Avatar to Prevent Falls in Home Dwelling Elders

## Kristine Masella, RN, BSN
Salem State University

Background

According to the US Census, by 2035, there will be more elders (those over 65) than there will be children (those under 18). Medicare does not cover long term care, and fewer people are able to afford nursing homes. Also, elders want to be at home for as long as possible. This is why instruments such as the avatar are so important. The purpose of this project is to conduct a literature review of evidence-based research in the field of telehealth. More specifically, the use of a virtual pet in reducing falls in the elderly population. The literature review is intended to establish current best practice recommendations, and to guide future treatment. Both literature supporting the use of a virtual pet, as well as research arguing the benefit of in-home monitoring are discussed, as well as the nature of falls in the elderly population.

Avatar By Care. Coach

The care.coach avatar program is a tablet with a cat or dog displayed on the screen that interacts with the patient. Behind the screen is a remote staff of two people per avatar as to ensure continuity of care. The staff are available 24/7 and communicate with the patients like a FaceTime call. They "wake up" or check in via the camera at designated intervals set by the care team. Otherwise, the avatar only see's the patient if the patient engages it. When a patient enrolls, they name their cat or dog, and information is loaded into a template that will help the person behind the screen provide support for our patients.
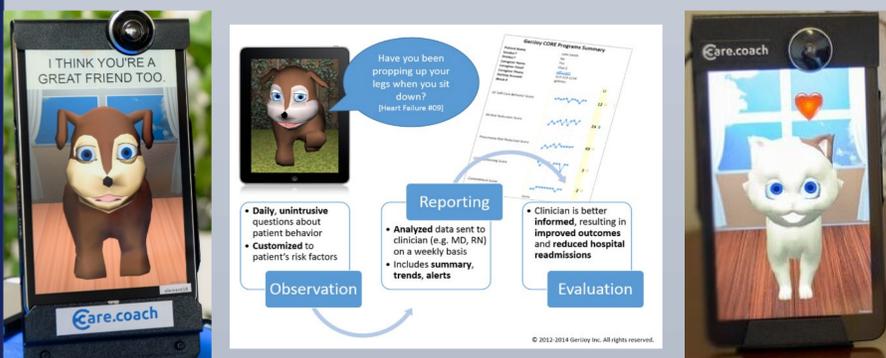
PICOT

P- The **population** of this research will focus on elders between the ages of 65-85 who live in the community and have a history of one or more falls.

I- The **intervention** of this research will focus on reducing the number of falls/ER visits through the use of an Avatar in the home. The Avatar will be installed and monitored by the participants' primary care team. The Avatar will be available 24 hours per day, and will check in at a minimum of 2-hour intervals. The transcripts will be made available to the primary care team, as well as to family members who may be involved with the patient's care, and will be discussed on a regular basis; weekly to start.

C- The intervention of implementing an Avatar will allow **comparison** of the number of reported falls before and after the intervention.

O- The **outcome** of this study is to reduce the number of falls/ER visits participants are having at home and improving the communication with the interdisciplinary team. From the intervention listed above, elders living at home will have decreased falls.

T- Time period will be 6 months long. Data will be collected 5 times over the course of the pilot. Phase 1 will be data collected before the intervention. Phase 2 data will be collected 2 weeks after the intervention is initiated. Phase 3 data will be collected at 1 month. Phase 4 data will be collected at 3 months. Phase 5 data will be collected at 6 months.

Results

Companionship: According to a 2010 AARP study, loneliness is a significant predictor of poor health and affects more than a third of older adults in the U.S. The companionship provided to elders affects their mental wellbeing. Because the avatar is pre-loaded with personal images, songs the patient may like as well as some general information about the patient, they are able to easily bond with the avatar.

Care: The avatar is loaded with medical information, like what times the patient should take their mediations as well as reminders to increase fluids or weather information indicating how the patient should dress. For example, if a patient has CHF and needs to check daily weights, the avatar is able to remind the patient to check their weight, as well as keep a log of weight trends

Connection: The avatar has an online portal that family members can monitor. This has a log of all conversations with the user and the avatar, as well as places to add new information and pictures. Also, the avatar can call family members if the user has a change in behavior or displays unsafe decision-making

Cost: "For about $200 a month, a human-powered avatar would be available to watch over a homebound person 24 hours a day; [one would pay] that same amount for just nine hours of in-home help (Smiley, 2017)."

Recommendations for Practice

- Positive correlation between home monitoring devices and various patient outcomes
- No negative outcomes in device utilization
- Viable option as a form of telehealth especially when patients are unable to leave their home, or are immunocompromised
- Use carefully in patients with certain paranoias/dementias, as home monitoring may increase some behaviors.
- Involve families in the set up of devices and assist with familiarizing patients with the avatar
- Utilize in addition to Physical Therapy to enhance outcomes

Clinical Example

Element Care piloted Care.Coach avatar as a cost savings and outcome oriented project. Table A shows a breakdown of what kind of patients utilized the avatar. Table B shows cost savings for using an avatar versus utilizing other paid services.
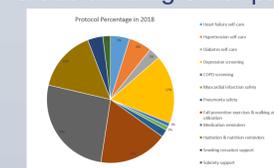
Table A

	Fall Prevention Exercises & Walking Aid Utilization	Medication Reminders	Hydration & Nutrition Reminders	TOTALS
Participants 2018	18	27	16	61
Weekly Per Participant	$100	$168.00	$120	$388
Weekly For All Participants	$1,800	$4,536	$1,920	$8,256
Quarter Totals	$23,400	$58,968	$24,960	$107,328
Avatar Cost = 11,776				$11,776
				$95,552 NET

Table B

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