

N/A: Not Alone - Online and Mobile Community for Depression, Loneliness, and People Suffering from Suicidal Ideation

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Abstract—Depression, loneliness, and suicidal ideation are global epidemics. Not only is the number of people suffering from these ailments vast, they are increasing at an alarming rate. According to the World Health Organization, every year nearly 800,000 people die as a result of suicide worldwide. And for each of those deaths, there are indicators that 20 more people attempted suicide. It is predicted that by 2020 the rate of death by suicide will increase to one death every 20 seconds [1]. Additionally, the World Health Organization estimates that globally more than 300 million people suffer from depression [2]. A recent study found that 31% of adults suffer from significant loneliness at least once a week in the United States alone [3]. As the prevalence of loneliness rises, evidence accrues that loneliness is a major risk factor for poor physical and mental health [4]. The purpose of this paper is to offer a means to facilitate healing and a sense of community to the millions of people suffering world-wide. The proposed strategy is an online community where individuals from all walks of life can come together to share and support each other, as well as bond and build friendships to help sustain their recovery. This community will go by a designation which fits the mind set and the mission of the community: N/A: Not Alone.

Index Terms— Depression, Loneliness, Mental Health, Online Community, Suicide

1 INTRODUCTION

THE objective of N/A: Not Alone is to provide an online community to help facilitate the healing, assistance, and potentially even the recovery of individuals suffering from depression, loneliness, and suicidal ideation. The rapidly increasing number of people suffering from these ailments shows that poor mental health is globally a growing epidemic. The issue is pervasive but yet social and political communities around the world struggle with providing adequate support and resources to those in need. N/A aims to fill this gap by facilitating a peer-to-peer support network.

2 THE PROBLEM

In 2013, in addition to the 42,826 Americans that lost their lives to suicide, it is estimated that 1.3 million more adults had attempted suicide throughout the year prior. In 2013, death by suicide had reached an all-time high in the United States, and each year it has continued to increase [5]. This disturbing rise in the number of people falling victim to suicide is mirrored across the globe. Combined with the 300 million suffering from depression and the third of Americans battling significant loneliness, the humans of the world are in a dire state and in clear need of help. Now that we have seen a sample of statistics to show the vastness of suffering, let us explore the attempts to rectify the issue of poor mental health.

There is a combination of treatment typically available: the more accessible kind for which you pay, and the no-cost care which is less accessible to the average individual.

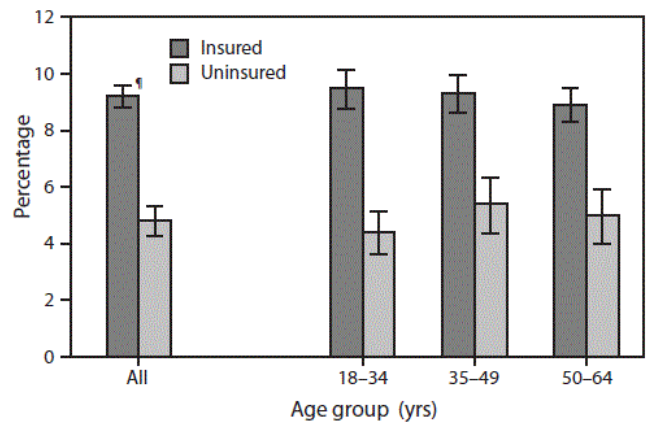


Fig 1. Percentage of Adults Aged 18-64 Years who Have Seen or Talked with a Mental Health Professional in the Past 12 Months, by Health Insurance Status and Age Group [7]. * 95% confidence interval.

Of the paid variety, one avenue for treatment is consultation with a mental health care professional. In one survey, 32% of Americans were found to have sought professional counseling in their lifetime [6]. The issue with this sort of treatment however are the obstacles to accessibility. Another survey found that within the last year 9.2% percent of insured Americans had spoken with a mental health profession, compared to only 4.8% of uninsured Americans [7]. In addition to this, alternative sizable obstacles to receiving treatment includes the cost of co-pays for those who do have insurance, and the general stigma that surrounds speaking with a mental health care professional for the insured and uninsured alike.

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Of the free variety, much of the treatment is not continuous. In one area of improvement, the visibility and the encouragement to make use of suicide hotlines has increased noticeably. The National Suicide Prevention Lifeline took 20,000 calls in their inaugural year of 2005, and by 2014 they had moved to answering 1.5 million calls annually [8].

These numbers show both encouraging and discouraging trends. It is encouraging that so many people are taking advantage of this free service. The discouraging truth however is, the increase in calls is also related to the increase in individuals struggling with suicidal ideation. Additionally, it demonstrates that there is a demand for help higher than the supply of satisfactory employees and volunteers.

