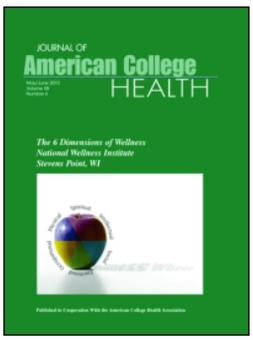

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MAJOR ARTICLE

Making mental health a priority on college campuses: implementing large scale screening and follow-up in a high enrollment gateway course

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ABSTRACT

Objectives: We sought to evaluate a universal mental health screening program for undergraduate students using graduate student clinicians and online interviewing tools. **Participants:** Participants included 455 undergraduate students. Data were collected from October 2017 through January 2018. **Methods:** Participants completed a self-report mental health screening questionnaire. Students scoring "at risk" on any subscale were invited to participate in individual online follow-up interviews to assess risk level and provide referral information. **Results:** A majority of participants scored in an "at risk" range on at least one subscale. Follow-up interviews were conducted for 40% of students "at risk" and 33% of those interviewed were referred to the university counseling center. Participants' perceptions of campus mental health priorities improved over a three-month period. **Conclusions:** A pilot universal campus mental health screening using graduate student clinicians resulted in a meaningful number of referrals and enhanced perception that the university cared about student mental health.

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College counseling center; graduate training; mental health; online screening; screening

Introduction

Mental health on college campuses has increasingly become a topic of national interest. University counseling center directors reported that among the college students who seek out services, 51% are affected by anxiety, 41% are affected by depression, and 34% struggle with relationship issues.[1] In addition, among the students who received campus counseling services, 24.5% reported taking psychotropic medications.[2] Seventy percent of counseling center directors reported the number of students with severe psychological problems being much higher than the previous year,[2] and 19% of directors described the availability of psychiatric services as inadequate due to high demand.[2] Alarmingly, the majority of students are not receiving mental health services despite high levels of distress. For example, 80% of students who die by suicide have never used their campus counseling center.[3]

The Healthy Minds Study spanning from 2007 to 2013 examined mental health needs and service utilization on college campuses.[3] This study revealed that across 72 colleges ($n = 42{,}210$), 18.2% of students screened positive for depression, 10.1% for anxiety, 7.8% reported serious thoughts of suicide, and 16.5% reported non-suicidal self-injury in the previous year.[3] Of the students surveyed, 34.4% had at least one of the listed mental health problems.[3] However, among students who had identifiable mental health concerns, less than half of them (39.4%) reported receiving treatment.[3] These numbers suggest that although students are experiencing significant mental health problems, a majority of them are not seeking or receiving help. Eisenberg et al found similar results with 32% of college students endorsing symptoms compatible with a mental health diagnosis while 64% of those who were symptomatic did not report receiving mental health treatment.[4] A variety of factors could contribute to why students do not seek treatment. Common barriers to help-seeking include both personal variables (eg stigma, privacy, and a lack of perceived need) and system-related variables (eg affordability, availability and accessibility).[5,6]

College campus counseling centers have been found to be extremely helpful in assisting students, but the students who receive those services are typically self-referred.[7] Many college campuses provide mental health screenings and have utilized online forums and social media to reach more students. However, in these screening events focused on outreach and education participants are still self-referred.[8] One way to increase awareness of the potential need for mental health services among students is to implement universal screening programs where all students are provided with an opportunity to engage in mental health screening and receive appropriate feedback. Dowdy et al argue that universal screening for complete mental health should be brought to the front of the delivery system, in order to emphasize prevention and early intervention.[9] While universal screening could be an excellent way to reach the whole college population rather than the small percent of students who

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actively seek help, there are obstacles to implementation related to resources in terms of time, facilities, and personnel.

