3.39 Smartphone and Online Usage-Based Evaluation in Teens (SOLVD-Teen): Can an App Help Teens and Their…

6 authors, including:

Sophia Banu
Baylor College of Medicine
9 PUBLICATIONS 61 CITATIONS

SEE PROFILE

Jian Cao
Rice University
2 PUBLICATIONS 0 CITATIONS

SEE PROFILE

Asim A. Shah
Baylor College of Medicine
61 PUBLICATIONS 467 CITATIONS

SEE PROFILE

Ashutosh Sabharwal
Rice University
290 PUBLICATIONS 9,492 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Scalable Health View project

Massive MIMO Full-duplex View project

emotional abuse, anger, depression, and dissociation. In this follow-up study, we investigated the association between recent cyberbullying, child abuse and neglect, anxiety, and depression among adolescent outpatients.

Methods: We administered questionnaires assessing social media usage and cyberbullying in the previous two months [the Childhood Trauma Questionnaire (CTQ), the Children's Depression Inventory 2 (CDI2), and the Screen for Child Anxiety Related Disorders (SCARED)] to patients ages 12–17 years presenting to an outpatient psychiatric clinic. The study protocol was approved by the institutional review board.

Results: Subjects ($N = 50$; 46% male, 54% female; mean age $= 14.18 \pm 1.71$ years) were recruited. All subjects reported frequent access to the internet, and most reported using one or more types of social media at least daily. Ten percent of subjects reported being victims of cyberbullying compared with 20 percent in our previous inpatient study. Females were more likely to report cyberbullying victimhood than males (14.8 vs. 4.3%). Whereas in our previous inpatient study cyberbullying was associated with higher emotional abuse scores on the CTQ, there were no significant differences between cyberbullying victims and nonvictims in the CTQ subscale scores of this study. Cyberbullying victims had 1.25-fold higher CDI2 T-scores compared with nonvictims ($P = 0.03$). On the SCARED, female cyberbullying victims had twofold higher ($P = 0.02$) panic/somatic symptom and 2.3-fold ($P = 0.03$) higher school avoidance scores than female nonvictims.

Conclusions: Recent cyberbullying victimhood appears to be common among adolescent females, substantially more common among adolescent females than males, associated with higher levels of panic/somatic and school-related anxiety symptoms in adolescent females, and associated with higher levels of depression in adolescents in the psychiatric outpatient setting. Cyberbullying may be less common and less strongly associated with emotional abuse among adolescents in the psychiatric outpatient setting compared with the inpatient setting.

ADOL, BLY, MED

3.38 UNDERSTANDING THE ROLE OF REWARD PROCESSING AND DEPRESSION IN COMPULSIVE INTERNET USE AMONG VIETNAMESE ADOLESCENTS

Kunmi Sobowale, MD, Yale University, kunmi.sobowale@yale.edu; Hoang Anh Ngo, BA, Danang Psychiatric Hospital, hoanganhtl89@gmail.com; Lam Tu Trung, MD, Danang Psychiatric Hospital, tutrunglttrungdn@gmail.com

Objectives: Previous studies find that depression, as a broad construct, is commonly comorbid with compulsive internet use. Therefore, in this cross-sectional study, we examine the relationship between compulsive internet use and specific constructs of depression: behavioral activation and anhedonia.

Methods: We surveyed students from two high schools in Vietnam. Self-report measures of internet use, depressive symptoms, behavioral activation goal-oriented/avoidance behavior, and anhedonia system were collected. We used multivariate linear regression, controlling for gender, socioeconomic status, depressive symptoms, and patterns of internet use to determine which constructs were associated with compulsive internet use.

