Stigma towards mental health treatment among college students: A test of an interactive

online educational intervention.

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Abstract

Adolescents and young adults have low rates of help-seeking despite high prevalence rates of mental health problems. College students may not choose to seek help because of the negative stigmatizing attitudes associated with mental illness. Education about mental illness and treatment and contact with people with mental health problems may improve negative stigmatization. The purpose of this study was to test the impact of an online interactive education intervention that utilizes avatars who depict individuals suffering from mental health problems in the context of a college environment on reduction of stigmatizing attitudes toward mental illness and help-seeking. Sixty college student participants were randomly assigned to either an online interactive education intervention that provided information on mental health problems via virtual interactions with avatars or to an online interactive education intervention that provided information and simulated interactions concerning tobacco use among minors. Participants completed measures of mental health treatment-seeking stigma prior to and after completing one of the two online interactive education interventions. Among this sample, the mental health intervention reduced public stigma and improved attitudes toward seeking help while the control intervention related to increased self-stigma toward seeking help. These findings suggest that interactive programs regarding mental health on college campuses may reduce public stigmatizing attitudes and encourage help-seeking. Future studies should include longer-term follow-up assessments and should include assessments of behavior (e.g., help-seeking, referring for help).

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online educational intervention.

Globally, rates of mental illness are high. According to the World Health

Organization (2014), one in four people will experience any mental illness (2001) while over

400 million people of all ages suffer from depression alone. In the United States, Wang,

Hausermann, and Weiss (2013) similarly reported that approximately 25% of the population

will suffer from a mental disorder at some point during their lifetime, with major depression

being highly prevalent at 12.8% lifetime prevalence. While mental illness effects all ages, it

is particularly important to consider adolescents and young adults, as the highest prevalence

of mental health problems is reported among 16-24 year olds (Kessler et al., 2007). In 2010

alone, one in ten college students contemplated suicide and between 1-2% of students made a

suicide attempt (Arria et al., 2011). Although the frequency at which college students

experience mental health concerns is high, they remain fairly unaware of how to manage

their symptoms and get help (Mendenhall, Frauenholtz, & Conrad-Hiebner, 2014). College

students may choose not to seek help for many reasons, oftentimes thinking they can manage

their problem on their own and having negative attitudes and beliefs about seeking help from

mental health services (Arria et al., 2011). It is also possible that young adults have little or

inaccurate information about mental health disorders (Mendenhall et al., 2014) or do not

know how or where to seek help.

Mental Health Literacy

First defined by Anthony Jorm in 1997, *mental health literacy* is the "knowledge and

beliefs about mental health disorders which aid their recognition, management, or

prevention" (pg. 182). Jorm et al.'s first study of mental health literacy was performed in

Australia. Interviews were conducted with residents aged 18-74 and were based on a vignette of a person described as having symptoms of either depression or schizophrenia. After reading the vignette, the participants were asked a series of open-ended questions such as what they thought was wrong with the person in the vignette and how the person could be best helped. Thirty-nine percent of participants correctly identified depression in the depression vignette, and 27% recognized schizophrenia in the schizophrenia vignette. These results suggested low levels of mental health literacy among adults and sparked efforts to raise public levels of mental health literacy in Australia to increase recognition of mental disorders and improve acceptability of treatment (Jorm et al., 1997). Such findings also triggered research by the United States' National Institute of Health to make mental health literacy a top priority beginning in 2000 (Mendenhall et al., 2014).

Mental health literacy contributes to the recognition of a problem, which is a necessary first step to seeking help. Failure to recognize signs of a mental disorder makes delay of help seeking more likely (Reavley & Jorm, 2011a). Mendenhall et al. (2014) found that less than half of adolescents could correctly identify depression or anxiety, although they were more likely to identify depression than any other disorder and even more so if depression was linked to suicidal ideation (Burns and Rapee, 2006). In a study by Reavley and Jorm in 2011(c) however, 73.5% of young adults ages 15 to 25 correctly labeled a vignette depicting a person with depression and 83.6% correctly identified depression with suicidal thoughts. These findings differ from those found by Jorm et al. in 1997. As both of these studies were performed in Australia, it is possible that improved recognition is due to public health efforts to increase mental health literacy since 1997, and/or the use of different participants (i.e. 15-25 year olds versus 18-74 year olds).

