

# An Intervention Framework for Addressing Stigma on College Campuses

## *Findings From a 3-Year-Long Intervention Program*

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**Abstract:** The ongoing COVID-19 pandemic will only exacerbate the rising mental health concerns among college students. However, stigma toward such concerns continues to hinder mental health care utilization among the students, requiring urgent evidence that can help guide college campuses in implementing effective antistigma interventions. We propose and provide evidence for an intervention based on findings from a 3-year-long antistigma intervention that was implemented on a Southeastern college campus in the United States. Unique random samples of college students, totaling  $N = 1727$  across 3 years, were recruited as participants. Each year, participants completed a preintervention and postintervention survey comprising of questions related to demographics, stigma, and mental health care knowledge. Findings indicate that the stakeholder-led intervention decreased personal stigma and increased mental health care knowledge among students who were exposed to the intervention. Further research is needed to assess feasibility and efficacy of the proposed intervention framework on other campuses.

**Key Words:** Stigma intervention framework, college/university, personal stigma, public-perceived stigma

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Estimates suggest that approximately one in three college students has a diagnosed mental health condition and 8.2% report having suicidal ideation (Lipson et al., 2019). Further, experiencing mental illness is a risk factor for dropping out, and approximately 55% of students report that mental health concerns affect their academic performance (Arria et al., 2013; Eisenberg et al., 2009a; Eisenberg et al., 2013; Hunt et al., 2010). However, despite the wide prevalence of mental illness on college/university campuses and associated challenges in academic performance, only about one third of students with a mental illness report using mental health care during a previous year (Lipson et al., 2019). Although there are multiple factors influencing mental health care utilization rates, approximately 36% of students identify stigma as the most influential factor hindering help seeking, making stigma a significant obstacle for accessing and using mental health care among college students (Clement et al., 2015; Golberstein et al., 2008; Gruttadaro and Crudo, 2012).

Stigma research has advanced significantly in the last few decades and has provided crucial evidence for its conceptual makeup, types, and interventions (Link and Phelan, 2001; Pescosolido and Martin, 2015; Yamaguchi et al., 2013). Stigma is described as a process involving labeling and stereotyping of socially undesirable characteristics that could lead to prejudice and discrimination toward members of a stigmatized group (Goffman, 1963; Link and Phelan, 2001). As the research has progressed,

scholars have conceptualized various forms or types of stigma, such as public-perceived and personal stigma. Public-perceived stigma can be defined as one's perception regarding prejudicial and ill-informed notions about mental illness among general public or in a community (Corrigan, 2004; Link and Phelan, 2001). Personal stigma can be defined as one's own prejudicial and ill-informed notions about mental illness (Corrigan, 2004; Corrigan and Watson, 2002). Although both public-perceived and personal stigma can act as barriers to seeking or using mental health care services, their underlying mechanisms are different (Bathje and Pryor, 2011; Vogel et al., 2007). Public-perceived stigma can act as a barrier to help-seeking by making one perceive that disclosure of one's use of mental health care services can make him/her susceptible to social risks, such as discrimination and negative influence on one's social network (Corrigan et al., 2014). For instance, a student may perceive that others will think less of her/him if she/he accesses mental health care, leading to a loss in friendships and peer relationships. Personal stigma can hinder mental health care utilization by having a person ignore their own mental health concerns. Thus, to increase mental health care utilization rates, many existing interventions aim to address various forms of stigma on college/university campuses.

Numerous studies have examined impact of education-based interventions, media campaigns, and contact-based strategies in addressing stigma on university campuses. Interventions such as Coming Out Proud and University Bring Change to Mind (UBC2M) have provided evidence on addressing stigma on university campuses by engaging students with and without mental illness (Pescosolido et al., 2020; Rüschi et al., 2014). For instance, a recent study evaluating UBC2M concluded that the intervention was effective in addressing stigma among students across years, generating preliminary evidence that antistigma interventions can reduce stigma in the long term (Pescosolido et al., 2020). Although such studies provide optimistic evidence in addressing stigma on college campuses, concerns related to addressing stigma on university campuses are unique and continue to be challenging, highlighting the need for further research.