Two potential ways to alleviate the high-resource demand of universal screening include (1) utilizing graduate students enrolled in mental health training programs to assist in implementing universal screening, and (2) using technology to conduct confidential, individual screening interviews. As stated by Furr, training graduate students and allowing them the opportunity to gain practical experience is a cost-effective way to increase the possibility that university counseling centers can offer services without experiencing further burden on limited resources.[10] Furr discusses the benefits of having counseling and psychology students intern at university counseling centers to gain first-hand experience, while also allowing the center to serve more clients.[10] In addition, Rodriguez et al discussed the importance of experiential learning for clinical psychology students.[11] Therefore, involving graduate students in universal screening activities would be both beneficial to the graduate students themselves and reduce the need for further university resources.

Additionally, the use of online tools to conduct confidential individual mental health screening interviews has the potential to reduce the resource demands for institutions (eg finding numerous rooms for individual meetings) and increase the likelihood that students would participate by providing flexible appointment times for virtual meetings that can be conducted anywhere (eg in a student's own dorm room or apartment). The main concerns related to the provision of any online mental health services are related to crisis management and confidentiality.[12,13] To safeguard confidentiality, software and programs must be utilized that have been specifically developed to be HIPAA compliant and protect confidentiality. In terms of crisis management, there is some evidence to suggest that crisis situations can be effectively resolved using online formats when trained clinicians ask detailed questions and have resources readily available to support their clients.[14] In addition, recent evaluations of online therapy suggest that people report equal benefit from participating in online therapy compared to traditional therapy,[14] suggesting that online screening tools may also be effective.

The high rate of mental health concerns among students combined with the relatively low rate of self-referrals to campus counseling centers suggests the need for universal screening programs. The current study sought to pilot a universal screening program utilizing graduate student clinicians and online individual follow-up interviews for "at risk" students. It was hypothesized that approximately 30% of students would score in an "at risk" range on at least one subscale of a mental health screening tool, consistent with prior research suggesting levels of students suffering from symptoms consistent with a mental health diagnosis.[3,4] Additionally, it was hypothesized that individuals who participate in a mental health screening would have more positive perceptions of mental health on their campus than individuals who do not participate.

Methods

Participants

A total of 455 participants (M_{Age} = 19.04 years, SD_{Age} = 1.91) were included in the study. In terms of gender identification, 58.7% ($n = 267$) self-identified as "female", 40.7% ($n = 185$) as "male", less than 1% ($n = 2$) as "gender non-conforming", and less than 1% ($n = 1$) did not report gender identity. A total of 86.2% ($n = 392$) participants self-identified as White, 5.5% ($n = 25$) as Other, 4.6% ($n = 21$) as Black, and less than 1% ($n = 4$) did not report ethnicity. Fewer than 10 students in the study identified as Korean, "other Asian", Chinese, Filipino, Asian Indian, or American Indian or Alaskan Native. An additional question inquired about Hispanic origin. Of the 455 participants, 92.5% ($n = 421$) did not identify as being of Hispanic origin while 7.5% ($n = 34$) did identify as being of Hispanic origin. Participants were enrolled in two sections of Introductory Psychology at a large Midwestern University. One course section was assigned to be the experimental group ($n = 247$) which had a 95% participation rate out of a total of 261 students, and the other course section was assigned to be the control group ($n = 208$) which had a 75% participation rate out of a total of 279 students. There were no significant differences in terms of demographic variables between participants in the experimental class and those in the control class. Both courses were taught by faculty who were licensed clinical psychologists, and both used a shared syllabus with identical course structures and assignments/grading. Participants received credit toward a course research requirement for their participation in the study. Those who participated in the screening component received one unit of research credit while those who participated in the follow-up interview received an additional one unit of research credit (students are required to complete six units for their class).