As mentioned earlier, mental health literacy may also relate to college students' help seeking habits. In 2012, Reavley, McCann, and Jorm performed a study that looked at 18-24 year olds in Australian tertiary education. They investigated recognition of depression, help-seeking intentions, and stigmatizing attitudes by giving the students vignettes of a 21 year old person described with symptoms of depression and asking a series of open-ended questions about recognition of the disorder and what they would do to seek help if they had the same concern. They found that over 80% of students said they would seek help if they had a similar problem to the person in the depression vignette. However, there was less agreement of where to seek help. Twenty-six percent of students reported they would seek help from a General Practitioner and only 10% from a counselor, whereas a combined 55% of students reported that they would seek help from a non-professional source (e.g. friends or family). These results suggest that teenagers and young adults are less likely to seek help from a professional source and may not get the help that they need.

Mental Health Stigma

Help-seeking behaviors are often negatively associated with stigmatizing attitudes. Stigma, especially mental health stigma, has two major types: public stigma and self-stigma. Public stigma refers to the stereotypes, prejudices, and discriminations the population has towards people with mental illnesses; awareness of public stigma may hinder people from seeking help. Self-stigma refers to the internalization of stereotypes and prejudices that may lower self-esteem and effects individual quality of life (Corrigan, 2004) as well as help-seeking. In 2011, Reavley and Jorm conducted a study in Australia focusing on stigmatizing attitudes toward people with mental disorders. A survey was sent to members of the community aged 15 and older that included randomized vignettes of either a male or female

described as experiencing one of six mental disorders (i.e., depression, depression with suicidal thoughts, early schizophrenia, chronic schizophrenia, social phobia, and post-traumatic stress disorder). Participants were then asked to rate statements that assessed their personal attitudes towards the person in the vignette and statements that assessed their beliefs about other people's attitudes toward the person in the vignette. Just over half of respondents who read the depression vignette and 58.7% of those who read the depression with suicidal thoughts vignette personally thought that people with the described problems would be unpredictable. When asked about what they thought others believed, over 70% for each condition reported that people would not tell others if they had the problem and that others would not hire a person with the problem. They also looked at stigmatizing attitudes as a function of gender and found that when the person in the vignette was a male, he was generally seen as more dangerous, and the participants reported they would want more social distance from the male than the female vignette protagonist. Negative and stigmatizing attitudes may keep people from seeking help for mental health concerns, especially given 53% of one sample believed others see depression as a personal weakness (Reavley and Jorm, 2011b).

It is important for college students to recognize stigmatizing attitudes as these attitudes are one of the most common barriers to receiving treatment (Arria et al., 2011). Pedersen and Paves (2014) examined the differences between perceived public stigma and personal stigmatizing attitudes toward seeking mental health treatment among a group of United States college students. The participants were given a survey and rated (from strongly agree to strongly disagree) statements regarding their beliefs about how others would view them if they were to seek mental health treatment and statements regarding how they would

view another person at their school who had decided to seek mental health treatment. They were then asked about their previous mental health treatment experience and attitudes about mental health treatment. About one-third of participants thought that they would be viewed negatively for seeking treatment, and one-fourth stated that they would view someone else negatively for seeking treatment. Female participants and those who reported depression symptoms, believed others would view them more negatively for seeking help than they would view others, or themselves. While there may be a gap between personal and public perceptions of stigma, Pedersen and Paves' study suggests that personal attitudes toward mental health treatment are not universal.

Stigma-Reduction Interventions

Negative stigmatizing attitudes may be changed by interventions and resources intended to increase education about mental illness and treatment. Saporito, Ryan, and Teachman (2011) studied the effectiveness of mental health stigma-reduction interventions in high school students ages 15-19. A 35-minute interactive presentation was given to 80 students that covered basic information about mental illness in general, mental illnesses commonly diagnosed in adolescence, and common treatments. The mental illness educational intervention was compared to control intervention that reviewed information on tobacco smoking with 76 students. Saporito et al. (2011) found that following the intervention, the experimental participants had more positive attitudes towards mental health and mental health treatment than the control participants. The experimental group also reported being more willing to seek treatment. However, the intervention was relatively more effective for participants in the experimental condition who had previously reported a past or current treatment history for mental illness. Participants with a prior or current history of mental

illness also requested more treatment information than participants with no history regardless of condition.

