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The investigators retained full independence in the conduct of this research.

1. INTRODUCTION

- Health care barriers encountered by older adults and their providers may be especially pronounced in rural and remote communities.
- Health care in rural areas may be well-suited for the integration of innovative strategies, such as text messaging.
- The theory of planned behavior may provide a useful framework for understanding whether older adults will decide to use technology as part of their health care.
- According to the theory of planned behavior, attitude toward the behavior, subjective norms, and perceived behavioral control contribute to behavioral intentions.

2. OBJECTIVES

- To investigate factors that contribute to rural older adults' intentions to monitor and report mood states to their provider via text messaging.
- To explore the interaction between age and theory of planned behavior constructs.

3. METHODS

Recruitment

- Participants were recruited from an index of prospective participants residing within a two-and-a-half-hour radius of the University of Wyoming.

Materials & Instruments

- Participants received a description of the technology and a first-person vignette describing an older adult experiencing symptoms of Major Depressive Disorder (see Table 1).
- A technology access and use survey was adapted (Selwyn, Gorard, Furlong, & Madden, 2003).
- A theory of planned behavior survey was adapted (Morris & Venkatesh, 2000).

Analysis

- Analyses were conducted using SPSS version 24.
- A three-block hierarchical linear regression examined the influence of (1) age, (2) theory of planned behavior constructs, and (3) the interaction of age and attitude on intentions to use technology.
- Alpha was set to 0.05, and analyses were two-tailed.

Technology Description & Vignette

Table 1

Technology Description	Vignette
Researchers are developing a new technological application that can be implemented by doctors' offices to monitor changes in the moods of their patients. This application works with your cell phone and is similar to text messaging. Using this application, your doctor can send simple questions about your mood to your cell phone. You can use text messaging to send a short answer back. Your responses to these questions will allow your doctor to detect and respond to changes in your mood, such as symptoms of depression. Your responses will go directly to your electronic health record. The connection between your cell phone and your electronic health record will be private and secure.	For the past three weeks, you have been feeling unusually sad, and you have been unable to enjoy your usual activities. Although you are tired most of the day, you find it difficult to fall asleep and stay asleep most nights. You have had nearly no appetite, and you have lost weight. You find it almost impossible to concentrate and make decisions. You feel "drained" after doing almost any day-to-day task. In fact, you sometimes find yourself unable to start or finish regular tasks and activities. You sometimes think that you would be "better off dead." Your friends and neighbors have noticed these changes in you, and they are concerned. Please imagine yourself in a scenario similar to the one described here when completing the questionnaire.

Factors Contributing to Intention to Use Text Messaging to Communicate with Provider

Table 2

Model	β	R ²	ΔR^2	p
Block 1		0.07	0.004	0.500
Age (centered)	-0.07			0.500
Block 2		0.85	0.721	<0.001
Age (centered)	0.03			0.595
Attitude (centered)	0.63			<0.001
Subjective Norm	0.30			<0.001
Perceived Behavioral Control (reflected, log)	0.14			0.815
Block 3		0.85	<0.001	<0.001
Age (centered)	0.28			0.605
Attitude (centered)	0.63			<0.001
Subjective Norm	0.30			<0.001
Perceived Behavioral Control (reflected, log)	0.01			0.831
Age x Attitude	-0.01			0.868

4. RESULTS

Participant Characteristics

- Wyoming residents ($n = 108$) aged 65-88 ($M = 72.4$, $SD = 6.0$).
- Sexes represented nearly evenly (51.9% male).
- Majority white ($n = 107$, 99.1%).
- Modal Rural-Urban Continuum Code = 7 (population 2,500-19,999; not adjacent to a metropolitan area).

Intentions to Use Technology

- The model in Block 1 (age) was not significant and accounted for a small proportion of variance.
- The model in Block 2 (age, attitude, subjective norm, perceived behavioral control) was significant and significantly increased the variance explained.
- The model in Block 3 (age, attitude, subjective norm, perceived behavioral control, age x attitude) was significant, but the addition of the interaction in the model did not significantly increase the variance explained (see Table 2).
- Exploratory hierarchical regressions yielded similar results:
 - Age x subjective norm: $\Delta R^2 = 0.001$; $p = 0.46$
 - Age x perceived behavioral control: $\Delta R^2 = 0.001$; $p = 0.66$

5. CONCLUSIONS

- Regardless of age, older adults in rural areas may be willing to use technology to in health care services, such as in the monitoring of mood states.
- Consistent with the theory of planned behavior, favorable attitudes toward technology use and support from others may contribute to decisions to use technology in health care.
- Technology, such as text messaging, may provide acceptable means of addressing barriers to rural health care for older adults. Implementation efforts should emphasize the benefits of technology use and should incorporate opinions of others close to the user.