Measures

Counseling Center Assessment of Psychological Symptoms-62

The Counseling Center Assessment of Psychological Symptoms-62 (CCAPS-62) was utilized as the main self-report screening tool to assess potential areas of mental health concern. The CCAPS-62 is a screening tool that was developed specifically for a college student population in order to provide a valid and reliable measure that could assess multiple symptoms to provide a comprehensive assessment.[15] Each of the CCAPS-62 subscales (depression, generalized anxiety, social anxiety, academic distress, eating concerns, family distress, hostility, substance use) was more highly correlated with a preexisting measure of the same construct than the other constructs,[15] supporting the utility of this screening tool as a multidimensional method to assess common problems in college students. Internal consistency of the CCAPS-62 has also supported the reliability of this measure, with Cronbach's alpha (α) subscale scores of the following: depression $\alpha = 0.92$, generalized anxiety

$\alpha = 0.85$, social anxiety = 0.84, academic distress $\alpha = 0.82$, eating concerns $\alpha = 0.90$, family distress $\alpha = 0.83$, hostility $\alpha = 0.86$, substance use $\alpha = 0.84$.[15]

Due to the nature of a large group screening, four critical items identified by the creators of the CCAPS-62 were removed from the initial screening. These critical items include the questions "I lose touch with reality", "I have thoughts of ending my life", "I am afraid I may lose control and act violently" and "I have thoughts of hurting others". Affirmative answers to these items would require immediate follow-up, which was not possible in a large group format. After extensive consultation with staff and faculty representing university counsel, risk management, institutional research, and administration, the following course of action was taken. First, these four critical items were removed from the initial screening and replaced with a single item that stated "I am in significant distress and would like to speak to someone today." Students who endorsed this item were instructed to go to a room in the same building where they would be met by a mental health professional. However, no participants who endorsed this item ($n = 5$) arrived at the room. Instead, each individual was contacted via email and/or phone to determine the immediacy of their needs and was referred to the counseling center if necessary.

Perception of Mental Health Care on Campus Questionnaire (PMHCCQ)

The PMHCCQ consists of 6 questions developed specifically for the current study to evaluate student perceptions of mental health care on campus. One potential positive outcome related to universal mental health screening is communicating to students that mental health is a campus priority. Therefore, we developed the PMHCCQ to evaluate student perceptions over time. For example, students were asked to rate the following items: "I believe that my campus cares about student mental health" and "I feel comfortable talking about issues of mental health on campus." Each question was answered using a 7-point Likert type scale where 1 = strongly disagree and 7 = strongly agree. Students completed the PMHCCQ during the initial screening phase and 3 months after the initial screening.

Follow-up phase interview questions

For each subscale of the CCAPS-62, semi-structured follow-up interview questions were developed. For example, if a participant had an elevated score on the "family distress" subscale, they would be asked a series of questions including "Can you describe any current family stressors you are experiencing?" "What kind of resources do you have to deal with it?" and "Do you feel like this is impacting other areas of your life?" The interview questions were developed to assist the graduate student clinicians in making informed decisions about risk level and appropriate referrals.

Procedure

Graduate student training

Second year students ($n = 6$) in the clinical psychology Master's program at this large Midwestern university served as graduate student clinicians in the study. These graduate student clinicians had already received training on privacy and confidentiality during programmatic coursework. Each graduate clinician attended a 3-hour training workshop. Training consisted of teaching graduate clinicians how to use the technology (eg online calendar, texting application, and Skype for Business), familiarization with the screening tools, and practice making risk assessments using the university counseling center's established triage form. In addition, the graduate student clinicians engaged in "mock" follow-up interviews to practice administering each set of follow-up questions.

Screening phase

Before beginning the screening phase of this study, approval was received from the Institutional Review Board. Participants in the control group completed a consent form, demographics questionnaire, and the PMHCCQ. These participants in the control group did not complete the screening questionnaire. Participants in the experimental group were first provided with a printed informed consent form and a verbal description of the study during the last 25 minutes of a regularly scheduled Introductory Psychology course. The informed consent detailed that confidentiality would be maintained for participants except in cases which the student disclosed a plan to harm themselves or others or information about known or suspected child abuse and elder abuse due to mandated reporting laws. In addition, the participants were provided with a verbal explanation of confidentiality and the limits thereof. After completing the informed consent, participants completed a packet containing demographic questions, the modified CCAPS-62, and the PMHCCQ. The paper packet students received had two columns on each page with the study questionnaires in the left column and multiple choice psychology review questions in the right column. Students entered their answers to the questions via their student response systems (ie clickers). Students who chose not to participate in the study were asked to complete the review questions so that no one could identify which individuals were participating in the study.

