

Empowering the Next Generation to End Stigma by Starting the Conversation: Bring Change to Mind and the College Toolbox Project

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Objective: To examine outcomes in a 4-year college pilot program built on stigma change research. U Bring Change to Mind (UBC2M) was developed and launched at Indiana University (IU) in 2014 as an institutionally supported, student-led organization to make campuses “safe and stigma-free zones.” The accompanying College Toolbox Project (CTP) assessed change in student prejudice and discriminatory predispositions as well as perceptions and behaviors at follow-up.

Method: All entering Class of 2019 students were invited to complete a Web-based survey ($N = 3,287$; response rate = 44.6%). In their third year, students were sent a follow-up survey. Stigma indicators for 1,132 students completing both waves were analyzed using descriptive statistics and multivariate regressions. Models controlled for social desirability, prior contact, socio-demographics, and self-reported mental illness. Participation was examined for potential biases.

Results: Statistically significant positive changes in attitudes and behavioral predispositions emerged. Although fewer students with prior contact endorsed stigma items initially, they reported significant reduction at follow-up. UBC2M active engagement was associated with lowering prejudice. Both passive and active engagement predicted change in discriminatory predispositions as well as current inclusive behaviors and positive perceptions of campus mental health culture.

Conclusion: A long-term, community-based, student empowerment approach with institutional supports is a promising avenue to reduce stigma on college campuses, to develop the next generation of mental health leaders, and to potentially reduce societal levels of stigma in the long run. CTP provides evidence that both contact and contextual visibility matter, and that UBC2M offers a nationally networked organizational strategy to reduce stigma.

Key words: stigma, mental health, intervention, college, emerging adults

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A research resurgence over the past two decades has provided a solid scientific foundation for understanding possibilities and limits for stigma reduction.¹ Recent reviews, including the National Academy of Sciences (NAS) report, *Ending Discrimination Against People with Mental Illness and Substance Use Disorders: The Evidence for Stigma Change*,² provide both encouraging and discouraging conclusions.^{3–8} On the positive side, concepts have been clarified, facilitating an understanding of the multilevel, complex nature of stigma surrounding mental illness (MI), defined as the prejudice and discrimination surrounding MI.^{1,5,9} Efforts to reduce the consequences of negative social labeling of MI have clearer targets and goals. Furthermore, in Western nations, most of the public tacitly endorses underlying neurobiological causes of MI while rejecting older, morally based

etiologies (ie, weak character).^{3,10} Intervention studies demonstrate the ability to “move the needle,” reducing damaging beliefs, perceptions, and behaviors.^{11–13} Finally, perhaps the biggest change since the 1950s, is the growing willingness of individuals to talk to friends and relatives about mental health problems.¹⁴ Personified by high-profile individuals disclosing mental health struggles across sports, entertainment, literary, and even political spheres, “testimonies of service users” as active ingredients of stigma reduction is promising.¹⁵

Contrary evidence shades optimism. In the United States, stigma has not dissipated as predicted after deinstitutionalization.^{3,16} As the foremost obstacle to recovery,¹⁷ stigma continues to amplify the devastating effects of MI on individuals, families, professions, and communities.^{4,18,19} From years of life lost to continued high

unemployment rates, stigma diminishes personal and societal productivity.²⁰ Despite becoming more sophisticated in understanding MI, a near public majority expresses animosity and endorses exclusion.⁶ The battle over parity in insurance, research funding, and services continues.²¹ Some messages, once considered key (eg, “a disease like any other”), have been shown to be ineffective at this point.²² Many anti-stigma efforts, based on “myths” about stigma reduction, are never tested for effectiveness.⁵ Those tested have been characterized as having weak study designs, inadequate sample sizes, and effects that extinguish over time. Interventions focus primarily on attitude, less critical from consumers’ viewpoints, rather than behaviors or behavioral predispositions.^{5,12,13} Even the utility of the “contact hypothesis” as a change agent is up for debate.^{11,23} Seasoned stigma researchers and providers recommend abandoning “familiar but ineffective approaches”⁵ (p. xx).