Unlike general communities where community members remain largely same across years, the student body on a university changes significantly every year. This shift in population each year requires sustained efforts to decrease stigma and maintain optimal mental health care utilization rates. However, much of the evidence pertaining to current stigma interventions on college campuses relies on interventions that are provided at one time point only and rarely evaluate the interventions' efficacy over the long term (Gronholm et al., 2017; Yamaguchi et al., 2013). Although some studies follow students across years to assess long-term efficacy of an intervention, it is unlikely that the intervention disperses from students who were part of an intervention to students who were not, limiting evidence regarding stigma interventions' efficacy on reducing stigma within community at large. Thus, to address stigma on a university campus, it is important to not just educate a portion of students on campus at one time point but to devise interventions that addresses the stigma on a community basis across time. However, there is scant evidence regarding stigma interventions that are implemented and evaluated across years.

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Further, although there are numerous studies regarding stigma intervention on university campuses, few stigma interventions explicitly highlight the role of, or include, community stakeholders, such as staff and administrators, in forming these interventions. Traditional antistigma interventions have been conceptualized and implemented via collaborations between researchers and clinicians, and only recently interventions have been shaped by individuals with lived experience of mental illness and their advocates (Gronholm et al., 2017). Thus, there is scant evidence regarding interventions that are developed using wide-ranging community partnerships and deliberation. Given the social nature of stigma, unique context of each university campus, and emerging challenges related to the COVID-19 pandemic, it is important to embed stakeholder perspectives on developing, implementing, and evaluating interventions, as while the student body changes each year, the stakeholders represent cultural/institutional custodians for such communities. This need is evident in contemporary research. For instance, the UBC2M intervention research noted that stigma interventions on university campuses require the involvement of stakeholders to provide targeted and tailored interventions (Pescosolido et al., 2020).

Thus, although there are numerous studies assessing interventions to address stigma on a university campus, there are almost no studies that 1) provide a framework to address stigma by acknowledging the continuously changing nature of student body on a campus, 2) engage stakeholders in developing and assessing an intervention, and 3) evaluate an intervention on a community rather than individual basis across years. To address these gaps, this study provides a conceptual framework and evaluation of a stigma intervention that was developed by doctoral students (at the time) in collaboration with university stakeholders and implemented for three simultaneous years at a US Southeastern university campus.

## METHODS

### Study Design and Sample

We used a pretest/posttest research design to assess changes in personal and public-perceived stigma toward mental illness, and mental health care knowledge among college students across 3 years, from 2014 to 2016. The study was implemented at a large Southeastern university campus that is situated in a town with population of approximately 140,000 (U.S. Census Bureau, 2015), and much of the town is constituted of individuals connected to the university. Each year, online surveys were distributed at three time points (preintervention, 2 weeks postintervention, and 6 weeks postintervention). At each time point in each year, a unique sample of students were selected at random from the full student registry and invited to participate. Eligibility criteria included 1) age older than 18 years, and 2) being an enrolled student at the university (part-time or full-time). Visiting students were not eligible because their main enrollment is not with the university. During year 1 (2014), the online survey was sent out to 900 students (300 per wave), and 273 students completed the surveys, representing a response rate of 30%. To gather data from a larger sample in years 2 (2015) and 3 (2016), online surveys were distributed to 1000 students at each time point, totaling 3000 invited respondents per year. To boost response rate, various strategies were used, such as email reminders for survey completion and publicizing study via email LISTSERVS and social media. Nine-hundred fifty and 779 students completed the online surveys during years 2 and 3, respectively. Thus, a total of 2002 students completed the survey across years.

To account for social desirability and respondents completing survey primarily for incentive purposes, cheater questions were included in the surveys during years 2 and 3. Cheater questions were designed to flag respondents who wanted to complete the survey solely for incentive purposes and/or did not appear to be reading survey questions carefully, as the cheater questions instructed respondents to select specific responses. Incentives for survey completion were provided via