Follow-up phase

After the screening phase, any participant who scored in the "high distress" range on any of the 8 subscales was contacted via text message to participate in the follow-up phase of the study. Graduate student clinicians utilized an online calendar and texted the link to each participant so they could sign up for a convenient time. If a participant did not respond to the initial text, the researcher sent up to two additional text messages, and then attempted to reach the participant by phone. If the participant never responded to

any attempt to contact, he/she was considered to be withdrawn from the study.

A total of 63 participants completed a follow-up interview. Participants either engaged in a follow-up interview through Skype for Business ($n = 42$), phone-call ($n = 14$) in case of technical difficulties, or face-to-face ($n = 7$) if they did not have the technological means to participate online. Participants were asked the follow-up interview questions for each elevated subscale on the CCAPS-62. Graduate student clinicians were provided with specific criteria for determining overall risk level using the university counseling center's established triage form with the following designated risk levels: Minimal Distress, Low Distress, Moderate Distress, High Distress, Crisis Situation, and Emergency Situation. In addition, each participant was screened for suicidal ideation, and self-harm urges and/or behavior. Students who elevated on the hostility scale were also screened for homicidal ideation. If a participant was considered to have any level of elevated risk of harm to self or others that was not deemed to be a "Crisis Situation," then the participant was referred for follow-up at the campus counseling center. The campus counseling center has crisis appointments built into daily schedules. We collaborated with the center to ensure that crisis appointments would be available during business hours if students needed assistance during the time of the study. Participants who were not at risk of harm to self or others but who expressed other mental health distress (eg anxiety, depression) were provided with referral information about campus and community treatment resources. Although there were no students deemed to be in a Crisis Situation during the study, graduate student clinicians were trained in the following process if they encountered a student in the Crisis Situation risk level. First, the graduate student clinicians were instructed to contact the faculty member on call (faculty who were licensed clinical psychologists were "on call" at all times when follow-up interviews were conducted) and consult about the situation, while also being prepared to call the police or campus security depending on the location of the student. After making the decision that the student was in a Crisis Situation risk level, the graduate student clinician would work with the student to identify someone who could walk him/her to the counseling center or the hospital depending on the time of day. Graduate student clinicians were instructed not to end the Skype call until help had arrived and the student was no longer alone.

Among students who received elevated scores on at least one subscale at screening, there were no significant differences between those who chose to follow-up and those who did not follow-up on scores for the depression, generalized anxiety, social anxiety, academic distress, eating concerns, family distress, or hostility subscales. However, there was a significant difference on scores for the substance use scale such that those who chose not to follow-up scored higher at the screening than those who did follow-up [$t(1, 156) = -2.89$, $p < .01$]. There were no other significant differences between those participants with elevated scores who chose to follow-up and those who chose not to follow-up (eg gender, ethnicity, total number of elevations).

Three-month follow-up

Three months after the initial in-class screening, a follow-up link to the PMHCCQ was texted to all participants in both the control and experimental groups.

Results

A total of 247 participants in the experimental class engaged in the large class screening. Among those students, a total of 64% ($n = 158$) obtained an elevated score on one or more subscales of the CCAPS-62, and less than 1% ($n = 2$) had missing data that prevented at least one subscale score from being calculated. Although the cut off scores used to determine subscale elevation were adjusted based on the revised number of total items on those two scales, it is likely that the current data represents a slight overestimate of students who scored in an "at risk" range on the depression and hostility scales. A total of 21.6% ($n = 53$) individuals had elevations on only one subscale, 15.5% ($n = 38$) had elevations on 2 subscales, 8.2% ($n = 20$) had elevations on 3 subscales, 6.1% ($n = 15$) had elevations on 4 subscales, 6.1% ($n = 15$) had elevations on 5 subscales, 4.5% ($n = 11$) had elevations on 6 subscales, and 2% ($n = 5$) had elevations on 7 subscales. One participant had missing data on two subscales so we cannot accurately report those results, but the individual elevated on 2 of the 6 subscales for which they provided answers.