In response, Glenn Close, actor and activist, began speaking about MI in the context of her family’s history, building an advocacy organization centered on “conversation” as a mechanism to decrease stigma. In August 2009, Bring Change to Mind (BC2M) aired its first public service announcement (“Grand Central Terminal”) and formulated its two organizational pillars: a scientific foundation, and inclusion of family and friends in all efforts (<https://bringchange2mind.org>). This article reports data on one of BC2M’s three major programs: U(niversity) Bring Change to Mind (UBC2M), a student-led, anti-stigma effort designed to create “stigma-free zones” on college campuses. As Sontag-Padilla *et al.*²⁴ recently documented, peer-to-peer programming has now been recognized as a potential solution in higher education.

College administrators have taken note of mental health (MH) issues, given recent research that has documented high levels of MH problems among college students and a similar rate of untreated problems as seen in the general population.²⁵⁻²⁸ Students generally enter during the mean age of MI onset (15–24 years of age) and face critical life course transitions, including an elevation of academic responsibilities, movement out of the family home, shake-up in friendship and support networks, and multiple cross-pressures from social, living, and academic arrangements.²⁹ With pressure on college health centers to increase MH services, parents, students, administrators have changed the dialogue. New advocacy organizations formed: in 2000, the JED Foundation (<https://www.jedfoundation.org>); Active Minds in 2003 (<https://www.activeminds.org/about-us/our-story>); the National Alliance on Mental Illness’s revamped college efforts in 2013 (<https://www.nami.org/About-NAMI/NAMI-News/2013/New-Semester-New-NAMI-on-Campus-Clubs>); and Mental Health America’s

Life on Campus Program (<http://www.mentalhealthamerica.net/whats-your-plan-college-mental-health-disorder>). Many colleges and universities assembled task forces to confront these pressures and to discuss novel programing (eg, McLean Hospital’s ICARE²⁵ Internet-based treatment for depression in college students, now in clinical trials).

Until recently, there were no rigorous evaluations of stigma reduction efforts in higher education.²⁴ Here, we assess BC2M’s college program, UBC2M. We examine change over time on multiple stigma dimensions. On the individual level, we hypothesized that active engagement with UBC2M (eg, attending events, seeking out information through social media or coursework) will have short-term (favorable normative beliefs, more openness in discussing MH) and long-term (stigma reduction) benefits. At the campus level, we hypothesized that passive exposure to UBC2M (eg, the UBC2M logo, bus, or flyers around campus) will have similar short-term and long-term benefits. The fundamental rationale for the individual-level hypothesis stems from classical theory of prejudice reduction based on active contact among those of equal status in the pursuit of common goals.³⁰ The contextual-level hypothesis draws from two sources: first, the synthetic, dual-process theory of culture that suggests that cultural worldviews shape local network inclusion³¹; second, the theory that the larger culture, defined as normative beliefs and shared behavioral expectations in a particular place, affects individuals’ attitudes and beliefs, especially among the newer members.^{32,33} By evaluating within-person change in attitudes and behavioral predispositions alongside current behaviors and perceptions, the results offer promising directions for stigma interventions.

METHOD

Study Design

The CTP Outcomes Assessment (IU-IRB Protocol 1407536121) is based on online surveys administered in 2 waves during Years 2 and 4. Year 1 involved human subject approvals, specific Indiana University (IU) permissions, pilot events and instrument testing. All Class of 2019 students (N = 7,376) were eligible to participate at baseline (Time 1; T1). IU Research Technologies’ data manager, not the research team, provided access to the IU(Bloomington) Data Vault by the IU Council of Data Stewards, allowing confirmation of first year status. Students were invited to the survey at Orientation. Later, the Strategic Planning and Research group, Office of Enrollment Management, sent survey invitation e-mails, queued confidential reminders to nonrespondents, and provided limited socio-demographic data for consented subjects. Students completing the

survey (N = 3,287; response rate = 44.6%) received a student-designed “swag bag” (eg, IU/BC2M tank top, fanny pack, light backpack). Two years later, current Class of 2019 students were sent invitations to the follow-up survey (Time 2; T2 N = 1,832; response rate = 27.6%). We focus on 1,193 students who completed both waves. Missing data on individual variables slightly reduce sample sizes. Intra-individual comparison lessens response bias inherent in comparing responses of all panel respondents. As part of a separate research question investigating whether and how language matters, the survey at both time points used four forms, randomly assigned to students. The different forms each used person-first language, but described the person as having “mental illness,” “mental health problems,” “a history of mental illness,” or a “history of mental health problems.” Analyses of covariance controlling for prior contact with individuals with MI found no effects of language, so data are collapsed across forms.

