Towards Identifying Informal Caregivers of Alzheimer's and Dementia Patients in Social Media

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Abstract—An informal caregiver is a family member, friend, or neighbor who provides assistance to an older adult. Informal caregiving is associated with increased physical, mental, and emotional stressor contributing to poor health outcomes, and caregiver burnout. This project focuses on tracking and analyzing informal caregivers in Twitter.

Keywords-component; doctoral consortium; twitter; informal caregiving

I. INTRODUCTION

With the older adult population rapidly growing, caregiving is a leading public health concern. Over 30 million adults currently provide an average of 24.4 hours per week of unpaid (informal) caregiving services to an older adult in the United States [1]. Informal caregiving is often associated with chronic physical and emotional stress [2] and 22% of caregivers report their own health has worsened as a result of caregiving [3]. By 2030, the older adult population is projected to rise by 101%, however, the number of family members available to provide informal care is only expected to rise 25% [4]. As a result, demands increase on informal caregivers and health care providers do not often address caregivers health [5].

Twitter has been used by the breast cancer patients to share their care experience, and the collection of tweets has been mined to identify those with depression or at-risk for suicide. [7]. However, the use of Twitter in promoting help seeking behaviors is not well understood, especially for caregivers who are members of the Millennial and Generation X cohorts. The use of social media outlets can capture real-time, track and monitor symptoms, and drive proactive intervention.

II. ACCOMPLISHED AND FUTURE WORK

Tweets related to Alzheimer's and Dementia have been collected since January 2016. Over 3 million tweets have been collected since then. In previous work and work currently in submission we have analyzed these tweets from different aspects. First, the tweets have been quantitatively analyzed to understand the types of captured tweets. Second, a semi-supervised method was developed to identify the relationships of the care recipients in these tweets. This was achieved by combining machine learning techniques to identify similarity between words. A cluster of human relationships was identified and used to filter-out noise from tweets. Further more, these tweets have been analyzed from these following perspectives: basic sentiment, sentiment based on US geographical locations, and temporal sentiment.

The goal of this project is to identify users on Twitter whom are informal caregivers to Alzheimer's and Dementia patients, and analyze these user profiles. This identification process is key to capture informal caregivers before they reach a burnout stage, and intervene and reach out with support options.

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