Gender differences

In order to identify any gender differences in subscale elevations, a chi-square test was conducted for each subscale. A total of 141 females, 104 males, and one gender non-conforming individual participated in the large class screening. Due to the sample size for gender non-conforming individual, this analysis focuses on comparisons between males and females. There was a significant gender difference on the generalized anxiety subscale, χ^2 (2, $N = 246$) = 7.199, $p < .05$, the social anxiety subscale, χ^2 (2, $N = 246$) = 10.612, $p < .01$, and the eating concerns subscale, χ^2 (2, $N = 244$) = 12.663, $p < .01$, with females elevating more frequently than males. There was also a significant gender difference for the substance use subscale, χ^2 (2, $N = 246$) = 6.262, $p < .05$, with males elevating more frequently than females. See Table 1 for all chi square statistics including non-significant findings.

Of the 158 individuals who had elevations on one or more scales, 39.9% ($n = 63$) participated in the follow-up interview, 21.5% ($n = 34$) declined to participate, 27.8% ($n = 44$) never replied to the invitation to participate, 8.2% ($n = 13$) signed up to participate but did not attend the follow-up and then never replied, and 2.5% ($n = 4$) expressed initial interest but never signed up to participate.

Table 1. Gender differences in subscale elevations on modified CCAPS-62.

Subscale	Elevated (*n*)	Did not elevate (*n*)	Total (*n*)	*df*	X^2	*p*
Depression						
Male	19	84	103	2	5.62	0.06
Female	38	103	141			
Gender non-conforming	1	0	1			
Total participants	58					
Generalized anxiety						
Male	18	86	104	2	7.20	0.03
Female	40	101	141			
Gender non-conforming	1	0	1			
Total participants	59					
Academic distress						
Male	25	79	104	2	0.44	0.80
Female	31	110	141			
Gender non-conforming	0	1	1			
Total participants	56					
Social anxiety						
Male	14	90	104	2	10.61	0.005
Female	39	102	141			
Gender non-conforming	1	0	1			
Total participants	54					
Eating concerns						
Male	6	97	103	2	12.66	0.002
Female	21	119	140			
Gender non-conforming	1	0	1			
Total participants	28					
Family distress						
Male	14	90	104	2	0.19	0.91
Female	20	121	141			
Gender non-conforming	0	1	1			
Total participants	34					
Hostility						
Male	26	78	104	2	3.07	0.22
Female	34	107	141			
Gender non-conforming	1	0	1			
Total participants	61					
Substance use						
Male	39	65	104	2	6.26	0.04
Female	36	105	141			
Gender non-conforming	1	0	1			
Total participants	77					
Overall						
Male	68	36	104	2	0.80	0.67
Female	88	53	141			
Gender non-conforming	1	0	1			

During the follow-up phase, risk levels were assigned to each participant based on the severity and pervasiveness of symptoms. Of those who completed a follow-up interview, 25.4% ($n = 16$) were considered to be in minimal distress, 41.3% ($n = 26$) were considered to be in low distress (eg adjustment issues but no suicidal ideation), 23.8% ($n = 15$) were considered in moderate distress (e.g passive suicidal ideation with no plan, mild depressive/anxious mood, mild insomnia or concentration problems), and 9.5% ($n = 6$) were considered in high distress (e.g frequent suicidal ideation with/without a plan but no serious intent, persistent depressive mood, frequent panic attacks, socially isolated/withdrawn, risky behaviors such as binge drinking/drug use/unprotected sexual behavior). Any participant at a level of moderate distress or higher was referred to the campus counseling center. When a student was considered to be in high distress, it was recommended they seek help from the counseling center as soon as possible. Although these recommendations were made, we were unable to confirm whether participants actually sought help from the counseling center due to issues related to privacy and confidentiality.

Table 2. Mean scores on individual items of the perceptions of mental health care on campus questionnaire at initial screening and follow-up.