Increasing education by providing facts about mental illness is only one way to decrease stigmatizing attitudes. Along with education, Corrigan and Penn (1999) found that protest and contact are also effective ways of reducing stigma. Protest increases education about stigmatizing attitudes by contesting inaccurate attitudes of mental illness and encouraging people to stop spreading and believing myths related to mental illness. Contact also changes attitudes by showing people with stigmatizing attitudes that people with mental illness can live normal lives and are not defined by their illness. Both practices have been found to change attitudes toward people with mental illness, although education and contact have been more effective than protest especially when used together (Corrigan & Penn, 1999; Michaels et al., 2012). Corrigan et al. (2002) found that education resulted in some positive benefits (e.g., reductions in stigmatizing attitudes and increased helping behaviors), but that contact with people with mental illness had an even greater impact on stigma reduction among a sample of college students.

The benefits of education are correlated with the type of information given to the participant. Corrigan, Watson, Warpinski, and Garcia (2004) randomly assigned college students to participate in one of three scripted education programs: education about mental illness and violence program, education about mental illness and stigma program, or a control program not pertaining to mental illness. Immediately before the program, immediately after the program, and one week later, the participants were presented with a neutral statement about a man with schizophrenia and completed the Attribution Questionnaire which measured responses to various factors such as dangerousness, fear, and

avoidance. In the education about violence group, participants were more likely to view people with mental illness in general as dangerous and reported more negative attitudes toward them from pre-test to post-test and from the post-test to the follow-up test. In the education about stigma group, participants reported being more willing to help a person with mental illness and reported a decrease in negative attitudes across time. Across groups, participants in the education about violence group reported higher rates of fear and avoidance toward people with mental illness than the education about stigma and control groups. Overall, stigma-reducing interventions not only decrease negative beliefs and attitudes toward mental illness but may also increase willingness to seek help, (Saporito et al., 2011).

Present Study

The aim of the present study was to test the impact of an online interactive education intervention on attitudes toward help-seeking. The intervention uses virtual interactions between college student avatars to provide information on mental illness and to teach students how to intervene and refer people to mental health treatment. The intervention uses both education and contact, consistent with Corrigan and Penn's (1999) recommendations, and is easily disseminated via an online platform. It was hypothesized that college students randomly assigned to the interactive online mental illness education intervention would report lower stigmatizing attitudes toward mental illness treatment and increased help-seeking attitudes relative to participants randomly assigned to a control intervention in pre-post comparisons.

Methods

Participants

Participants ($N = 60$) were an average age of 18.967 ($SD = 1.48$) and the majority ($n = 48$, 80%) were female. More than half of participants were college freshmen (58.3%) and reported they had contact with a friend or relative who has had a mental health concern ($n = 41$, 68.3%) This research was approved by the university's Institutional Review Board on September 22, 2015 (see Appendix A). Additional demographic information is presented in Table 1.

Measures

Demographics Questionnaire Participants were asked questions about their demographics including age, gender, and year in school. They were also asked if they have a current or past mental health diagnosis or treatment, and if they have had any contact with a friend or relative with a mental illness (see Appendix B).

Attitudes toward Seeking Professional Psychological Help (ATSPPH; Fischer & Farina, 1995) is a 10-item scale that assesses a person's attitude toward seeking professional help. Participants rate statements such as "I would want to get psychological help if I were worried or upset for a long period of time" on a scale of 1 (Disagree), 2 (Partly Disagree), 3 (Partly Agree), or 4 (Agree). Higher scores indicate more positive attitudes towards seeking professional help (see Appendix C); total scores represent a sum and range from 10 to 40. The present version of the ATSPPH is a shortened version of the original 29-item scale developed by Fischer and Turner (1970); the 10-item version has been found to have an internal consistency ranging from 0.82 to 0.84 and test-retest reliability of 0.80 (Fischer &

Farina, 1995). Internal consistency of the ATSPPH, both pre and post-intervention, in the present study was alpha = 0.83.