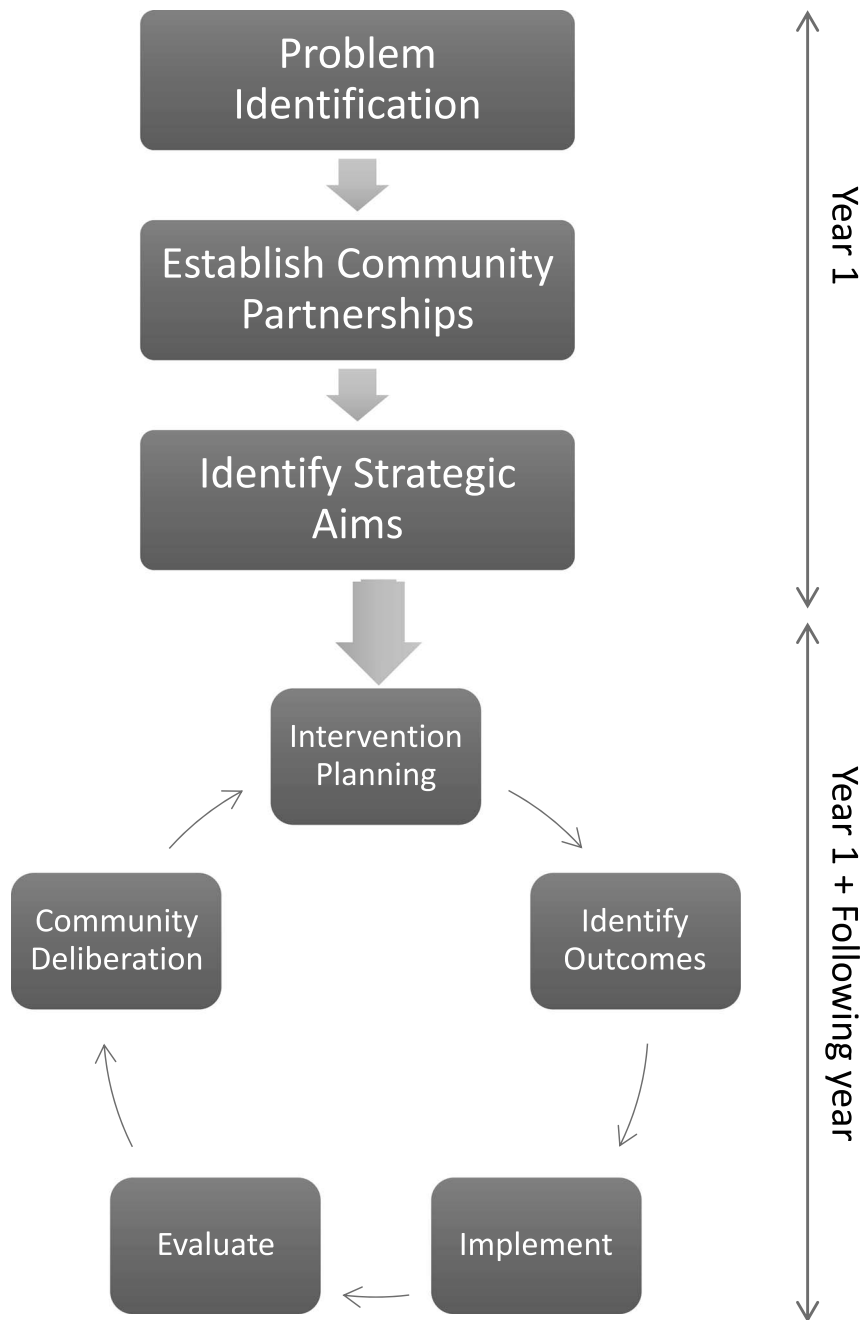
student stores discount vouchers to all the respondents. In addition, one Apple iPad was also given to a student via random drawing each year. The study protocol was approved by the institution review board at University of North Carolina at Chapel Hill.

### The Intervention Framework

The conceptual framework used to devise and implement the stigma-free intervention (detailed below) was adapted from Mobilizing for Action through Planning and Partnership (MAPP) field guide (National Association of County and City Health Officials, 2013). The MAPP guide was deliberately chosen as it serves as a planning tool to address emerging public health concerns through community partnerships. To address stigma as a public health concern on the university campus, we adapted the MAPP framework to develop the Community Informed Stigma-Free Intervention (CISFI) framework. The CISFI framework constitutes the following phases (Fig. 1):