	Time 1 *M (SD)*		Time 2 *M (SD)*	
Item	Control group	Experimental group	Control group	Experimental group
1	5.57 (1.27)	5.80 (1.02)	5.67 (1.03)	5.80 (1.09)
2	5.13 (1.01)	5.10 (1.23)	5.28 (1.12)	5.60 (1.04)
3	4.91 (1.23)	4.88 (1.50)	5.19 (1.21)	5.28 (1.34)
4	4.76 (1.50)	4.62 (1.32)*	5.02 (1.19)	5.52 (1.03)*
5	4.78 (1.34)	4.81 (1.19)	5.09 (1.14)	5.38 (1.15)
6	4.89 (1.60)	5.19 (1.38)	4.94 (1.43)	5.16 (1.43)

*Ratings in the experimental group were significantly higher at Time 2 than Time 1 ($p < .001$).

Perceptions of mental health care on campus

The PMHCCQ was completed the day of the initial screening and 3 months later. Of the 247 participants who completed the initial screening, 82 completed the 3-month follow-up. We also collected data in the control group section. Of the 208 participants who completed the PMHCCQ in the control group, 54 completed the 3-month follow-up. A series of 2 (experimental group vs. control group) x 2 (time 1 vs. time 2) mixed design ANOVAs were used to analyze the average score on each item of the PMHCCQ for participants who complete both phases of the study. There were no significant differences on any items based on group assignment (experimental group vs control group). However, there were differences over time for both groups on three items: "I think that my university should be more actively involved in promoting student mental health" [$F(1, 134) = 7.86$, $p < .01$], "I feel comfortable discussing issues about mental health on campus" [$F(1, 134) = 8.26$, $p < .01$], and "Mental health is a priority on my university's campus" [$F(1, 133) = 12.30$, $p < .001$]. For each of these three items, scores increased significantly from the initial screening to 3-month follow-up. There was also a significant interaction between condition and time for the following item: "My university is invested in my mental health" [$F(1,134) = 8.95$, $p < .01$]. Dependent t-tests showed that student ratings on this question during the initial screening ($M = 4.62$, $SD = 1.32$) were significantly lower than ratings at the 3-month follow-up ($M = 5.52$, $SD = 1.03$) ($t(81) = -6.91$, $p < .001$) for the experimental group. However, student ratings during the initial screening ($M = 4.76$, $SD = 1.50$) to the 3-month follow-up ($M = 5.02$, $SD = 1.19$) did not change for the control group ($t(53) = -1.48$, $p = .15$). Finally, there were no significant main effects or interactions for the following two items: "I believe that my university cares about student mental health," and "It is easy to go unnoticed with a mental health issue on my university's campus." See Table 2 for a summary of the means on all items on the PMHCCQ according to group. In addition, Figure 1 demonstrates means collapsed between groups on the PMHCCQ.

Comment

Of the students who participated in the screening phase of the experiment, 64% ($n = 158$) obtained scores considered to

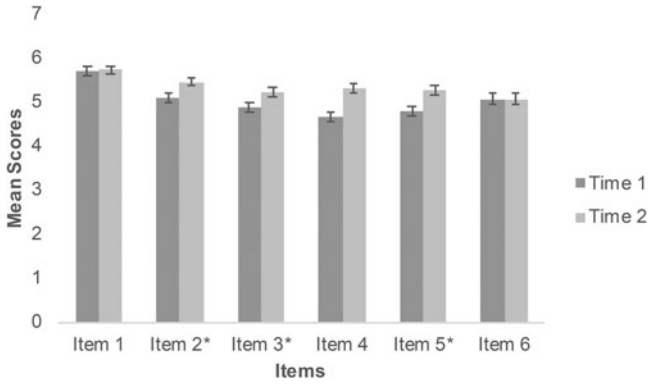

Figure 1. Collapsed mean scores on individual items of the perceptions of mental health care on campus questionnaire with error bars displaying the standard error. Item 1. "I believe that my university cares about student mental health." Item 2. "I think that my university should be more actively involved in promoting student mental health." Item 3. "I feel comfortable discussing issues about mental health on campus." Item 4. "My university is invested in my mental health." Item 5. "Mental health is a priority on my university's campus." Item 6. "It is easy to go unnoticed with a mental health issue on my university's campus." *Ratings were significantly higher at Time 2 than Time 1 ($p<.05$).