Self-Stigma of Seeking Help (SSOSH; Vogel, Wade, & Haake, 2006) measures the extent to which a person's seeking professional or psychological help would alter self-perception (e.g., self-regard, self-confidence). Participants rate 10 items on a scale of 1 ("Strongly Disagree") to 5 ("Strongly Agree"). These statements vary from "I would feel inadequate if I went to a therapist for psychological help" to "My self-esteem would increase if I talked to a therapist" (see Appendix D). Scores are summed (with some items being reverse-coded) and range from 10 to 50 with higher scores indicating greater self-stigma relative to seeking professional help. Internal consistency was found to be 0.89 and support for validity was found with positive association with scores on independent measures of the risks and benefits associated with seeking treatment. Internal consistency of the SSOSH in the present study was adequate at alpha = 0.91 (both pre and post intervention).

Perceptions of Stigmatization by Others for Seeking Help (PSOSH; Vogel, Wade, & Ascheman, 2009) measures the perceptions of stigmatizing attitudes anticipated by others for seeking psychological help (see Appendix E). The PSOSH consists of 5 items that follow the statement, "Imagine you had an emotion or personal issue that you could not solve on your own. If you sought counseling services for this issue, to what degree do you believe that the people you interact with would _____". Participants then rate statements such as "React negatively to you" and "Think you posed a risk to others" on a scale of 1 ("Not at all") to 5 ("A great deal"). Scores represent sums across the 5 items and range from 5 to 25 with higher scores indicating more negative attitudes anticipated by others relative to seeking professional help. The internal consistency was found to be 0.84 and test-retest reliability

was found to be 0.77 (Vogel et al., 2009). Internal consistency was alpha = 0.89 pre-

intervention and alpha = 0.94 post-intervention in the present study.

Procedure

The sample of study participants were recruited from Appalachian State University's

psychology department undergraduate research pool which is administered using an online

system called SONA. Participants who chose to participate in the current study from among

other options were connected to an online survey presented on Qualtrics.

Via the online platform, participants were informed that participation was voluntary

and then viewed the consent form (see Appendix F). Participants gave consent by continuing

with the study rather than providing an online signature to maintain anonymity. After

consenting to participate in the study, all participants completed a series of questionnaires

including the demographics questionnaire, ATSPPH, SSOSH, and PSOSH. All

questionnaires except the demographics questionnaire were presented in a random order.

Participants were then randomly assigned to one of two conditions: 1) intervention

condition: online educational program about mental illness and help-seeking; or 2) control

condition: online educational program about tobacco use and sales among minors. The online

interactive educational interventions were created by Kognito and are approximately 30

minutes in length. Via Kognito, users enter a virtual environment and engage in a series of

interactive exercises, including simulated conversations with virtual student avatars. In the

mental illness intervention condition, participants interacted with virtual student avatars who

exhibit signs of psychological distress including anxiety and depression. The online

intervention was found to increase identification of psychological distress and motivation to

seek help among a sample of 270 higher education students (Albright, Goldman, & Shockley,

2013) across a 3-month follow-up. Kognito also supplied the control education intervention concerning tobacco use and sales among minors. The control intervention was similar to the experimental intervention in length and appearance (e.g., similar graphics, avatars, interactive) but differed in content. After completing one of the two Kognito interventions, all participants again completed the questionnaires (again in a random order), minus the demographics questionnaire.

A two (condition: experimental vs. control) by two (pre-post) mixed-model design was employed. Intervention condition served as the between subjects variable and time (pre-post) served as the within subjects variable. Attitudes toward seeking help as well as perceptions of self-stigma and public stigma related to help-seeking served as dependent variables.

Results

Three separate Analyses of Variance (ANOVAs) were conducted on pre-intervention SSOSH, PSOSH, and ATSPPH scores using condition (experimental vs. control) as the independent variable to ascertain success of random assignment. Consistent with random assignment, there were no significant differences between conditions on the three dependent variables pre-intervention (all p's > 0.72). Two-tailed Pearson correlations were calculated between the SSOSH, PSOSH, and ATSPPPH scores at pre-intervention. SSOSH and PSOSH did not relate significantly with one another at pre-intervention, $r = 0.12$, $p = .392$. A significant negative correlation was found between pre-intervention SSOSH and ATSPPH scores, $r = -0.73$, $p < .001$, but not between pre-intervention PSOSH and ATSPPH scores, $r = -0.20$, $p = .156$.

