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Social Health & Anxiety Tracking

Global populations
Social anxiety
Impact of COVID on social health

Social Media, Big Data and Public Health Informatics: Ruminating behavior of depression revealed through Twitter

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Abstract

Undiagnosed and untreated depressive disorders have become a serious public health issue and it is prevalent among people of all ages, gender and race. Social media sites, such as Twitter, have become a major venue for people to express/disclose their thoughts and feelings. The tweets from these micro-blogging sites could be used to screen for and potentially detect depression. To date, studies in this area have focused on developing and validating the terms and vocabulary used by users with depression, or evaluating tweets related to depression by using terms that are synonymous with depression. This approach has not produced reliable findings. In this study, we depart from this approach and instead, base our analysis on research on depressive disorders, which indicates the critical significance of repetitive thoughts and ruminating behavior of people with depression. The current study and findings hold important implications for research on depression, social media, and public health informatics.

1. Introduction

Undiagnosed and untreated depressive disorders have become a serious public health issue and more and symptoms, chronic pain, all of which could lead to higher and more frequent use of medical services [1].

Depression is highly prevalent among people of all ages, gender and race and further, increasingly there is evidence of a rise in depression among younger population and senior citizens. Over 20 million people in the United States suffer from some form of mood disorder, however, only 50% is being diagnosed and treated properly [3]. Approximately 14.8 million adults (>18yrs) or 6.7% of the US population are being diagnosed with Major depressive disorders (MDD) every year [3]. While the rate of diagnosis is increasing, depression diagnosis is still very difficult as clinical depression can manifest in different ways and can vary from one individual to another [4]. Sometimes it can mimic other diseases and quite often, co-existing conditions can confound an accurate diagnosis of clinical depression [4]. While active research is being undertaken to develop a more accurate test to clearly diagnose depressive disorders, most physicians rely on interview based methods and ruling out other diseases that could cause the same kind of symptoms.

Depression among younger population, which is reaching the rates of adult depression [5,6], is far more troubling as they are typically ill-equipped to detect it

Leveraging Intermediated Interactions to Support Utilization of Persuasive Personal Health Informatics

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ABSTRACT

Behavior change support systems (BCSS) and persuasive technologies for healthcare often entail users interacting with mobile devices. However, especially in developing countries, the target community is unfamiliar with and often intimidated by new technologies. In this paper we propose the use of *intermediaries* to facilitate interaction with a mobile phone-based application and to motivate ongoing use by the target beneficiaries. The application incentivizes utilization through gamification techniques, using badges, scoreboards, and other rewards. For example, a young girl might help her father keep track of his walking and diet, maintaining participation as much for her father's health as for the social awards given by the app. We explain how intermediaries can be leveraged to improve utilization and engagement of the beneficiaries, and describe factors affecting interaction between the participating pairs and interaction with the application. This study highlights the importance of social rapport - typically through a familial relationship - as a key component of the intervention. Finally, we discuss the implications of designing for the motivation of two different users: gamification, personalization and utility play different roles for the intermediary and the beneficiary but ultimately combine to make a more effective application for the beneficiary than one targeting the beneficiary alone.

1. INTRODUCTION

Approximately 1.3 billion people are considered to be either overweight or obese worldwide, of which two-thirds are found in low- income or developing countries [34]. While this pandemic used to be considered a "first world problem", urbanization and changing lifestyles have led to increasing problems for the low-income communities of the developing world. For example, 60% of South Africans are overweight, with four in 10 women that are either overweight or clinically obese [24].

A typical intervention from the West might entail development of a persuasive application to encourage healthy eating and exercise behaviors [3, 14]. Persuasive applications on mobile phones are particularly well-positioned for interventions that target psychological processes, because they are pervasively present for the users [16]. Gamification, enabling self-reflection, or more simple strategies such as SMS-based reminders all motivate positive experiences and more frequent engagement [6, 14]. The subset of these interventions that target collection of personal history entry, review and analysis is broadly called personal informatics, or personal health informatics (PHI) for health interventions.