1. *Problem identification*: This phase involved preliminary exploration of available data and conversations or informal interviews with key community stakeholders, such as university's Counseling and Psychological Services (CAPS) service providers, to identify specific issues related to stigma. The conversations helped identify that, instead of using services in a timely manner, many students approach CAPS when their mental health concerns pose a serious threat to their academic performance, mostly during end of the semester. Further, data related to mental health stigma that had been collected during the previous year via university's participation in the Healthy Minds Study (Eisenberg and Lipson, 2014) highlighted that perceived public stigma is a crucial concern on the campus. The university-specific data highlighted that, although only 13% of students agreed with the statement "I feel that receiving mental health treatment is a sign of personal failure," approximately one in two students (53%) agreed with the statement "Most people feel that receiving mental health treatment is a sign of personal failure" (Healthy Minds Study, [Eisenberg and Lipson, 2014]).
2. *Establishing community partnerships*: This phase involved disseminating information related to the identified problems to community stakeholders and seeking their support. The authors assembled data from informal interviews and Healthy Minds Study (Eisenberg and Lipson, 2014) into a document that was distributed to numerous university leaders/stakeholders such as The Faculty Chair and Deans in the Graduate School. A preliminary meeting was scheduled with the stakeholders to determine their views on the issue and identify university resources that can be mobilized to implement an intervention campaign. An outcome of this meeting was formation of the Committee for Striking Stigma, which involved more than 20 university- and community-based offices/organizations, including the authors, student body representatives, student leaders from university-based mental health advocacy groups, service providers from CAPS, multiple faculty members, and university stakeholders. The aim of the committee was to develop and implement an intervention to address stigma.
3. *Identify strategic aims*: This phase involved discussions with the community stakeholders and the researchers to identify strategic aims to address the identified problems. The authors presented data regarding stigma on campus and shared preliminary ideas regarding an intervention campaign with the committee. Upon discussions, the committee agreed on the following strategic aims for the intervention:

- *Aim 1*: Acknowledge and address the issue of mental health stigma;
- *Aim 2*: Increase mental health awareness and service accessibility among students;
- *Aim 3*: Create an effective network of students, faculty, and stakeholders who can work toward creating a stigma-free community; and
- *Aim 4*: Create a one-stop Web page where students can access information regarding mental health care resources on and around campus.



**FIGURE 1.** The CISFI framework.

4. *Intervention planning:* This phase involved planning the intervention via deliberations with community stakeholders. Several committee meetings were held during 2014 summer semester to share evidence regarding stigma interventions with the committee. The intervention/campaign was initially formalized as a weeklong social media campaign; however, upon committee discussions, it was decided that a 1-month long campaign can be devised and implemented through collaborations between various university entities/offices and the students.
5. *Identification of outcomes:* To be accountable to the stakeholders and assess effectiveness of the intervention, the outcomes were also selected through committee deliberations. Survey items from the Healthy Minds Study (Eisenberg and Lipson, 2014) were selected, as this strategy allowed for comparison of outcomes with previously

collected data. Additional items were added to collect demographic information and assess coverage/exposure of the intervention.

6. *Implementation:* This phase involved implementation of the intervention via collaboration with community stakeholders. The intervention (detailed below) consisted of multiple events, and each event was implemented through collaborations with community stakeholders.
7. *Evaluation:* As the aim of the intervention was to decrease stigma across campus and included mass/social media elements, the committee decided to implement online surveys to randomly chosen students across campus instead of longitudinally following students who were explicitly exposed to the intervention. Current evidence highlights that providing mental health care education decreases stigma and increase mental health care knowledge among participants exposed to an

intervention (Yamaguchi et al., 2013). However, less is known about the effect of antistigma interventions on a community level. Therefore, we decided to survey randomly selected students to evaluate the campaign/intervention's coverage and effectiveness.

8. *Community deliberation*: This phase involved sharing evaluation results with the community stakeholders during year 1. In addition, the stakeholders and researchers also deliberated on issues that hindered or facilitated intervention implementation. Following year 1 campaign, each year, the committee met during the spring and summer semesters to design and implement the intervention during 2015 and 2016.

## The Intervention

Throughout 2014 to 2016, the intervention was implemented between September 12 and October 11 each year, so that the intervention campaign would begin near the start of the academic year and end during the Mental Illness Awareness Week (first full week of October). Each year, the campaign included weekly events such as mental health-themed student luncheons in university dining halls (aims 1 and 2), an open panel discussion of expert speakers that included individuals/students with mental illness discussing stigma toward mental illness (aims 2 and 3), mass media campaign using physical infographics posted around campus buildings and electronic distribution on social media (aim 2), a social media campaign to show support for students with mental health concerns (aim 2), and participation in student orientation events across campus (aims 2 and 3). Various student organizations also coordinated with the campaign to hold additional events, such as mental health education modules, throughout the intervention month.