The IU undergraduate demographics were 51% female respondents, 70.8% white, and 62.5% in-state students. In addition, 58.1% of the students were between 18 and 21 years old (mean age, 18.37 years; <https://www.collegefactual.com/colleges/indiana-university-bloomington/student-life/diversity/>). Women accounted for 70.7% of respondents, 82.2% were white, 69.5% were in-state students, 17.3% reported a current/past MI, and 24.3% had low socioeconomic status (see Tables S1 and S2, available online).

The Program: UBC2M

The impetus for a college program came from three sources. First, given small-to-modest changes documented in large-scale public efforts and extinguishing effects in individual-level interventions, BC2M searched for alternative theories of change. Sociological research suggested that cultural change does not happen so much as a result of changing “hearts and minds” but because individuals with new attitudes, values, and beliefs come to the fore in organizations and society.³⁴⁻³⁷ Various referred to as cohort replacement theory or the acquired disposition models of cultural change, this approach posits that individuals’ character and beliefs stabilize in formative periods, remaining fairly stable afterward. This pointed to younger cohorts as a longer-run strategy, with the advantage of potentially creating a new generation of medical, political, and social leadership in mental illness, including stigma. At the same time, pioneering research on college student mental health, reports from college counseling center directors, and Center for Disease Control and Prevention (CDC) suicide reports document a growing MH crisis among youth.^{26,38-40}

UBC2M marked the goal of making colleges and universities “safe and stigma-free zones,” focusing on public

stigma, that is, the campus cultural climate. It followed the review by Yamaguchi *et al.*¹² of educational-based efforts calling for longer-term follow-up of stigma efforts. The Program Advisor for Cognitive Disorders (Banbury Center), held a planning meeting April 14–17, 2014, at Cold Spring Harbor Laboratory. Eighteen IU undergraduate and graduate students, national and international stigma researchers, and founder and members of BC2M and youth MH programs spent 2 days developing the “bones” of a novel college program. The result was a two-part effort to develop and to assess a campus-based effort at IU, the academic home of BC2M’s Chair of the Scientific Advisory Board (first author). First, the College Toolbox Project (CTP) provided institutional support, and an assessment carried out by an interdisciplinary science, staff, and student team working pro bono. The CTP synced with what would later become the primary NAS report² recommendation: long-lasting stigma change requires continuous efforts that attack all levels of stigma and use all tools available. Faculty designed and implemented the assessment, provided mentorship, and worked with institutional officials to clear administrative hurdles. Second, UBC2M, the “U”niversity arm of BC2M, would be a student-led club planning and carrying out anti-stigma activities, advocating for change in college policies, and creating “safe and stigma-free zones.”

UBC2M’s foundation was based on five general principles from stigma research (Table 1). UBC2M targets college as “community,” but where specific events may focus on different groups (eg, freshman, students of color, faculty, the larger Bloomington community). Leadership, based on a peer-to-peer model, is charged with designing programs and policies that speak to stigma, including the possibility of intersectional or multiple stigmas, and are provided the resources to do so. The basis for UBC2M efforts is scientific research, avoiding approaches known to be ineffective, condescending, or narrowly pedantic. Leaders leverage community resources for greater impact and to integrate anti-stigma efforts into the life of the community, not just those with or with an interest in MH. UBC2M aims for an approach with flexibility to change, continually drawing from community energy, and moving with socio-demographic and cultural trends.^{2,5}

These five general principles translate into five working principles. First, start early and often. Second, use primarily a “by students, for students” approach with activities, including formative research, designed and carried out by students with staff/faculty mentoring. Third, use a “bait and flip” model. Research suggests that previous contact is a fairly robust correlate of lower stigma, a potentially powerful change lever, and a characteristic of typical participants (those “inside the choir”).⁴¹ Yet, those who report not

TABLE 1 Summary of Selected Principles From Stigma Reduction Research (Panel A) Tailored for College/University Programs (Panel B)