For example, a sampling of the negative statements that demonstrate the discrepancy between supply and demand include “I was on hold for almost 20 minutes which made me [feel that I] was unimportant” [9]. Many hotlines redirect the calls to a local crisis center. An individual who had volunteered for a suicide hotline stated “I used to get 20-30 calls in a four-hour shift and there was maybe a 6 to 8 people [volunteering] on the phones. That’s a ton of calls and we couldn’t get to all of them. We’d try to limit each caller to 10 minutes” [10].

Sadly, as made evident above, it is impossible to adequately support all of the people in need. And, at the end of the day, a lot of struggling people do not actually want to talk to a volunteer on a hotline. They want to talk to someone who truly understands and can relate to their thoughts and experiences.

This is where N/A: Not Alone comes into play.

3 THE SOLUTION

3.1 THE MISSION

The quotations from the individuals above came from online forums. Normally, referencing websites such as Reddit or Tumblr would be preposterous in a paper. However, in the context of this paper, they are entirely relevant. These quotations directly show the current state and opinion of individuals looking for help online, which is the audience that inspired the creation of N/A.

In my years on the internet, I have encountered a shocking number of posts on various mediums from lonely and sad people, desperately reaching out to strangers on the internet. Many people desperately need someone to talk to but in the massive abyss that is the internet they can’t seem to figure out how to find the help or connection that they are missing in their real lives.

Typically online, people come to a place meant to group individuals by their interests, and it is there that they reach out for help with their depression or loneliness. N/A however aims to group people by their common struggle. Personal interests and general discussion are the secondary features that follow.

N/A would make the burden of finding connections online easier because it centralizes the group of individuals looking for support and understanding into one online community. An individual struggling with depression who encounters a night of particularly overbearing loneliness can come to N/A

to find the sense of community and connection that is so difficult to encounter elsewhere on the internet.

3.2 SERVICE FEATURES

N/A will provide a free online community for people who suffer from depression, suicidal ideation, and loneliness. The features will allow users to share their struggles with like-minded individuals, have regular social interaction through a variety of venues, and form bonds and friendships with other users who will ultimately aid in the path to recovery from the ailments that brought users to N/A in the first place.

Registration will be required to view or interact with the N/A community to make users feel more comfortable and to discourage trolling or other forms of abuse. Registration however will be simple and discrete.

The goal is to allow users to take advantage of various forms of online communication with a variety of different modes for interaction with other users. This way, each user may select the format in which they are most comfortable engaging. They will also have access to both immediate conversation between users (as seen in direct messaging), or delayed interaction (as seen in forums).

The forms of user interaction include:

1. **Forums.** There will be forums for general conversation, hobbies and interests, advice, and support forums for users who have suffered from various forms of hardship and/or trauma. There will be special sections encouraging the reflection and sharing of the good in users’ lives. These will include forums focusing on things such as: good moments from the user’s day, upcoming events that users are excited for or working toward participating in, forums to share and celebrate progress in mental health or general life success and happiness.
2. **Chat.** Forums provide good interaction throughout the day, but often times people want to talk with others in the moments when feelings of loneliness and sadness are setting in. N/A will provide a chat room which will allow users a space to speak with other users in real time.
3. **Direct Messaging.** This will allow for users to speak to each other one-on-one. It will function similar to messaging through Facebook where responses are shared in real time but available to read and respond to without both users being active.
4. **Buddy of the Day.** Users will be encouraged to create profiles with general interests and other information they feel comfortable sharing. Then, every day, each user will be randomly shown a special Buddy of the Day who has been active within the last 30 days. This will help encourage users to meet and form more personal bonds with other users.

The various degrees of interaction listed above provides the kinship and social interaction that will have originally brought users to N/A.

3.3 SAFETY FEATURES

Services like N/A face a unique, ethical challenge. The challenge is the question of when to prioritize safety versus privacy. It is a delicate situation because the answer could result in either reluctance by potential users to participate, or alternately, liability to N/A. Additionally, there could be a chance of political or social controversy as a result of these decisions.

A possible compromise to the privacy versus safety dilemma could be the option to either opt in or out of a “crisis report” feature. In this feature, if a user is reported to be at escalating risk of self-harm or harm to others, pre-designated emergency contacts can be notified. Or, if the circumstance is particularly severe, proper authorities in participating areas.

4 THE HARDWARE

4.1 SOFTWARE CHALLENGES

N/A essentially takes all of the best features from various popular social media platforms and brings them together into one ideal platform that easily facilitates various forms of interaction. It will have a forum system akin to Reddit, a messaging system similar to Facebook Messenger, and a randomized user matching system much like Coffee Meets Bagel.

Not surprisingly, the architecture to support such a service would be substantial, as well as costly to create and maintain. Fortunately, due to the nature of the service, I believe that adequate support would easily be met by influential benefactors, grants, donations, and even crowdfunding.

