Leveraging Fitness Tracker Data and 'Dementia Pets' to Combat Hypertension in Baby Boomers

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INTRODUCTION OR ABSTRACT

Fitness trackers have the capability to share information with other electronic devices, and observing one on a person's wrist is a common occurrence. Use of electronic pets in dementia care settings has shown to calm and comfort a vulnerable population, and has gained cultural acceptance. The pets respond to environmental cues to prompt actions that generally promote human interaction. Reports from staff and family of persons with dementia are favorable, noting a decrease in behavioral incidents requiring medication or removal from the setting.

The same concept of **the 'pet' recognizing pre-determined environmental stimuli** (such as a high blood pressure reading, heart rate, and locations/situations already known to increase the individual's stress level) and inviting the human to interact would be incorporated to **prevent prolonged hypertensive episodes by using biometric thresholds** (such as elevated pulse or blood pressure) as a trigger for the pet to seek out the human wearing the fitness tracker and inviting interaction.

How/Why is this Data Science?

Data Science seeks to improve decision making by boasting decisions on insights extracted from large datasets. The objects we will use in our project are common, however the insights are not. When used on alongside 'big data', new connects will be made which will allow patients to flourish. When the data from multiple studies on the triggers of hypertension along with the data from the benefits of companionship, we are hopeful data science will lead down a path of identifying key ties between individual symptoms, companionship and the avoidance of an escalated hypertension event.

OBJECTIVES

Leverage the wealth of information available from individuals' fitness trackers, home sensor and existing fitness tracker technology

Promote affordability to a mass market, interface with currently available off-the-shelf electronic pets, such as the Hasbro 'Joy for All' pets intended for use with people with dementia

Prevent progression in cardiac disease in the age 64+ population

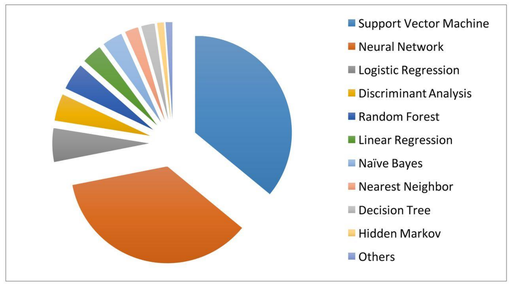
Decrease incidence of stroke (due to uncontrolled hypertension) within the Baby Boomer population by 10%

MATERIALS AND METHODS

✓ Literature review of the disabling and expensive consequences of inadequately treated hypertension.

- ❑ Focused on emerging research on benefits of interaction with electronic pets in certain patient populations.

✓ Using a combination of selected Algorithms:



✓ Selected a cohort with Mayo Clinic

MAYO CLINIC

✓ Selected already commercially available Hasbro 'Joy for All' pets

✓ Selected widely available fitness trackers as reasonably priced mechanism of collecting necessary biometric data.

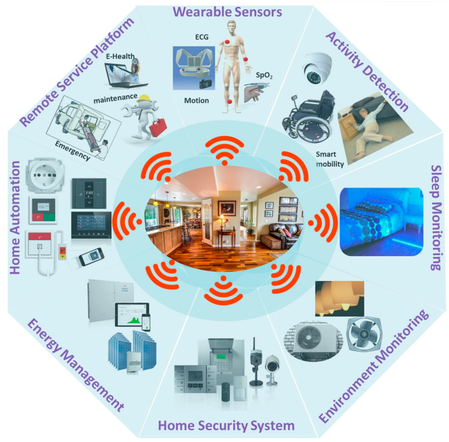
✓ Determined that electronic pets have potential to serve as sufficient 'stand-in' to achieve the same stress-lowering results of biological pets.

DELIVERABLES

✓ Bluetooth enabled electronic therapy pet under $200

✓ Ability to send information via telehealth software to user's primary care team

✓ Home Sensor array configuration



FUTURE APPLICATIONS

Treatment of chronic pain

Treatment of anxiety

Treatment of depression

CONCLUSIONS

The technology to create this product has existed for years. The cultural acceptance of electronic companionship, even among the elderly population, has been demonstrated in the nursing home setting. Telehealth technology is used nationwide and engrained in all medical systems. This is the optimal time to create and offer this product to the health-conscious consumer. With the Baby Boomer demographic advancing in age, any degree of decrease in elevated blood pressure will result in temporary savings in the form of decreased medication cost, and long term savings in the result of decreased risk of stroke (and associated debilitation and massive medical costs). This product presents virtually no risk to humans, and has potential for life-saving, life-preserving, and life-changing benefits.

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