A mixed-model Analysis of Variance (ANOVA) with condition (experimental vs. control) as the between subjects variable and time (pre vs. post) as the within subjects variable was conducted on the SSOSH scale to assess for changes across time as a function of the intervention. There was a significant condition x time interaction, $F(1, 55) = 17.13$, $p < .001$, $\eta_p^2 = .237$. Contrary to the hypothesis, perceptions of self-stigma related to seeking psychological help did not change significantly between pre and post assessment in the experimental mental health education condition, $t(28) = 1.45$, $p = .156$. Perceptions of self-stigma did, however, increase across time in the control condition, $t(27) = 38.3$, $p = .001$. Descriptive statistics for the SSOSH scale are in Table 2.

A similar mixed-model Analysis of Variance (ANOVA) with condition (experimental vs. control) as the between subjects variable and time (pre vs. post) as the within subjects variable was conducted on the PSOSH scale to assess for changes across time as a function of the intervention. Again, there was a significant condition x time interaction, $F(1, 58) = 9.92$, $p = .003$, $\eta_p^2 = .146$. Consistent with the hypothesis, perceptions of public stigma related to seeking psychological help decreased significantly between pre and post assessment in the mental health education condition but not in the control condition. Descriptive statistics for the PSOSH scale are shown below in Table 3.

Finally, a mixed-model Analysis of Variance (ANOVA) with condition (experimental vs. control) as the between subjects variable and time (pre vs. post) as the within subjects variable was conducted on the ATSPPH scale to assess for changes across time as a function of the intervention. Again, there was a significant condition x time interaction, $F(1, 49) = 6.15$, $p = .017$ $\eta_p^2 = .111$. Consistent with the hypothesis, positive attitudes towards seeking professional psychological help increased significantly between pre and post assessment in

the mental health education condition relative to the control condition. Descriptive statistics

for the ATSPPH scale are presented in Table 4.

Discussion

The purpose of the present study was to examine the impact of an online mental

health educational intervention program on stigma-reduction relative to seeking help for

mental health problems in college students. Participants who completed the mental health

education intervention reported lower anticipated stigma from others related to seeking

mental health help and reported an increase in positive attitudes toward seeking professional

help after the intervention compared to before the intervention. The intervention did not

result in changes across time on reports of self-stigma related to seeking help, but those in the

control condition reported an increase in negative attitudes toward the self in response to

seeking mental health services.

As predicted, the online interactive education intervention used in this study resulted

in decreased negative attitudes anticipated by others if seeking help for mental health

problems. In addition, the mental health intervention resulted in more positive attitudes about

treatment seeking in college students compared to those assigned to the control condition.

The current intervention employed both education, by providing information on mental

illness and treatment, and contact, through virtual interactions with student avatars. Corrigan

and Penn (1999) reported that when used together, education and contact are most effective

at changing attitudes because they allow a person to use the information they have about

mental illness to directly interact with a person who has a mental health concern. Schulze,

Richter-Qerling, Matschinger, and Angermeyer (2003) found similar results from their study.

They implemented an interactive intervention with high school students that focused on

education and contact with an adolescent who had schizophrenia. Compared to the control intervention, the interactive intervention reduced negative stereotypes and increased the participant's willingness to engage with people that have schizophrenia from pre-intervention to post-intervention and the effects still held true one month after the intervention. Similarly, Thombs, Reingle Gonzalez, Osborn, Rossheim, and Suzuki (2014) used an interactive program with college campus Resident Assistant's (RA's) designed to teach mental health first aid and communication with their residents. Those who participated in the interactive program, versus those who had not, reported more interventions with their residents and reported making more referrals to a counseling service regarding substance abuse, alcohol, and mental health.