It must be noted however, that even though funding is a key concern, it is incredibly important for N/A to be provided as a free service to any and all who wish to participate. The integrity of the service as a by people for people venture is essential to the users’ success.

4.2 THE ARCHITECTURE

There are a variety of approaches that could be used to build the architecture to support N/A. In this section we will discuss and defend the chosen strategy.

In terms of the chosen database, N/A will utilize a cloud-based database due to its many benefits. One benefit which directly addresses the budget concern is that a cloud-based system is a cheaper alternative to more traditional database models. It decreases the money which needs to be invested on storage and network expenses, as well as offers pay-as-you-go or monthly subscription options. The security concerns are handled by the provider of the cloud database service [11] and there is exceptional scalability and elasticity. The latter is a great benefit to N/A as it will start as a relatively small service and then ideally grow into a widely used service [12].

Some challenges provided by a cloud-based system include internet quality and stability, multi-tenancy, and privacy. For the user to interact with N/A, internet connection is unfortunately a necessity. As such, the internet quality does not create an issue that would not already be a known issue for N/A’s implementation. The multi-tenancy issues can be improved by running the database from various virtual machines, and the privacy issue can be resolved with encryption keys [11].

To accompany the cloud database, N/A will utilize the MEAN stack (MongoDB, ExpressJS, AngularJS, Node.js).

This stack will benefit N/A due to its high performance and ability to easily handle scalability, as well as the simplicity in which its components can be learned and implemented. Additionally, due to the popularity and wide-spread usage of the MEAN stack, the development skills needed are very low.

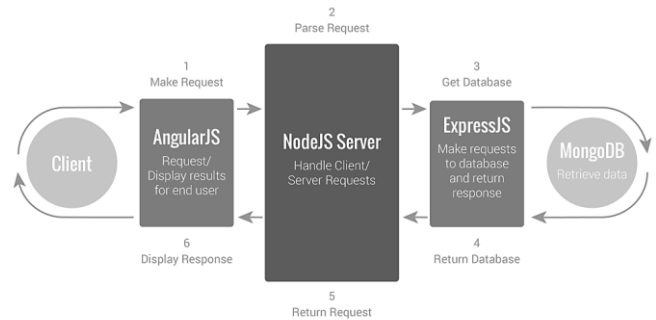


Fig 2. Example flow of a Scalable App Developed with a MEAN Stack [13].

4.3 USER DEVICES

Accessibility is an essential feature of N/A so it will feature both a mobile application and a website. It is safe to assume that any user with an internet connection and a computer capable of web browsing will be able to visit the N/A website. Due to the complexity of the various components however, there is a risk of software bloat in the mobile version if the user has an inadequate device or internet connection. As a result, the minimum expected mobile requirements would include:

1. Operating System: iOS v. 10.0+, Android 5.0+, Windows Phone 8.1+
2. Device Space: 150MB
3. Internet Connection: WIFI or 3G+

5 METRICS FOR SUCCESS

The success of N/A can be witnessed internally by reviewing several features over time:

1. Progress Forum. Positive testimonials and encouragement within the Progress Forums reveal an improved quality of life and mental health. As N/A ages, increased testimonials would indicate the effectiveness of the service.
2. Wellness Surveys. Surveys for users to check-in on their mental health are available in the side-bar. Users will also be prompted for feedback on membership anniversaries. Positive feedback from survey requests as a user’s time as a member increases will demonstrate N/A’s benefit. It will also help N/A to identify user opinions on strengths and weaknesses of the service.
3. Crisis Reports. If a Crisis Report is filed and the threat deemed legitimate, N/A’s action could directly result in the survival of the user in question.

Externally, the successful execution of N/A would result in the relief of millions world-wide who are struggling with loneliness, depression, and suicidal ideation.

No one with access to the internet in participating countries or languages would ever have to be alone again. The community of N/A would always be available to support one another throughout their mutual successes and failures. It is certain that N/A would aid in the recovery of many individuals world-wide and save lives.

6 CONCLUSION

In this paper, we reviewed N/A: Not Alone, an online community providing a safe place for people to find support and connections with others while they are struggling with issues such as depression, suicidal ideation, and loneliness. We started with reviewing the crisis that is poor mental health and exposed the inadequacy of the current solutions due to an imbalance in supply versus demand. N/A was offered as a solution by exploring how various features could provide ways for users to interact with and support one another. We examined the architecture which used a cloud-based system and the MEAN stack to support the service's need for affordability, scalability, and high performance. Finally, we reflected on benefits of N/A and how it aids in the real-world problem of poor mental health and human suffering. In closing, the implementation of N/A: Not Alone would greatly improve the mental health of the millions of people suffering worldwide, as well as save countless, invaluable lives.

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