## Measures

A 38-question survey was used to assess intervention's efficacy. The survey included 16 questions regarding personal stigma and public-perceived stigma, adopted from Healthy Minds Study (Eisenberg et al., 2009b), with responses ranging from 1 (strongly agree) to 6 (strongly disagree). The items representing personal stigma were coded such that higher scores were indicative of higher levels of personal stigma and the scores were averaged to create a composite score. The personal stigma scale yielded satisfactory internal consistency reliability across years and time points ( $\alpha = 0.76\text{--}0.80$ ). The items representing public-perceived stigma were also coded such that higher scores were indicative of higher levels of public-perceived stigma and the scores were averaged to create a composite score. The public-perceived stigma scale yielded satisfactory internal consistency reliability across years and time points ( $\alpha = 0.83\text{--}0.84$ ).

The survey also collected sociodemographic information, such as age, race/ethnicity, academic status, sex, sexuality, religiosity, financial situation, and relationship status. Questions related to exposure to the intervention were also included. Respondents were also asked to self-report diagnosis of any mental health concern. Mental health care knowledge was assessed using survey item "I know where to receive mental health services" with responses ranging from 1 (strongly agree) to 6 (strongly disagree). All the information was collected anonymously.

## Analysis

Before the estimation of inferential statistics, all outcome variables were assessed for distributional nonnormality. Diagnostic assessments indicated that all outcome variables were not significantly burdened by distributional skewness or kurtosis. Between-group analysis of variance (ANOVA) was used to assess mean differences in personal stigma, public-perceived stigma, and mental health care knowledge across samples from each wave, with analyses repeated for each year. Two-tailed, independent sample *t*-tests were used to assess mean outcome differences between students exposed to the intervention and students not exposed to the intervention, with analyses repeated for each year.

## RESULTS

### Participants

After eliminating responses based on the cheater questions, the final analytical sample across all 3 years included 1727 students (Fig. 2). Nearly 52% of the students in the final analytical sample identified as female, and the average age was 22.94 years ( $SD = 6.23$ ). In terms of racial/ethnic identity, 68% of students identified as White, 14% identified as Asian, 7% identified as Black, 5% identified as Hispanic, 4% identified as multiracial, 1% identified as Native American, and 2% identified with another racial/ethnic group not listed. Twenty-four percent of the students indicated being a freshman, 14% indicated being a sophomore, 13% indicated being a junior, 12% indicated being a senior, and 37% indicated being a graduate or professional student.

In terms of exposure to the intervention, during year 1, approximately 39% and 26% of the students were exposed to the intervention during waves 2 and 3 (preintervention wave 1 not applicable), respectively (Fig. 2). During years 2 and 3, approximately 44% and 41% and approximately 39% and 37% of the students were exposed to the intervention during postintervention waves 2 and 3, respectively.

### Personal Stigma

Table 1 displays outcome trends across all three time points. Analyses indicated nonsignificant differences across time points with respect to personal stigma in years 1 and 2. However, during year 3, students at time points 2 and 3 reported significantly lower levels of personal stigma relative to students at time point 1 ( $F = 2.99, p = 0.05$ ). Further, although differences in personal stigma across time points were significant only in year 3, significant differences in personal stigma were observed between students exposed to the intervention and students not exposed to the intervention in all 3 years. Specifically, students exposed to the intervention reported significantly lower levels of personal stigma than students not exposed to the intervention in years 1 ( $t = -2.60, p = 0.01, d = -0.60$ ), 2 ( $t = -2.55, p = 0.01, d = -0.23$ ), and 3 ( $t = -2.85, p < 0.01, d = -0.29$ ). See Table 2 for more details.