be "at risk" on at least one subscale of a mental health screening tool. These findings indicate that the majority of students in a large introductory psychology course reported distress at a significant level based on the CCAPS-62 alone. Developers of the CCAPS-62 provide two "cut-off" scores (low-cut score and high-cut score) and indicated that students in treatment at a university counseling center typically fall above the low-cut score.[16] For the purposes of the current study, we chose to identify students based only on the high-cut score, suggesting that an even higher percentage of students would have been identified using the low-cut score. Although many of those students were determined to be at minimal/low risk during the follow-up stage, 33.3% ($n = 21$) of the students who chose to follow-up were determined to be in need to counseling services for concerns more significant than typical adjustment issues, consistent with our initial hypothesis. However, considering only 39.9% of participants who elevated on one or more scales actually chose to follow-up, it is likely that more students were in need of a referral.

Although 158 individuals were invited to participate in the follow-up phase, less than half of them (39.9%) participated. There were a number of individuals who formally declined the invitation (21.5%), and there were 38.6% who did not respond or initially expressed interest in participating but did not follow through. In the future, attempts to specifically target these individuals and increase their likelihood of engaging in the follow-up phase would be important. One potential obstacle for completing the follow-up could have been scheduling issues. In order to try and share the caseload, graduate clinicians were assigned a specific number of students. It is possible that students may not have followed up due to scheduling conflicts with their assigned graduate clinician. Although we did express that the students could still have the opportunity to meet with someone in the case of scheduling conflicts, that additional obstacle could have prevented some participation. In the future, it could be beneficial to allow students the opportunity to sign up for any available timeslot and then allow graduate clinicians to pick up case files once scheduling is completed. One other potential explanation for the relatively low individual follow-up rate could be that the participants who chose not to follow-up did not need any additional research credit for their course and therefore lacked motivation to participate. In the future, increasing motivation to participate through other incentives could be helpful. It is also possible that other barriers to help-seeking that have previously been identified in the literature were also at play in the current study. For example, issues related to stigma or concerns about privacy may have also contributed to a lower follow-up rate.[5,6] Particularly concerning is the fact that students who had higher elevations on the substance use scale were less likely to participate in a follow-up interview suggesting that the current approach may not be as effective for students with potential substance use problems. One reason for this may be that students were mostly underage (mean age of the sample was 19), and they may have perceived more risks related to discussing substance use individually.

The PMHCCQ also provided interesting data regarding changes in student perceptions over time. Between the initial screening phase and 3-month follow-up, participants at the 3-month follow-up had stronger beliefs that the university should be more involved in promoting student mental health. At the 3-month follow-up they also reported feeling more comfortable discussing student mental health on campus, agreed more strongly that the university is invested in their mental health, and that mental health is a priority on our campus. It is interesting that students felt more strongly, at the end of participating in the research, that the university should be more involved, even though they agree that the university is already placing mental health as a priority. It appears the students generally agreed that the university cares about mental health, but they also indicated a belief that even more work could be done to continue promoting mental health on campus. Additionally, it is interesting that participants in the experimental group responded differently over time to only one item compared to participants in the control group, which only provided partial support for our second hypothesis. Experimental participants did report a stronger belief that the university was invested in their mental health over time compared to control participants. It would be interesting for future work to evaluate the impact of screening on students' perceptions of not only campus priorities related to mental health, but also the sense that the university cares about the individual student and whether this would lead students to be more likely to seek or accept treatment. Overall perceptions about mental health priorities on campus generally improved in both groups over time. One possible explanation of this finding is that participants in the control group were exposed to the same informed consent as participants in the experimental group so that the control participants knew that a large-scale mental health screening was being conducted on campus despite their lack of participation in the screening individually. That knowledge could have led to improved perceptions of

mental health priorities on campus. It is also possible that students (mostly first-semester freshman) simply became more aware of mental health priorities on campus over time and that the current intervention was not responsible (or not solely responsible) for the improvement in perceptions.

