

Sentiment of Health; A Twitter Analysis

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Jack Burright, Isaac Burright

Creighton University College of Arts & Sciences, Omaha, NE
Creighton University School of Medicine, Omaha, NE

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School of Medicine

Background

College of Arts and Sciences

- Twitter is a global social media platform that allows millions of users to express their opinions and emotions about current events.
- Significant social and political tension surrounding global health has potentially changed the emotions towards the word ‘health’ and can be investigated using large scale tweet analysis.
- The purpose of this study is to utilize data mined from tweets to investigate the global perspective of health and if it is perceived as a positive or negative concept.

Methodology

- Using a Twitter scraper in Python, we collected approximately 750,000 tweets over three separate data collections with posting dates between 12/11/2022 and 12/26/2022
- Each data collection was done using a specific keyword including ‘health’, ‘blessing’, and ‘disaster’. ‘Blessing’ and ‘disaster’ were chosen for comparison groups because they are generally associated with positive and negative connotations, respectively
- Tweets were then preprocessed with LIWC built in processor. Subsequently, tweets were analyzed using a sentiment analysis algorithm and given a numerical sentiment score for both positive and negative emotion.

Keyword	Average Negative Emotion	Average Positive Emotion	Keyword	Average Negative Emotion	Average Positive Emotion
Health	2.8723	2.9797	Health	2.8723	2.9797
Blessing	1.9220	4.0037	Disaster	2.484	0.5900
p-value	< 0.001	< 0.001	p-value	< 0.001	< 0.001

Results & Conclusions

- Our analysis showed a statistically significant difference in levels of both positive emotion ($p < .001$) and negative emotion ($p < .001$) associated with the terms ‘health’ and ‘disaster’.
- Similarly, there was a statistically significant difference in positive emotion ($p < .001$) and negative emotion ($p < .001$) of the terms ‘health’ and ‘blessing’. Interestingly, the term ‘health’ was found to be associated with a greater negative emotion compared to the term ‘disaster’.
- We hypothesize that this may be a result of recent global health challenges, including the pandemic, and recommend that future research explore the temporal relationship between these events and the negative perception of health.