Panel A	Selected Underlying General Principles for Anti-Stigma Programs	Implication for Current Program
Target a Population, Clarify Relevant Message	Do not target general, national population as a whole, but groups likely to be open to change and that are potential leaders	College students stand at a key transition point; goal is inclusion and tolerance
Choose Leaders "of the Community" and Provide Resources	Institutional programs, especially if forced, are less likely to be effective	Faculty and staff are less likely than students to develop successful student programs that target culture
Avoid Known, Ineffective Approaches	Base the program in the research on effective anti-stigma approaches	Mentoring for student club includes science; go beyond classroom
Leverage existing resources	Avoid common unwillingness among MH organizations to work together and typical tradition to "own" programs	Partner with existing student groups, institutional events
Build in Change	Flexibility is essential to continue efficacy as communities undergo social change.	Detailed manualized programs inappropriate for anti-stigma programs
Panel B	Tailored Principles for Anti-Stigma University Programs	Implication for Current Program
Start Young	Within the college population, special focus on entering students	Include all students in events, but target first-year students for special emphasis
By Students, for Students	Organic focus on the campus climate, not institutional requirements or needs; awareness remains in-scope	Education most effective with younger groups; leave to faculty, administration
Employ "Bait and Flip" Model	Consider first what will draw students in to receive the messages and start conversations	Get "outside the choir" to be most effective
Infiltrate, Share, and Build Resources	Events require resources often outside student organization budget; get "outside the choir" facilitated by co-branding and volunteering in related events	Seek places, other student groups or college offices with similar goals to pool resources and introduce similarity of larger goals
Create Shareable Resources That Build Larger Effort	Provide guides to failed and successful events; this includes what it takes to do the event, how to do it, where tailoring should be considered, and engage students to do simple, summative assessments included in materials	Create "living library" of each event that includes blueprint and assessment, and allows for other campuses to have ownership and program to move with higher education culture

knowing persons with mental health issues (those "outside the choir") are less likely to participate, and more typically endorse stigma. Engaging wide participation calls for innovative events and participation incentives (class credits, swag, fun, support for other clubs). Fourth, leverage existing student organizations, relevant classes, and university resources to weave MH into the campus fabric. Finally, view UBC2M, from the outset, as a "living library" of experiences, creating resources (eg, event "blueprints," whether successful or not) with the expectation that each student cohort, and each UBC2M campus, would build ownership by developing unique events and blueprints.

College students showed remarkable leadership and enthusiasm, facing the logistic and institutional challenges successfully. Over time, student leadership developed normative standards or expectations for their semester activities. These include: biweekly club meetings; activity at New Student Orientation "Late Nite" (eg, IU belonging art project, a mosaic of individually drawn cardboard tiles); participation in the Sex, Drugs, and Rock'n'Roll "Welcome Week" event (eg "Stigma can suck my popsicle" activity with temporary tattoo and lime green popsicle give away), Student Involvement Fair (table for recruitment), "First Thursdays" Festival (eg, hands-on stigma activity with

UBC2M giveaways); one major UBC2M event (eg, “Bring in the Booty” scavenger hunt with MH activity stations); one co-branded event (eg, Union Board’s “Love the Skin You’re In” Fashion Show promoting body-type diversity and inclusivity); annual campus anti-stigma campaign competition; one academic event (eg dinner and panel on “13 Reasons Why” TV series); “De-Stress” event (eg, finals study-break activities such as massages, coloring, kinetic sand, word searches, and snacks); campus bus wrap design (eg, lime green skin with branding and stigma “story” line); student speakers during annual BC2M gala and major events; and other efforts, both small (eg, tabling events) and large (eg, Kelley School of Business hosting Late Show actor/comedy writer/alumnus Brian Stack to speak about anxiety and depression).