### Public-Perceived Stigma

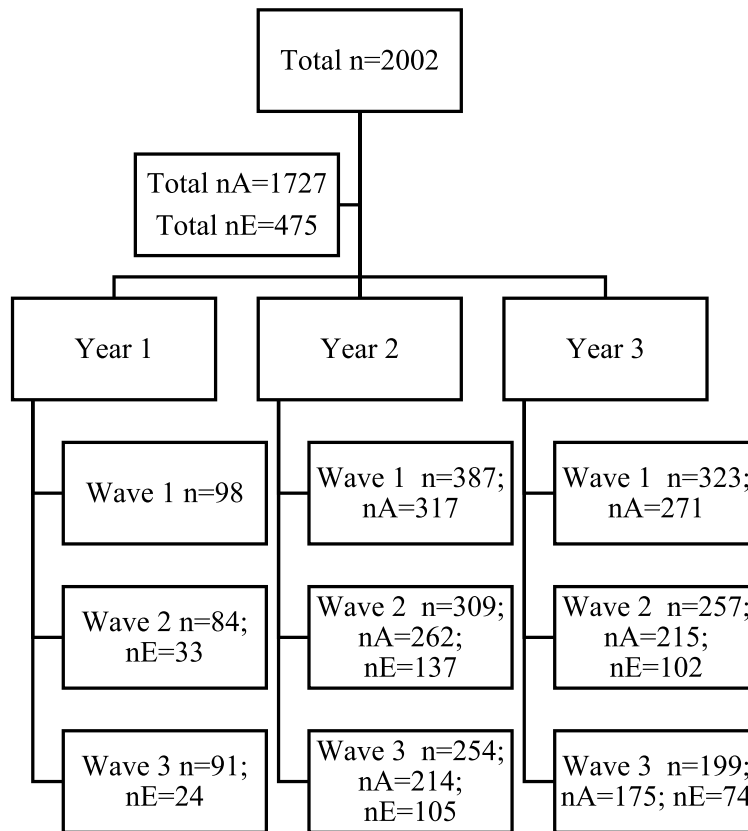
Similar to personal stigma, significant differences across time points were observed with respect to public-perceived stigma in year 3 ( $F = 3.47, p < 0.05$ ). Specifically, students at time point 2 reported lower levels of public-perceived stigma; however, students at time point 3 reported the highest levels of public-perceived stigma. Results indicated that levels of public-perceived stigma did not significantly differ between students exposed to the intervention and students not exposed to the intervention across years.

### Mental Health Care Knowledge

Results indicated nonsignificant differences across time points with respect to mental health care knowledge across years. However, significant differences were observed between students exposed to the intervention and students not exposed to the intervention in all 3 years. Specifically, students exposed to the intervention reported significantly higher levels of mental health care knowledge than students not exposed to the intervention in years 1 ( $t = 3.62, p < 0.001, d = 0.43$ ), 2 ( $t = 5.03, p < 0.001, d = 0.46$ ), and 3 ( $t = 4.17, p < 0.001, d = 0.43$ ). Further, among students exposed to the intervention during the year 2016, undergraduate students reported higher gains in mental health care knowledge than graduate students ( $F = 5.25, p = 0.005$ ).

## DISCUSSION

We evaluated an antistigma intervention that was designed and implemented via extensive collaboration with numerous university stakeholders, faculty, and students. The intervention had two primary



nA= n after removing positive cheater question cases  
nE=number of students exposed to the intervention

FIGURE 2. Flowchart describing the sample size.

aims: 1) to reduce stigma on the university campus; and 2) to sustain itself for continual implementation across multiple years. The first aim was evaluated through measures related to personal and public-perceived stigma. Data analysis revealed that there were significant preintervention-postintervention changes in public-perceived stigma during year 3 only and no significant changes were detected between students who were exposed to the intervention and those who were not. However, across 3 years, personal stigma was significantly lower among students who were exposed to the intervention when compared with the students who were not exposed. Similar to public-perceived stigma, personal stigma was also significantly lower postintervention only in year 3.

It is important to contextualize these findings with respect to the assessment protocols. Each year, survey assessments were given to randomly selected students during each wave; students were not longitudinally followed throughout the waves or years. Numerous studies have evaluated influence of antistigma interventions by assessing pre-post measurements across same student samples and the existing evidence indicates that students who are exposed to the intervention report decreased stigma, a finding similar to this study (Morgan et al., 2018; Yamaguchi et al., 2013). The collaborative team on this study wanted to evaluate how well an intervention does on a community level instead of an individual level. Therefore, the surveys were distributed to unique samples across time points and years to assess intervention's dissemination and efficacy. Although multiple students were exposed to the inter-

vention, assessments were cross-sectional surveys for students, rather than a prospective investigation with one sample of students followed longitudinally. Thus, across waves, only a proportion of students taking surveys postintervention were actually exposed to the intervention, and many students who were exposed to the intervention were not part of the survey due to random selection. Therefore, it is not unexpected that pre- and post-intervention changes in outcome measures were not evident across all 3 years in the study. This issue also helps partly explain the finding that there were no changes in public-perceived stigma based on intervention exposure. The students responded to public-perceived stigma items based on their existing beliefs at a singular time point instead of being longitudinally followed, which would have provided them time to witness any effect of the intervention on public stigma, which in turn influences public-perceived stigma. To address such challenges, future research using the CISFI framework will benefit from recruiting two sets of participants: one that follow student participants longitudinally to assess individual change and another that includes unique random sets of student participants that can help assess exposure and change on a community level.