However these applications fail to replicate well to typical populations targeted by information and communications technology for development (ICTD) interventions [17]. In

Faceit. CHI '13 Supporting Reflection upon Social Anxiety Events with Lifelogging

FaceIt: Supporting Reflection upon Social Anxiety Events with Lifelogging

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Abstract
Many reasons prevent those with mental health problems from maintaining and maximizing effective therapy. In this paper we explore the merits of a multimodal mobile mental health intervention designed to enhance adherence and outcomes in using cognitive behavioral therapy methods for social anxiety disorder. This mobile system combines several facets of guided lifelogging to assist in meeting the challenges of completing cognitive behavioral therapy tasks and recording occurrence data helpful for treatment. FaceIt is a multi-level mobile intervention that supports recall and reflection for completing daily mood logs and exposure therapy, and also uses location, duration, and severity information to track where problems occur, how often, and their duration in order to document user progress.

Author Keywords
Social anxiety, Cognitive Behavioral Therapy, lifelog

ACM Classification Keywords
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Introduction
Social anxiety disorder (SAD) involves nervousness, discomfort, or even deep fear of being watched,

Anxiety detection using wearable monitoring

Anxiety detection using wearable monitoring

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ABSTRACT

Social Anxiety Disorder (SAD) might be confused with shyness. However, experiencing anxiety can have profound short and long-term implications. During an anxiety span, the subject suffers from blushing, sweating or trembling. Social activities are harder to accomplish and the subject might tend to avoid them. Although there are tested methods to treat SAD such as Exposure Therapy (ET) and Pharmacotherapy, patients do not treat themselves or suspend treatment due economic, time or space barriers. Wearable computing technologies can be used to constantyly monitor user context offering the possibility to detect anxiety spans. In this work we used Google Glass and the Zephyr HxM Bluetooth band to monitor Spontaneous Blink Rate (SBR) and Heart Rate (HR) respectively. We conducted an experiment that involved 8 subjects in two groups: Mild SAD and No SAD. The experiment consisted on an induced anxiety situation where each participant gave a 10 minutes speech in front of 2 professors. We found higher average heart rates after induced anxiety spans on the mild SAD group. However, we found no evidence of increased SBR as an anxiety indicator. These results indicate that wearable devices can be used to detect anxiety.

or other social factors. When this person faces this uncomfortable span, he or she could experience anxiety, which is a normal reaction in order to achieve a goal. However, when experimenting a higher level of anxiety that impedes him to carry a normal life, it is said that he suffers from an anxiety disorder [15].

The Social Anxiety Disorder (SAD) or Social Phobia (SP) is categorized as Social Anxiety and it has relation with Autism Spectrum Disorders (ASD) [12] and Obsessive Compulsive Disorder (OCD) [13]. SAD is classified as a phobia disorder in DSM-IV (Diagnostic and Statistical Manual of Mental Disorders) and in ICD-10 (International Classification of Diseases 10) [6]. Social anxiety is the most confronted clinical condition, occurring in 18% of the population in USA [14]. It tends to appear in late childhood/puberty and prevails in the rest of the life of a 5-12% of the USA population [6].

People who experience social phobia usually find themself inside difficult and awkward situations. Social activities like family or work meetigs, parties, talking with professors, asking for indications or facing an authority can turn into very stressing situations. Typically, the patient tries to evade

Monitoring Social Relationships in Group-housed Monkeys using Automated Face Recognition and Tracking

Measured a group of monkey's social changes following stressful interactions.

After a stressful event, in this case a health screening, the researchers observed the social interactions of the monkeys to find that social associations were strengthened during stressful periods, then returned to normal following the occurrence.

This study is relevant as it suggests that social creatures find solace in social interactions, and that relationship is capable of being measured.

For humans, this study does little to confirm that there is a correlation between social interactions and stress levels, but may serve as a foundation for further research with humans and busy places.

Midi-level measurement of social anxiety in psychiatric and non-psychiatric samples. Behavior research and therapy

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MIDI-LEVEL MEASUREMENT OF SOCIAL ANXIETY IN PSYCHIATRIC AND NON-PSYCHIATRIC SAMPLES*