The current study found that the online mental health intervention resulted in decreased negative public stigmatizing attitudes while the control condition increased negative self-stigma attitudes. In previous studies, self-stigma was found to be significantly and negatively related to attitudes toward help-seeking, where public stigma was not (Topkaya, 2014). A person with high self-stigma may have more negative attitudes toward seeking help, as they find greater risks and fewer benefits to seek treatment (Hackler, Vogel, & Wade, 2010). Baseline correlations in the present study were similar; self-stigma related negatively and significantly with attitudes toward help-seeking whereas public stigma did not significantly correlate with attitudes toward help-seeking. In the current study, however, attitudes for self-stigma actually increased across time in the control condition and did not decrease among participants assigned to the mental health intervention. This may be because the interactions between virtual avatars in the mental health intervention emphasize external stigmatizing attitudes towards other people and not toward the self while interactions in the

control intervention focus on more internal consequences of selling tobacco to a minor. Another possibility may be that a majority of the participants (68.3%) reported having prior contact with a friend or relative with a mental health concern while only 21.7% of participants had a mental health concern themselves which could contribute to decreased attitudes of public stigma, not self-stigma, from the mental health intervention.

The results for attitudes towards help-seeking showed that there was an increase in positive attitudes, but these attitudes do not necessarily predict help-seeking behavior. Although it is difficult to distinguish a relationship between attitudes towards help-seeking and help-seeking behavior, Elhai, Schweinle, and Anderson (2008) examined the validity of the ATSPPH and found that college students who were recent mental healthcare users had higher scores on the ATSPPH scale. They also found a link between higher ATSPPH scores and intentions to seek treatment.

This study may have future implication for how mental health concerns are dealt with on college campuses. The goal of the current study was to combine education about mental health and treatments with contact with people having a mental health concern in order to decrease stigmatizing attitudes toward treatment seeking using an online interactive education intervention that was readily accessible to students on campus. Results showed that after completing the intervention about mental health, compared to the control intervention about tobacco use and sales in minors, perceptions of stigmatizing attitudes people anticipate by the public for seeking help decreased and positive attitudes toward help-seeking increased. This can be substantial in that by giving college students access to these interventions, or by encouraging use of them if already accessible, it may motivate college students to seek help for possible mental health concerns

Attitudes toward seeking help and perceptions of how the public will perceive getting treatment for a mental health concern are consistent with two of the three determinants of behavioral intention proposed by Icek Ajzen's Theory of Planned Behavior (TPB, 1991), with the third determinant being the perceived difficulty in performing the behavior (Ajzen, 1991). These two determinants, combined with perceived difficulty performing the behavior, have been used to predict and explain behavioral intention. Mo and Mak (2009) used the TPB to look at intentions of help-seeking and found that of the three determinants, a positive attitude towards seeking mental health treatment was a strong predictor of the intention to seek help. However, in order to fully understand the effectiveness of an intervention, a longitudinal follow-up must be done to examine whether the effects of the intervention are lasting and truly reduce stigmatizing attitudes and if attitudes and intention relate to behavior.

While this study had many strengths such as random assignment and use of reliable and valid measures, a major limitation was the use of a pre-post design. A follow-up survey would allow for assessment of stigmatizing attitudes toward mental health treatment across time. Another important limitation to consider is that behavior was not investigated in the current study. Even though there were increased positive attitudes towards seeking help, it is not known if college students would act upon those attitudes or whether they would refer others to seek help.

Future research should focus on ways to change a person's attitudes of self-stigma as it relates to mental health help-seeking, as the current mental health intervention did not have an effect on self-stigma while it was increased after the control intervention. Future research could also look at the relationship between attitudes toward help-seeking and help-seeking behavior. Despite these limitations, the current study shows promise for the future of mental

illness on college campuses by providing support for use of an easily accessible interactive

intervention to reduce public stigma and increase positive attitudes towards seeking help.

