Impact of the COVID-19 Pandemic on Global Psychological Wellbeing: A Text-Analysis Approach

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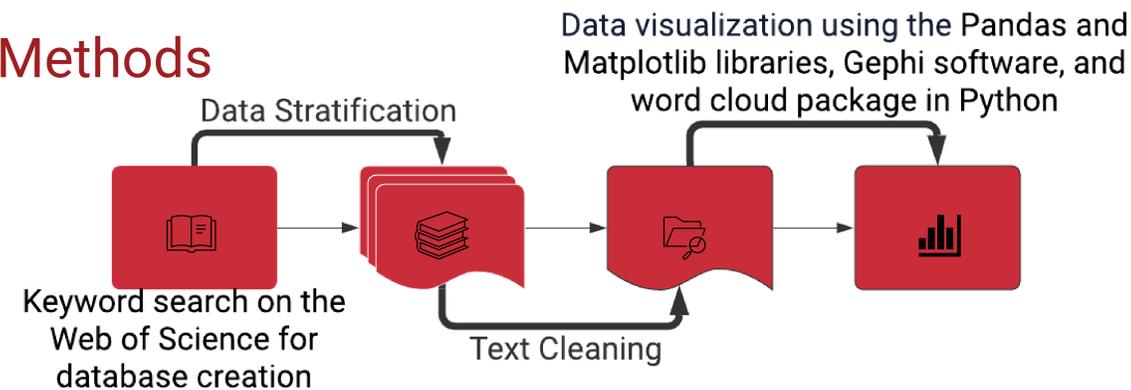## Highlights (Abstract)

- The **COVID-19 pandemic's deterioration of psychological wellbeing** in certain populations **is well documented**

- This paper aims to fill gaps in the literature by **reviewing and comparing mental health literature from lower middle-income countries (LMIC) and non-LMICs** using natural language processing (NLP)

- The created data visualizations demonstrate that the **mental health literature remains similar across demographics and study areas** with small but notable **differences in demographics and reported impact/attitude** on mental health and the pandemic in **LMICs: a more "negative" response to the pandemic and a focus on younger demographics.**

- Due to the **ongoing nature of the pandemic** and the **lack of published literature from LMICs**, a complete picture of the overall impact on psychological wellbeing cannot be captured. Thus, **future research remains to be done**.
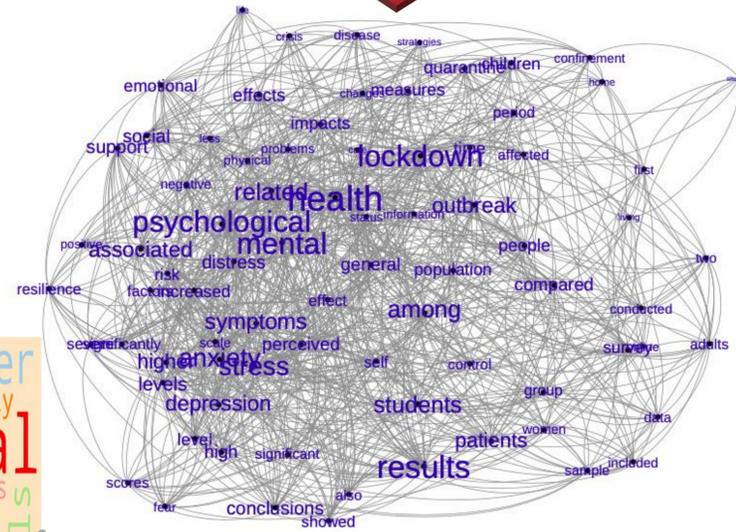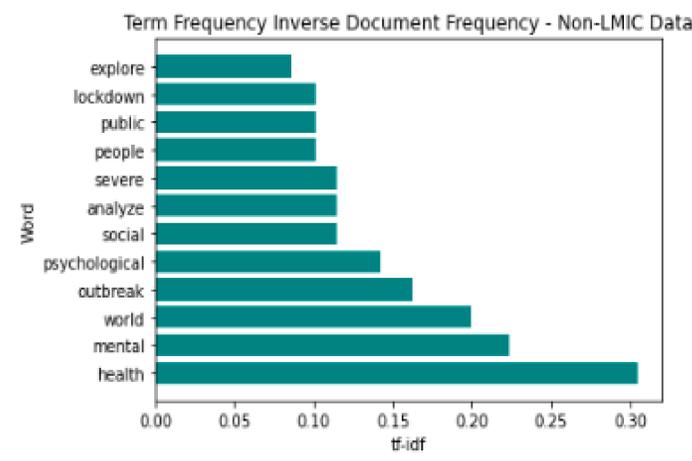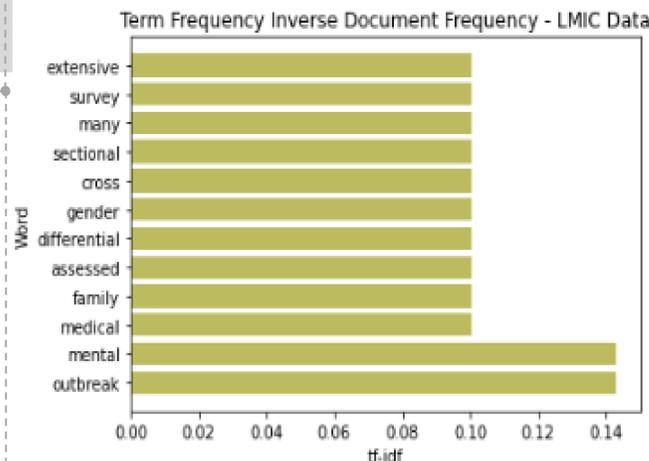
Research Goal

1. To characterize and compare the existing literature on mental health and psychological wellbeing across different demographics and study areas
   1. How do populations in LMICs compare to populations in more developed nations as reflected by the published mental health literature ?

Study Area

Methods

Data visualization using the Pandas and Matplotlib libraries, Gephi software, and word cloud package in Python

Data Stratification

Keyword search on the Web of Science for database creation

Text Cleaning

Data Visualizations

Non-LMIC Data Word Cloud

LMIC Data Word Cloud

Term Frequency Inverse Document Frequency - LMIC Data

Term Frequency Inverse Document Frequency - Non-LMIC Data

Future Plans

- Creation of an accurate sentiment analysis classifier capable of labelling data automatically
- Expanding the dataset
- Tracking sentiment across time as vaccination campaigns roll out across the world

Acknowledgement

Results & Analysis

- The nodes **"high"**, **"anxiety"**, **"stress"**, and **"depression" form a tight cluster**, indicating a close relationship with one another across all the data.
- The **"resilience" node forms a close network with "social", "emotional", and "support"**, indicating a correlation between the nodes
- The **LMIC data** indicates a **higher prevalence of terms such as "fear", "threat", "tension", and "gender"** whereas those terms don't occur commonly in the Non-LMIC data.
- The results of the tf-idf analysis indicate that the terms **"family", "gender", and "differential" are more relevant in the LMIC data** and in fact do not appear in the most common frequencies in the Non-LMIC Data

Conclusion

- Researchers and policymakers must **reconsider outreach to target demographics** during the pandemic in LMICs
- **More representative data of LMICs** would allow for better characterization
- Current **measures must be revaluated and assessed** for possible negative impacts against vulnerable groups in LMIC populations