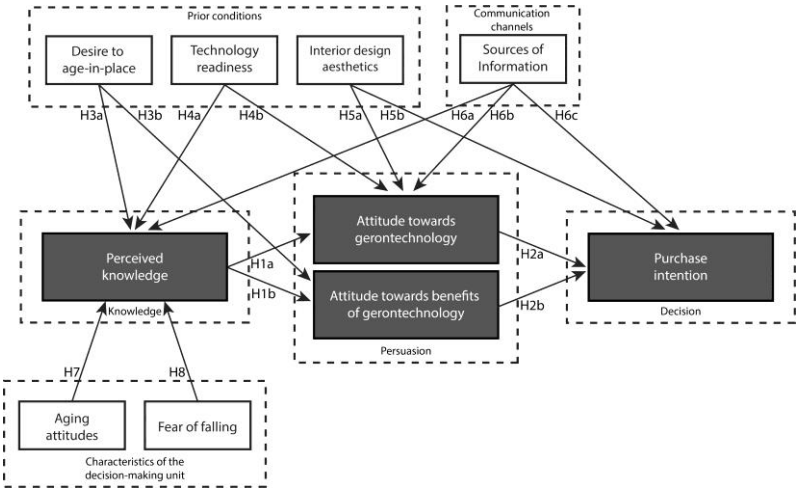

Figure 1. Operational Model for fall-related gerontechnology decision-process.