Limitations

Although prior research has focused on prevalence rates of clinical diagnoses, the CCAPS-62 is not meant to be a diagnostic tool. Therefore, the current percentage of students who scored in an "at risk" range on any of the CCAPS-62 subscales should not be compared directly to previous research on prevalence of mental health diagnoses on college campuses.

Regarding the PMHCCQ, there was significant participant attrition due to data being collected months apart. It is possible that students who felt more positively about the mental health priorities on campus were more likely to respond to the follow-up PMHCCQ questions.

The generalizability of our sample is also a limitation. A total of 86.9% of our sample self-identified as "White" and the mean participant age was 19-years-old, which is not representative of a diverse college population. However, these demographics are similar to the normative sample of the CCAPS-62 with 71.2% of participants self-identifying as "White" and a modal age of 19-years-old.[16] Additionally, participants of this study were enrolled in an Introductory Psychology course so these findings may not be generalizable to students in other courses. Students in this course were offered the incentive of research participation for course credit, and without an incentive, students could be less likely to participate. It is important to acknowledge that due to the nature of the study, participants may opt-in or opt-out in a different way than they would if they did not have an incentive to receive course credit.

While the current study evaluated a method of universal screening that reduced resources (both human resources and space resources), it is important to note that the resources required to complete the screening in only one section of the five sections of Introductory Psychology were still significant. The planning phase of the study required extensive consultation with various campus entities including the Institutional Review Board, legal counsel, counseling center, and departmental/college administration. Although by utilizing graduate student clinicians we were able to redirect the pressure away from the counseling center staff, many personnel were still needed to make this possible including graduate student clinicians, clinical psychology faculty members, and undergraduate research assistants. It is likely that some institutions would hesitate to adopt a universal screening approach because doing so might lead to an increase in referrals to an already overwhelmed campus mental health system. Although we worked closely with our campus counseling center throughout the study, these concerns were certainly at the forefront of the initial planning discussions. It is clear that allocating resources for universal screening approaches must be closely tied to the allocation of resources for mental health treatment on campuses in order to be successful in both identifying and helping students.

Additionally, although the intent of the current study was to establish a way to identify students with mental health concerns and refer them for treatment, the design of the current study did not allow us to determine whether the screening truly resulted in more students seeking mental health treatment. Previous researchers have drawn comparisons between how individuals delay diet or fitness lifestyle changes to delaying mental health treatment.[5] Although the participants in our study may have gained increase awareness that they could benefit from treatment, they may not have felt the urgency to do so. An obvious important extension of this work would be to evaluate the effectiveness of this type of screening program in terms of improving rates of help-seeking behavior on college campuses.

Conclusions

This current study demonstrates that universal screening can be conducted successfully with the use of graduate clinicians and online interviewing tools. Through this study, a large number of individuals were identified and referred for mental health services. Future research should focus on trying to improve the follow-up rate among students who score in an "at risk" range on a self-report screening measure.

Although universal screening does require significant resources, using graduate student clinicians can help reduce the demands on the university and campus counseling centers. In addition, the graduate students themselves benefit by gaining clinical experience. For institutions that do not have graduate programs, partnering with an institution that does have graduate training might be possible. Additionally, the use of online platforms to conduct confidential individual follow-up interviews can further reduce the resource demands for institutions. Although not every student may have access to a web camera or smartphone, the number of students who would require an in-person follow-up appears to be minimal compared to those who can utilize an electronic medium. Overall, the current study suggests that universal screening is possible to implement using creative methods to reduce resource demands.

Conflict of interest disclosure

The authors have no conflicts of interest to report. The authors confirm that the research presented in this article met the ethical guidelines, including adherence to the legal requirements, of the United States of America and received approval from the Institutional Review Board of Missouri State University.

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