Despite the challenges in assessment, the intervention was successfully implemented across 3 years. As mentioned earlier, there are numerous studies evaluating antistigma interventions that are delivered at one time point, but the evidence regarding sustaining such intervention across years via extensive collaboration is scant. Further, the traditional intervention approaches to reducing stigma are individual

**TABLE 1.** Descriptive and Inferential Statistics for Outcome Measures Across Time Points

		Personal Stigma			Public-Perceived Stigma		Mental Health Care Knowledge	
Time point		<i>n</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Year 1	T1	98	2.11	0.79	3.12	0.68	3.87	1.61
	T2	84	2.01	0.73	3.16	0.78	4.23	1.59
	T3	91	2.07	0.71	3.12	0.70	3.70	1.44
			<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
			0.36	0.70	0.08	0.92	2.44	0.09
Year 2	T1	317	2.00	0.70	3.36	0.79	4.13	1.54
	T2	262	2.05	0.70	3.30	0.75	4.12	1.59
	T3	214	2.03	0.64	3.35	0.69	4.17	1.55
			<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
			0.38	0.69	0.57	0.56	0.08	0.92
Year 3	T1	271	2.01	0.67	3.16	0.75	4.10	1.39
	T2	215	1.86	0.66	3.09	0.74	4.28	1.43
	T3	175	1.91	0.62	3.29	0.70	4.38	1.40
			<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
			2.99	<b>0.05</b>	3.47	<b>0.03</b>	2.50	0.08

Note: Mean differences across waves in each year were assessed using between-group ANOVA. Bold font is used to highlight *p* values significant at the 0.05 level. T1 = time point 1, preintervention; T2 = time point 2, 2 weeks postintervention; T3 = time point 3, 6 weeks postintervention.

*M*, mean; *SD*, standard deviation.

focused and uses active ingredients of education and/or contact on an individual level in the hopes that if an intervention can reach enough members of a community then overall stigma can reduce on a community level. However, the evidence is overwhelmingly clear that 1) existing interventions have limited long-term influence, jeopardizing the chances of decreasing stigma at community level in the long term, and 2) individual-focused interventions rarely change behavior patterns that rely on communal cues (Mehta et al., 2015). Thus, a major contribution of this study is the CISFI framework that was used to successfully implement an antistigma intervention across 3 years on a college campus, using extensive community collaborations. Beyond the measurable outcomes that are reported here, the intervention contributed extensively to antistigma efforts and mental health care knowledge on the

campus community. For instance, as part of the intervention, we developed a one-stop Web site for all the mental health care resources that are available on campus and the surrounding communities (aim 4). Further, the intervention also helped form a network consisting of undergraduate and graduate students, faculty, staff, and community stakeholders to address students' mental health concerns and creating a stigma-free campus. For example, through participation in the intervention, the Graduate and Professional Student Federation on campus created a position solely dedicated to combating stigma and addressing mental health needs of graduate students on the campus. Thus, despite limited significant findings in this study, the CISFI framework can be used by numerous university campuses to devise and implement an antistigma intervention across years. As Sartorius (2010) argued, stigma can be

**TABLE 2.** Differences in Outcome Measures Between Students Who Were Exposed to the Intervention and Students Who Were Not Exposed to the Intervention

		Personal Stigma			Public-Perceived Stigma		Mental Health Care Knowledge	
Time point		<i>n</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Year 1	E	57	1.84	0.64	3.16	0.77	4.54	1.43
	NE	118	2.15	0.74	3.13	0.72	3.64	1.51
			<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
			-2.60	<b>0.01</b>	0.28	0.78	3.62	<b>0.00</b>
Year 2	E	242	1.96	0.59	3.29	0.69	4.50	1.44
	NE	234	2.12	0.75	3.36	0.76	3.81	1.57
			<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
			-2.55	<b>0.01</b>	-0.99	0.32	5.03	<b>0.00</b>
Year 3	E	176	1.78	0.61	3.20	0.68	4.66	1.26
	NE	214	1.97	0.66	3.16	0.77	4.08	1.48
			<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
			-2.85	<b>0.00</b>	0.50	0.62	4.17	<b>0.00</b>

Note: Mean differences between students exposed to the intervention and students not exposed to the intervention were assessed using two-tailed, independent sample *t*-tests with equal variances assumed. Bold font is used to highlight *p* values significant at the 0.05 level.

