

# Research Proposal: Social Network Analysis for Suicide Prevention Messaging

## 1. Introduction

Suicide remains a significant public health concern, with over 700,000 individuals dying by suicide each year globally (World Health Organization, 2021). The need for effective suicide prevention strategies is critical, particularly among vulnerable populations who often face barriers to accessing mental health services. This proposal outlines a research project that leverages Social Network Analysis (SNA) to enhance the dissemination of suicide prevention messages tailored to specific demographic groups. By identifying key influencers and information pathways within online communities, this project aims to improve the reach and impact of mental health campaigns, ultimately reducing suicide rates.

## 2. Problem Statement

Despite the increasing prevalence of digital health interventions, many individuals, particularly those from marginalized communities, remain disconnected from mental health resources. Current suicide prevention strategies often fail to engage these populations effectively. The lack of targeted messaging and the inability to identify influential community members hinder the dissemination of critical information. This project seeks to address the following research questions:

1. How can SNA be utilized to identify key influencers within online communities for suicide prevention messaging?
2. What are the most effective pathways for disseminating tailored suicide prevention messages to vulnerable populations?
3. How can the impact of these tailored messages on suicide prevention be measured?

## 3. Objectives

The long-term goal of this research is to develop a scalable digital intervention that utilizes SNA to optimize suicide prevention messaging. The specific objectives of this study are:

1. To identify key influencers within online communities who can effectively disseminate suicide prevention messages.
2. To develop tailored messaging strategies based on demographic and psychographic data of target populations.
3. To evaluate the effectiveness of these tailored messages in increasing engagement and reducing suicidal ideation among participants.

## 4. Preliminary Literature Review

Previous research has demonstrated the efficacy of digital health interventions in improving mental health outcomes (McCulloh et al., 2012). However, there is a notable gap in the literature regarding the application of SNA in suicide prevention. Studies have shown that individuals are more likely to engage with health messages when they come from trusted sources within their social networks (Valente, 2010). Furthermore, the use of tailored

messaging has been linked to increased effectiveness in health communication (Kreuter et al., 2000). This project builds on these findings by integrating SNA with tailored messaging strategies to enhance the impact of suicide prevention efforts.

## 5. Methodology

This study will employ a mixed-methods approach, combining quantitative and qualitative research methods. The research will be conducted in three phases:

### Phase 1: Identification of Key Influencers

Using SNA, we will analyze online community interactions to identify key influencers who can effectively disseminate suicide prevention messages. Data will be collected from social media platforms and mental health forums, focusing on user interactions, engagement metrics, and content sharing patterns.

### Phase 2: Development of Tailored Messaging Strategies

Based on the insights gained from Phase 1, we will develop tailored suicide prevention messages that resonate with specific demographic groups. These messages will be designed using principles of health communication and will be tested for clarity, relevance, and emotional impact through focus groups.

### Phase 3: Evaluation of Impact

The effectiveness of the tailored messaging strategies will be evaluated through a randomized controlled trial (RCT). Participants will be recruited from online communities and will be randomly assigned to receive either the tailored messages or standard suicide prevention information. Outcomes will be measured using validated scales for suicidal ideation and engagement with mental health resources.

## 6. Expected Outcomes

This research is expected to yield several significant outcomes:

1. Identification of key influencers within online communities who can effectively disseminate suicide prevention messages.
2. Development of tailored messaging strategies that resonate with vulnerable populations.
3. Evidence of increased engagement with suicide prevention resources and a reduction in suicidal ideation among participants receiving tailored messages.

## 7. References

- McCulloh, I., Johnson, J., & Carley, K. (2012). Spectral Analysis SNA.
- World Health Organization. (2021). Suicide worldwide in 2019: Global health estimates.
- Valente, T. W. (2010). Social Networks and Health: Models, Methods, and Applications. Oxford University Press.
- Kreuter, M. W., Farrell, D., & Olevitch, L. (2000). Tailoring Health Messages: Customizing Communication with Computer Technology. Lawrence Erlbaum

Associates.

## **8. Budget and Timeline**

The proposed project will require funding for personnel, data collection, and analysis tools. A detailed budget will be provided upon request. The project is expected to be completed within a 24-month timeline, with key milestones including the completion of influencer identification, message development, and evaluation phases.

## **9. Conclusion**

This research proposal outlines a novel approach to suicide prevention through the application of SNA and tailored messaging strategies. By identifying key influencers and optimizing the dissemination of suicide prevention messages, this project aims to significantly impact mental health outcomes among vulnerable populations. The findings will contribute to the growing body of evidence supporting digital health interventions and their role in addressing mental health disparities.