Table 1. *Descriptive Demographic Statistics*

	n (%)
Age	
18	32 (53.3)
19	15 (25.0)
20	4 (6.7)
21	6 (10.0)
22	1 (1.7)
24	1 (1.7)
25	1 (1.7)
Gender	
Female	48 (80.0)
Male	10 (16.7)
Chose not to answer	2 (3.3)
Academic Year	
Freshman	35 (58.3)
Sophomore	12 (20.0)
Junior	8 (13.3)
Senior	5 (8.3)
Previous diagnosis of mental health concern	
Yes	13 (21.7)
No	47 (78.3)
Current or previous treatment for mental health concern	
Yes	15 (25.0)
No	45 (75.0)
Contact with friend/relative with mental health concern	
Yes	41 (68.3)
No	19 (31.7)

Table 2. *Descriptive statistics for SSOSH*

	Pre-Intervention *M (SD)*	Post-Intervention *M (SD)*
SSOSH		
Mental Health Condition	22.690 (7.016)	21.655 (6.914)
Control Condition	22.607 (8.052)	32.500 (5.790)

Table 3. *Descriptive statistics for PSOSH.*

	Pre-Intervention *M (SD)*	Post-Intervention *M (SD)*
PSOSH		
Mental Health Condition	7.933 (3.999)	6.633 (3.358)
Control Condition	7.600 (2.978)	8.067 (3.393)

Table 4. *Descriptive statistics for ATSPPH.*

	Pre-Intervention M (SD)	Post-Intervention M (SD)
ATSPPH		
Mental Health Condition	28.769 (6.095)	31.577 (4.225)
Control Condition	28.120 (6.261)	28.200 (6.922)

Appendix A

IRB Approval Letter

Appalachian
STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD
Office of Research Protections
ASU Box 32068
Boone, NC 28608
828.262.2692
Web site: http://researchprotections.appstate.edu/
Email: irb@appstate.edu

To: Megan Goetzl
Psychology
EMAIL

From: Dr. Andy Shanely, Institutional Review Board Deputy Chairperson
Date: September 22, 2015
RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Study #: 16-0064

Study Title: Interactive online educational programs
Submission Type: initial
Expedited Category: 7. Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.
Approval Date: September 22, 2015
Expiration Date of Approval: September 21, 2016

The Institutional Review Board (IRB) approved this study for the period indicated above. The IRB found that the research procedures meet the expedited category cited above. IRB approval is limited to the activities described in the IRB approved materials, and extends to the performance of the described activities in the sites identified in the IRB application. In accordance with this approval, IRB findings and approval conditions for the conduct of this research are listed below.

The IRB determined that this study involves minimal risk to participants.

The IRB waived the requirement to obtain a signed consent form for some or all subjects because the only record linking the subject and research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern.

Approval Conditions:

Appalachian State University Policies: All individuals engaged in research with human participants are responsible for compliance with the University policies and procedures, and IRB determinations.

Principal Investigator Responsibilities: The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

Modifications and Addendums: IRB approval must be sought and obtained for any proposed modification or addendum (e.g., a change in procedure, personnel, study location, study instruments) to the IRB approved protocol, and informed consent form before changes may be implemented, unless changes are necessary to eliminate apparent immediate hazards to participants. Changes to eliminate apparent immediate hazards must be reported promptly to the IRB.

Approval Expiration and Continuing Review: The PI is responsible for requesting continuing review in a timely manner and receiving continuing approval for the duration of the research with human participants. Lapses in approval should be avoided to protect the welfare of enrolled participants. If approval expires, all research activities with human participants must cease.

Appendix B

Demographics Questionnaire

Age: _____

Gender: Female
          Male
          Transgender

Academic Year at ASU: Freshman
                        Sophomore
                        Junior
                        Senior

Are you now, or have you ever been, diagnosed with a mental health concern?   Yes
                                                                                  No

Are you currently seeking, or have you ever sought, treatment for a mental health concern?
                                                                                  Yes
                                                                                  No

Have you ever had any contact with a friend or relative who has a mental health concern?
                                                                                  Yes
                                                                                  No

Appendix C

Attitudes Toward Seeking Professional Psychological Help

1 = Disagree 2 = Partly disagree 3 = Partly agree 4 = Agree

1. If I believed I was having a mental breakdown, my first inclination would be to get professional attention.

2. The idea of talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts.

3. If I were experiencing a serious emotional crisis at this point in my life, I would be confident that I could find relief in psychotherapy.

4. There is something admirable in the attitude of a person who is willing to cope with his or her conflicts and fears without resorting to professional help.