E, exposed to the intervention; NE, not exposed to the intervention; *M*, mean; *SD*, standard deviation.

successfully addressed primarily by designing community-specific interventions that are implemented across years. This approach will be particularly important during upcoming years, as communities continue to address the COVID pandemic and its distinct consequences for mental health concerns.

Current evidence suggests that mental health concerns will continue to rise as students return to university campuses amid the pandemic, which, by many accounts, does not have a clear end point (The Healthy Minds Network and American College Health Association, 2020). Compared with prepandemic, during the pandemic students reported higher rates of depression, more students reported that mental health negatively impacted their education, and approximately 60% of students reported difficulty in accessing mental health care (The Healthy Minds Network and American College Health Association, 2020). Further, the Surgeon General recently released an advisory report about burgeoning mental health concerns among youth in the country (Murthy, 2021). Thus, as the students return to university campuses amid the pandemic and, eventually, postpandemic, it will be crucial to not only bolster existing mental health care resources but also reduce stigma and educate the student population on efficacy of such resources on the higher education campuses. Although traditional stigma interventions have focused primarily on addressing these concerns at one time point, the CISFI framework used in this study can be used to implement an intervention consistently across years to address the emerging mental health concerns. Further, the CISFI framework explicitly advocates for partnership across university/community stakeholders and offices/departments, which provide universities a road map to implement tailored interventions that are meaningful and effective for their particular context. Such strategy is particularly helpful for addressing stigma, as stigma is not constant in its representation across contexts but presents itself with unique challenges across varied institutional contexts (Gaddis et al., 2020). For example, a stigma reduction intervention that works at a prominent large research university may not be effective in the context of a relatively small liberal arts college.

Although the intervention was implemented across 3 years, there are limitations that influenced the results of this study. As stated earlier, no students were longitudinally followed across the 3 years, and each wave recruited unique random samples to assess exposure and efficacy of the intervention, which influenced assessing changes in the outcomes on the individual level, leading to some nonsignificant findings. Further, although a 16-item measure was used for assessing personal and public-perceived stigma, only one item was used to analyze mental health care knowledge. The findings are also limited in generalizability, as the participants were recruited from one Southeastern university campus and the overall sample is predominantly White and female. Another limitation includes lack of analyses based on various student groups, such as based on academic standing or international student status. Finally, no behavioral measures were collected to assess the influence of intervention on behaviors, such as utilization rates at college-associated psychological and counseling center or disclosure rates among students with mental health concerns.

## CONCLUSIONS

This study provides a framework (CISFI) that can be used by university campuses to design and implement antistigma interventions. Current evidence highlights that stigma is a significant barrier to mental health care access; however, the present interventions are mostly successful in yielding short-term reduction in stigma (Morgan et al., 2018; Yamaguchi et al., 2013). Current evidence also focuses primarily on education-based strategies with some studies also involving contact-based interventions (Gronholm et al., 2017; Morgan et al., 2018; Yamaguchi et al., 2013). However, there is dearth of evidence regarding interventions that implement comprehensive interventions that aim to address stigma on a social level, instead of solely on an individual level

(Rao et al., 2019). Interventions that tackle stigma on a large social scale, such as Time to Change in United Kingdom, have been shown to be effective; however, there is a need to generate evidence regarding efficacy of such community-level interventions when they are part of a larger national- or state-level interventions, such as Time to Change, within the US context (Evans-Lacko et al., 2014; Henderson et al., 2020). This study provides preliminary evidence that comprehensive university-wide interventions developed through extensive university/community collaborations can be effective in addressing stigma on university campuses.

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## DISCLOSURE

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*This research was conducted according to acceptable research standards, including having obtained informed consent of the participants. This research received ethics approval from the Institution Review Board at the University of North Carolina at Chapel Hill.*

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