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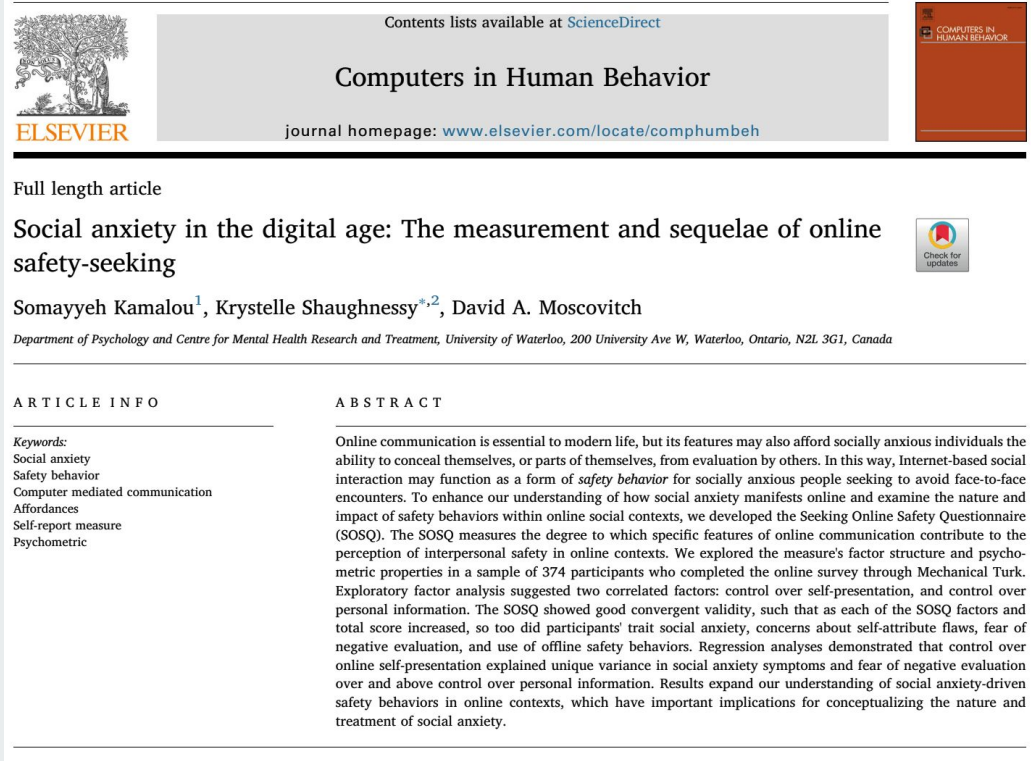
Summary—This paper reports the development and assessment of midi-level behavioral measures of social anxiety in the context of two experiments, one studying an analog student sample, the other a psychiatric sample. Judgments on nine categories of clinically practical midi-level behaviors (e.g. Facial Expression, Orienting, Sense of Timing), based on a review of the literature on human ethology and on pilot research, were compared to global judgments of social anxiety and social skill and to physiological arousal. Intraclass correlations exceeded 0.80 for judgments of the global and midi-level behavioral ratings on both samples. Results of correlational analyses indicated that while there were several significant predictors of global skill and anxiety among the midis, the magnitude of the relationship between midis and globals was stronger for the patient than the student sample. Further analyses based on *S*'s heart rate (HR) reactivity suggested that while global ratings did not significantly predict HR in a high social anxiety situation, one midi-level behavioral rating (self-manipulations) did. The clinical utility of the newly developed measures is discussed with particular attention to their practicality for behavior therapy.

Social anxiety in the digital age: The measurement and sequelae of online safety-seeking.



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Full length article

Social anxiety in the digital age: The measurement and sequelae of online safety-seeking

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ABSTRACT

Online communication is essential to modern life, but its features may also afford socially anxious individuals the ability to conceal themselves, or parts of themselves, from evaluation by others. In this way, Internet-based social interaction may function as a form of *safety behavior* for socially anxious people seeking to avoid face-to-face encounters. To enhance our understanding of how social anxiety manifests online and examine the nature and impact of safety behaviors within online social contexts, we developed the Seeking Online Safety Questionnaire (SOSQ). The SOSQ measures the degree to which specific features of online communication contribute to the perception of interpersonal safety in online contexts. We explored the measure's factor structure and psychometric properties in a sample of 374 participants who completed the online survey through Mechanical Turk. Exploratory factor analysis suggested two correlated factors: control over self-presentation, and control over personal information. The SOSQ showed good convergent validity, such that as each of the SOSQ factors and total score increased, so too did participants' trait social anxiety, concerns about self-attribute flaws, fear of negative evaluation, and use of offline safety behaviors. Regression analyses demonstrated that control over online self-presentation explained unique variance in social anxiety symptoms and fear of negative evaluation over and above control over personal information. Results expand our understanding of social anxiety-driven safety behaviors in online contexts, which have important implications for conceptualizing the nature and treatment of social anxiety.

Thanks!