Efficacy of the Falling Less in Kansas Toolkit

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Abstract An effort to provide fall prevention education to rural older adults has led to the development of a fall prevention toolkit, *Falling Less in Kansas*. Usability testing was done to determine the ease of use of the toolkit within the target population. Older adults were recruited from rural Kansas communities to perform the toolkit tasks. Task completion was evaluated for time, accuracy, and completion. Although most tasks were completed without difficulty, a few required the assistance of the investigators. The *Falling Less in Kansas* toolkit is an effective and user-friendly method to educate rural older adults on fall prevention.

1. Introduction

Injuries due to falls are a significant health concern, especially in the older adult population. Due to the geographic dispersion and overall scarcity of healthcare available to older adults in rural and frontier communities, older adults in these locations are particularly disadvantaged concerning fall prevention education. [1] Previous efforts to increase fall prevention education in rural areas have resulted in the development of the *Falling Less in Kansas* toolkit, a combination of current fall prevention strategies and education for older adults (age 65 years and up) .[2]

2. Methods, Results, and Discussion

Methods

This study utilized a descriptive methodology in order to determine if older adults were able to make effective use of the *Falling Less in Kansas* toolkit to reduce fall risk. The participants recruited consisted of eight older adults, age 65 years and older. Participants were invited from two separate rural Kansas health/medical clinics. Prior to beginning each session, participants signed informed consent and familiarized themselves with the toolkit. At the beginning of each session, the participant was given a set of six laminated instruction cards. Each card was its own unique "Task". Each Task was divided into a series of sequential written objectives designed to evaluate the usability and quality of the *medication*, *vision*, *home safety*, and *physical activity* sections of the toolkit. Data were collected on the participant's demographics, time on task, task completion, accuracy of completion, and subjective feedback. Time on task was recorded as well as whether the participant was able to complete the required task independently. Participant feedback was recorded immediately following each task. Feedback was interpreted as positive, indifferent, or negative. We also evaluated how accurately study participants were able to complete each task.

IRB Approval

This study was approved by the Wichita State University Institutional Review Board. Written informed consent was obtained prior to participation in this study.

Results

Although eight older adults were recruited, two participants did not attend, and participant 2 withdrew without completing the usability test. Those who completed the task without aid from the researcher were categorized as "complete". Those who required assistance to complete the task were categorized as "incomplete" (Table 1).

Table 1. Participant Task Completion

	Task			
Participant #	Medication	Vision	Home Safety	Physical Activity
1	C †	C	C	C
2	C	N/A*	N/A	N/A
3	C	C	C	C
4	C	C	C	C
5	C	C	C	C
6	C	C	C	C

*Participant opted out of the test.
† C=completed task

The majority of the feedback was interpreted as positive (Table 2).

Table 2. Participant Feedback Per Task

	Task					
Participant #	General Appearance	Medication	Vision	Home Safety	Physical Activity	Overall Reaction
1	P †	P	I	P	P	P
2	P	I ‡	N/A*	N/A	N/A	N/A
3	N §	P	P	P	P	P
4	P	P	P	P	P	P
5	P	P	I	P	I	P
6	N	P	N	P	P	P

*Participant opted out of the test.

† P = Positive participant feedback

‡ I = Participant feed back neither positive nor negative. Indifferent.

§ N = Negative feedback

Participant task accuracy was displayed as completely accurate, partially accurate, or inaccurate. The information was reported categorically (Table 3).

Table 3. Participant Task Accuracy

	Task			
Participant #	Medication	Vision	Home Safety	Physical Activity
1	P‡	A	A	A
2	P	N/A*	N/A	N/A
3	P	A	P	P
4	P	A	A	A
5	A	A	A	A
6	P	A	A	A

*Participant opted out of the test.

†A=Accurate task completion

‡P=Partially accurate

Discussion

A large fraction of older adults do not utilize resources for organizing and keeping track of their home prescription medications.[3] We have demonstrated that the medication list is understandable, easy to use, and can serve as an efficient method for older adult's to organize their medications. Visual acuity has been shown to be essential to maintaining proper gait and balance. [4] It is important to detect visual impairment early to reduce fall risk. [4] During our study, participants expressed difficulty interpreting the results of the Amsler grid screening. This suggests that this section may need to be modified to be easier to understand for the target population. Although research has not shown home modifications to be independently effective, it is still recommended by the CDC. [5] Our participants found that the information provided on home safety was beneficial to them, and they would recommend it to other older adults as well. According to Chang et al, exercise programs are essential as a part of a multifactorial fall prevention strategy .[6] The *Falling Less in Kansas* toolkit provides exercises at basic and advanced levels in order to appeal to older adults with a wide range of physical strength and balance. We observed that older adults were able to appropriately select exercises that fell within their own ability level and successfully follow the exercise instructions provided by the toolkit. This demonstrates that the exercise section of the toolkit adequately addresses a previously proven fall prevention strategy.

Study Limitations: This study only involved two rural locations, and only five participants evaluated the toolkit to completion. As this is such a small sample of our target population, it limits the generalizability of the conclusions from the study. Lastly, the conclusions of this usability test are the result of a simulation, which does not necessarily translate to how the toolkit would be used in a non-test environment.

3. Conclusions

The *Falling Less in Kansas* toolkit can be utilized as a stand-alone reference for fall prevention education in the older adult population. Results will be reported to the Regional Institute of Aging. This effort confirms the ease of use of the toolkit. The older adults also expressed an overall satisfaction with the *Falling Less in Kansas* toolkit.

[1] Jones CA, Parker TS, Ahearn M, Mishra AK, and Variyam JN. Health Status and Health Care Access of Farm and Rural Populations. Economic Research Service. http://www.ers.usda.gov/Publications/EIB57/EIB57.pdf. Published August 2009. Accessed February 9, 2012.

[2] Radebaugh TS, Bahner CA, Ballard-Reisch D, et al. Falling Less in Kansas: Development of a Fall Risk Reduction Toolkit. *Journal of Aging Research.* 2011; ID532079.

[3] Metlay JP, Cohen A, Polsky D, et al. Medication Safety in Older Adults: Home-Based Practice Patterns. *Journal of the American Geriatric Society.* 2005;53:976-982.

[4] Rubenstein LZ. Falls in older people: epidemiology, risk factors and strategies for prevention. *Age and Ageing.* 2006; 35-S2:ii37-ii41 doi:10.1093/ageing/afl084.

[5] Lord SR, Menz HB, Sherrington C. Home environment risk factors for falls in older people and the efficacy of home modifications. *Age and Ageing.* 2006; 35-S2:ii55-ii59 doi:10.1093/ageing/afl088.

[6] Chang JT, Morton SC, Rubenstein LZ, et al. Interventions for the prevention of falls in older adults: systematic review and meta-analysis of randomised clinical trials. *British Medial Journal.* 2004;328:1-7.