Results: A total of 306 students [mean age $= 16.7$ years (SD $= 0.9$); 54.6% female] were included in the study. Most students had access to the internet at home (94.5%) and owned a smartphone (76.8%). Girls and those of lower socioeconomic status were more likely to use the internet compulsively. In multivariate linear regression, we find that compulsive internet use was associated with depression ($\beta = 0.14$, $P = 0.008$), as well as certain activities, including visiting social networking sites ($\beta = 0.41$, $P < 0.001$), chatting ($\beta = 0.17$, $P = 0.003$), and online gambling ($\beta = 0.11$, $P = 0.03$). Furthermore, both behavioral activation goal-oriented ($\beta = -0.20$, $P < 0.001$) and avoidance behavior ($\beta = 0.19$, $P < 0.001$) were the strongly associated with compulsive internet use, whereas anhedonia had no association. This model explained a significant proportion of the variance in compulsive internet use [$R^2 = 0.44$,

$F(13, 280) = 18.76$, $P < 0.001$]. Avoidance behavior mediated the relationship between compulsive internet use and depressive symptoms.

Conclusions: Our results suggest that behavioral activation, particularly avoidance behavior, is an important target for curtailing compulsive internet use. In addition, restricting certain activities, such as excessive use of social networking sites, may reduce compulsive internet use among Vietnamese adolescents.

ADOL, COMP, DDD

3.39 SMARTPHONE AND ONLINE USAGE-BASED EVALUATION IN TEENS (SOLVD-TEEN): CAN AN APP HELP TEENS AND THEIR PARENTS WITH DEPRESSION?

Anh L. Truong, MD, Baylor College of Medicine, altruong@bcm.edu; Sophia Banu, MD, Baylor College of Medicine, banu@bcm.edu; Jian Cao, MS, Rice University, jc92@rice.edu; Asim Shah, MD, Baylor College of Medicine, aashah@bcm.edu; Nidal Moukaddam, MD, PhD, Baylor College of Medicine, nidalm@bcm.edu; Ashu Sabharwal, PhD, Rice University, ashu@rice.edu

Objectives: The study aims to evaluate whether the Smartphone and Online Usage Based Evaluation for Depression (SOLVD) smartphone application can be useful in monitoring and classifying depression symptoms in a clinically depressed adolescent population by tracking daily moods and monitoring smartphone usage compared to standard clinician psychometric instruments including Patient Health Questionnaire-9 (PHQ-9), Hamilton Rating Scale for Depression (HAM-D), and Hamilton Anxiety Rating Scale (HAM-A).

Methods: Thirteen patients with major depressive disorder with or without comorbid anxiety disorder and their parents or primary caregivers were recruited. Patients (aged 12-17 years) of both genders, with the diagnosis of major depressive disorder, and ownership of an Android smartphone were included. Patients were excluded if they had other comorbid psychiatric disorders. Patients and parents were prompted by the application to report daily moods for eight weeks, and parents were also asked to rate how they felt their teens were doing daily. Sensor data including GPS location and usage data were also collected. Patients and parents were evaluated biweekly by research clinician to assess for depression and anxiety symptoms through use of HAM-D, HAM-A, and PHQ-9 scales. The clinician was blinded to smartphone data.

Results: Pearson's coefficient was used as indicator of correlations between self-reported moods and sensor data to clinician psychometric instruments. Adherence rate to daily self-reported moods was 79 percent for adolescents and 95.7 percent for their caregiver. Teen self-reported mood correlated to PHQ-9 scores ($p < 0.01$). Sensor data also correlated to PHQ-9 scores as well as HAM-A scores. This was reflected as fewer calls ($r = 0.44$), fewer text messages ($r = 0.55$) and fewer steps taken ($r = 0.65$) in individuals with higher PHQ-9 scores and HAM-A scores.

Conclusions: This study showed that self-input data correlated with clinical assessment of depression in the adolescent population. Parent and teen depression levels also correlated. The study was well tolerated with no privacy or operability concerns and results suggest that a well-designed app can be used to track mood and anxiety levels reliably and that data may be useful if integrated into clinical assessment.

ADOL, MED, OTH

3.40 LENGTH OF STAY MAY NOT CORRELATE WITH IQ: PREDICTION CHALLENGES OF IQ ASSESSMENT IN THE CHILD AND ADOLESCENT PSYCHIATRIC INPATIENT SETTING

Maria E. Reynoso, MD, Bronx-Lebanon Hospital Center, mreynoso@bronxleb.org; Robert Dugger, MD,