

# Computational Exploration of Gerontology-related Topics Shared on Twitter



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**OBJECTIVE** Identifying themes of Twitter posts related to aging and older adults.

**BACKGROUND** Twitter, a popular Internet social media platform, has become a major medium for sharing information and ideas about various topics, including aging and older adults. While studies have been conducted to examine stigma or perception about specific diseases such as Alzheimer's disease [1] and seizure [2] on Twitter, there has been little effort to identify general themes of Twitter posts related to aging and older adults.

## METHODS Data Collection

Keyword expansion to find commonly-used keywords starting with seed hashtags #olderadult, #aging...

Collection of posts using 19 English keywords related to aging and older adults, from 7/1/18 to 7/31/18.

## Keywords Used to Retrieve Posts

senior(s)	seniorcitizen(s)
oldperson	old(er)people
olderperson(s)	olderadult(s)
oldman	oldlady
elderly	elderlypeople
elders	granny
grandparents	seniorszn

## Data Analysis

Separation of original tweets and retweets.  
Text processing of the original tweets.  
Topic modeling: Latent Dirichlet Allocation (LDA) using Matlab 2018a on hashtag-filtered list of posts.  
Topics visualized using word clouds (as in [3]).

## RESULTS Dataset Description

328,568 original tweets (and 722,552 retweets) collected over 31 days.  
10,088 tweets (4,762 retweets) contained the hashtags corresponding to the keywords.  
45 topics identified computationally, then qualitatively grouped into themes. Most representative themes listed below.

### Themes Family

Including relations with family, commemoration...

E.g. of tweet:

*"Being a Grandma has taught me that my love can be multiplied and my feelings for my children and grandchildren span lifetimes. #family #grandchildren #love #familytime #Grandma #grandparents #myheart #ilovemybabies #thehappygrammy"*

### Social Work

Including community resources, service, charity.

E.g. of tweet:

*"Many thanks to the lovely #volunteers from @[edited] who are taking part in a monthly #HelpingHands session as part of our #Community Support Project for #olderpeople in #[edited]. Well done & thanks to all, your work is much appreciated!"*

### Health

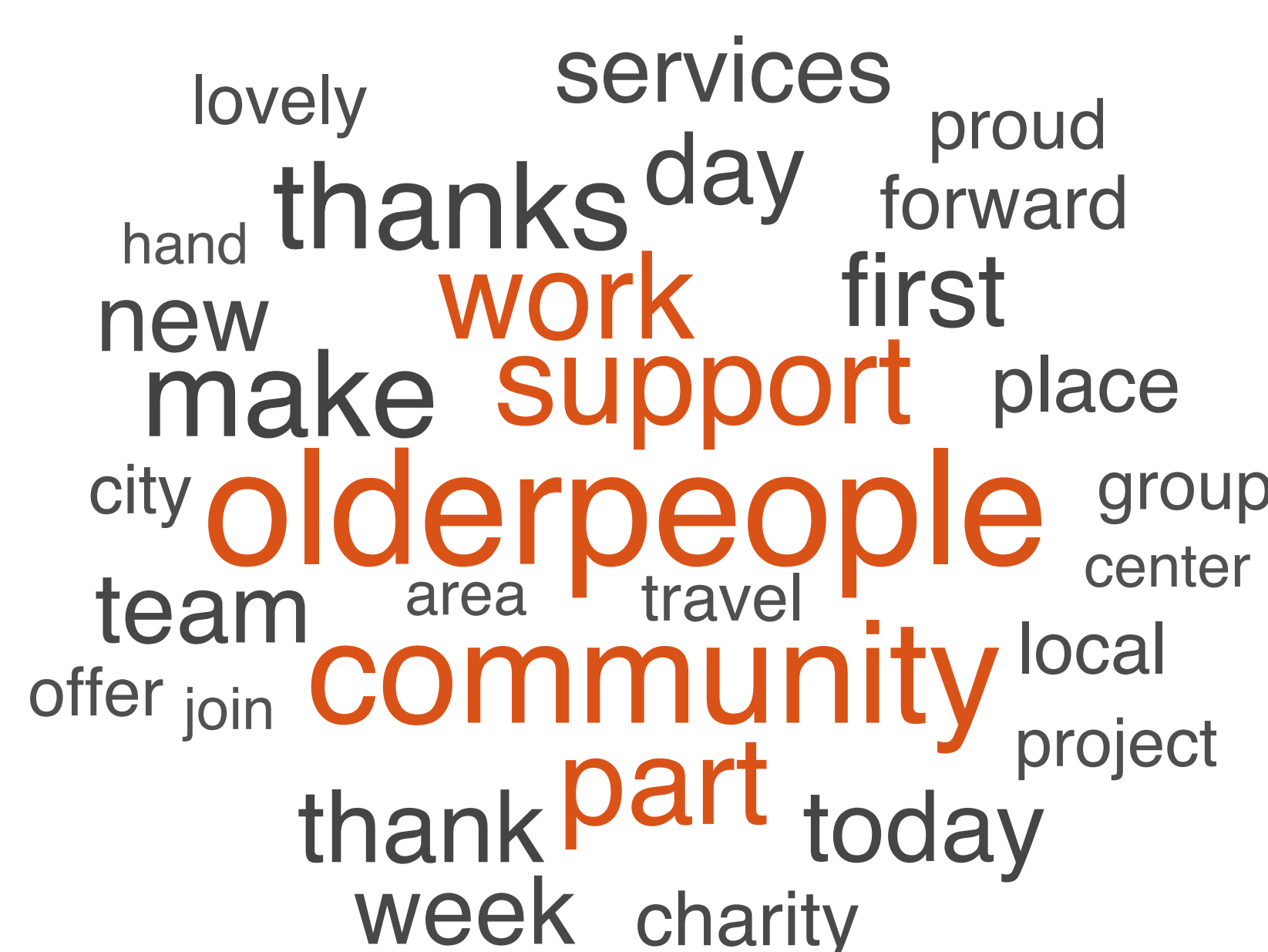
Including disease-specific content, public health, professional caregiving.

E.g. of tweets:

*"Falls are a leading cause of fatal injury among the #elderly population. This @AgingCare article lists 7 things that might cause falls: #eldercare"*  
*"Helpful tips to keep our #senior population cool this summer. #Heatwave #Seniors"*

### Corresponding Examples

Word clouds of most representative words in a topic for the given theme.



### Other Themes

Politics and policies (insurance/pension, new laws).

*Examples of representative words: medicare, veterans.*

News involving older adults (crimes on/by older adults).

Online media (e.g., porn, online videos featuring older adults).

*Example of representative words: granny, sexy, video.*

## DISCUSSION

- Some topics have negative connotations (e.g., crime, porn); some users may use aging-related terms to promote monetized content/spam.

- Knowing the lingua used to exchange about aging/older adults online can help subsequent research and interventions.

### Limitations

- Some topics tied to the period studied (July), e.g. tweets related to the heat wave, to the 4th of July.

- Results limited by the keywords chosen, some keywords introduced noise (e.g., high school *seniors*, *senior* positions...)

## FUTURE WORK

- Comparing these Western (English) themes with themes from Eastern countries (South Korea) as they have different views about aging and older adults

- Analyzing the reach of positive themes (e.g., health promotion) vs. negative ones (e.g., crimes by older adults)

### Other Frequent Hashtags

Most frequent hashtags in the dataset besides keywords used to fetch tweets:

Ranking	Hashtag
3	#health
4	#seniorcare
8	#aging
11	#maga
12	#loveisland
13	#veterans
14	#family

(Among original tweets)

## REFERENCES

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