 5. I would want to get psychological help if I were worried or upset for a long period of time.

6. I might want to have psychological counseling in the future.

7. A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with professional help.

8. Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me.

 9. A person should work out his or her own problems; getting psychological counseling would be a last resort.

10. Personal and emotional troubles, like many things, tend to work out by themselves.

Appendix D

Self-Stigma of Seeking Help

INSTRUCTIONS: People at times find that they face problems that they consider seeking help for. This can bring up reactions about what seeking help would mean. Please use the 5 point scale to rate the degree to which each item describes how you might react in this situation.

1 = Strongly Disagree 2 = Disagree 3 = Agree & Disagree Equally 4 = Agree 5 = Strongly Agree

1. I would feel inadequate if I went to a therapist for psychological help.
2. My self-confidence would NOT be threatened if I sought professional help.
3. Seeking psychological help would make me feel less intelligent.
4. My self-esteem would increase if I talked to a therapist.
5. My view of myself would not change just because I made the choice to see a therapist.
6. It would make me feel inferior to ask a therapist for help.
7. I would feel okay about myself if I made the choice to seek professional help.
8. If I went to a therapist, I would be less satisfied with myself.
9. My self-confidence would remain the same if I sought professional help for a problem I could not solve.
10. I would feel worse about myself if I could not solve my own problems.

Items 2, 4, 5, 7, and 9 are reverse scored.

Appendix E

Perceptions of Stigmatization by Others for Seeking Help

INSTRUCTIONS: Imagine you had an emotional or personal issue that you could not solve on your own. If you sought counseling services for this issue, to what degree do you believe that the people you interact with would _____.

1 = Not at all 2 = A little 3 = Some 4 = A lot 5 = A great deal

1. React negatively to you
2. Think bad things of you
3. See you as seriously disturbed
4. Think of you in a less favorable way
5. Think you posed a risk to others

Scoring: add items 1-5.

Appendix F

Informed Consent Statement

You are invited to participate in a research project about how education interventions relate to attitudes in college students. You will be asked to answer a number of questions related to you and your experiences. You may need to login to the online educational intervention separately. This online survey and education intervention should take about 60 minutes to complete.

Participation is voluntary, and no identifiable information about you will be collected. Even the researchers will not know your individual answers to questions. However, due to the nature of internet access, the security of your survey responses cannot be 100% guaranteed. In an attempt to further protect your responses, you are encouraged to complete the survey in a private location and to use headphones for the online educational component.

While you may or may not find a direct benefit, we hope that this research will contribute to the body of knowledge regarding the impact of interactive online educational programs. The data from this survey will be used as part of a research study and will have the potential to be published and be used for professional presentations. You will never, personally, be identified as participating in this research project.

Though it is not believed that the online educational program or completion of the questionnaires will pose a risk greater than that experienced in everyday life, there is a possibility that some items could cause mild self-discomfort. If you experience emotional distress, you should contact the ASU Counseling Center at (828) 262-3180.

You will not be paid for your participation in this study. However, you can earn two (2) ELC credits for your participation. There are other research options and non-research options for obtaining extra credit or ELC's. A non-research participation option to receive one (1) ELC is to read an article and write a 1-2 page paper summarizing the article and your reaction to the article. More information about this option can be found at psych.appstate.edu/research. You may also wish to consult your professor to see if other non-research participation options are available.

Your participation in this study is voluntary, and you may refuse to participate without penalty. If you decide to participate, you may withdraw from the study at any time.

If you have any questions about the research, please contact the Principal Investigator, Megan Goetzl, via email at goetzlmb@appstate.edu or the faculty advisor, Dr. Lisa Curtin at curtinla@appstate.edu. Questions regarding the protection of human subjects may be addressed to the IRB Administrator, Research and Sponsored Programs, Appalachian State University, Boone, NC 28608, (828) 262-2692, irb@appstate.edu.

This research project has been approved on September 22, 2015 by the Institutional Review Board (IRB) at Appalachian State University. This approval will expire on September 21, 2016 unless the IRB renews the approval of this research.

By continuing on to the survey and educational website, you acknowledge you are at least 18 years old, have read and agree to the descriptions and terms outlined in this consent form, and voluntarily agree to participate in this research.

If you wish to participate please click the button below.

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