Measures

Dependent Variables. With stigma research on college experiences being relatively recent, items were chosen from standard scales, college-specific measures were developed, and standard social distance items were adapted.¹⁰ A principal components analysis (PCA) determined whether items loaded together with acceptable eigenvalues (>1) and sufficiently high Cronbach’s α for internal consistency. As required, individual scale items were reverse scored so that higher raw scores indicate more stigma. In each case, results suggested a one-factor solution. Retained items had a factor loading of 0.30 or above.⁴²

We adapted two sets of prejudice items with responses ranging from 1 (strongly agree) to 4 (strongly disagree). First, 12 items tapping General Prejudice (eg, “I am frightened to be around persons with a history of mental illness”) were analyzed. PCA identified eight items with acceptable inter-item reliability (Cronbach’s $\alpha > 0.77$) that loaded on the first factor (loadings: 0.39–0.70). Remaining items were discarded. Second, College-Specific Prejudice drew from 12 items (eg, “Students who have a history of mental illness should not be admitted to IU”). Nine items loaded on one factor (loadings: 0.50–0.76), with good inter-item reliability (Cronbach’s $\alpha > 0.85$). Three items were discarded.

Discriminatory predispositions were measured using adapted College-Specific Social Distance, comprising 11 items on unwillingness to engage across different interactions (eg, “have a student with mental illness in one of your classes,” “as a roommate”). Responses were 1 (definitely willing) to 4 (definitely unwilling). All 11 items loaded on one factor (loadings: 0.44–0.83), with high inter-item reliability (Cronbach’s $\alpha > .91$).

General and College-Specific Prejudice as well as College-Specific Social Distance were measured at both times. Current perceptions and behaviors were assessed only

at T2. Perceptions of Campus Mental Health (MH) Culture included six items (eg, “I feel more free to talk about mental health problems and stigma issues”) with responses from 1 (strongly agree) to 4 (strongly disagree). All six items loaded on one factor (factor loadings: 0.68–0.85) with high inter-item reliability (Cronbach’s $\alpha = 0.86$). Behavior, Number of MH Conversation Partners, was assessed through a list asking the number of person types (ie, students, faculty) with whom they had talked about mental health or stigma in the past year, serving as an indicator of discussion or disclosure disinhibition (Table 2).

Independent Variables. Contact occurred in two ways: through UBC2M Active Engagement or UBC2M Passive Engagement. Active was assessed in two ways: asking respondents to check UBC2M-sponsored events that they attended (Number of Events Attended), and identifying all possible ways they were “in contact with or became aware of UBC2M” from a list of eight possibilities: UBC2M website, UBC2M Facebook page, UBC2M Twitter follower, banners, UBC2M events, UBC2M courses, UBC2M bus, or no interaction (Number of Contact Types). Of the possible contact types, 4 had endorsements from $>10\%$ of the total respondents: banners (30.5%), UBC2M events (19.9%), UBC2M bus (31.9%), and no interaction (30.1%). Bivariate correlations were used to determine the association between contact types and stigma change for any variables. No significant effects emerged (all p values $>.10$). Active contact types reflected different ways in which respondents could have actively sought out UBC2M-related information or activities. Overall Active Engagement combined the two. UBC2M Passive Engagement was measured by asking respondents to identify the correct UBC2M logo (Recognized Logo) from four options, assessing exposure free from social desirability or recall bias. Passive engagement was also measured by asking respondents “How did you hear about UBC2M?” (flyers, social media, class, friends, students, branded items, Number of Ways Student Heard about UBC2M) with a “none” option. Passive UBC2M engagement is distinguished from active contact because they capture exposure without having sought out the information. From these, Overall UBC2M Passive Engagement was created. Support for active participation is widespread in stigma research.¹ However, research also suggests that cultural symbols affect individuals’ evaluations. They assign meaning, in this case positive, that individuals interpret.⁴³ Swidler⁴⁴ has argued that during unsettled times in individuals’ lives (such as entering college), symbols, doctrine, and ritual shape attitudes and behaviors. With professors, friends and material symbols touting acceptance of difference in MH, even passive engagement holds potential.

TABLE 2 Descriptive Statistics (n, Means, SD) for Prejudice and Discriminatory Predispositions, Campus Mental Health (MH) Culture, and U Bring Change to Mind (UBC2M) Engagement (Active, Passive), College Toolbox Project, Indiana University (IU), 2015–2018 (N = 1,132)

Stigma Types		Time Point	n	Mean (SD)
Attitudes and Beliefs about Mental Illness	General Prejudice	T1	975	15.69 (4.10)
		T2	975	13.97 (3.57)
	College-Specific Prejudice	T1	933	14.81 (4.54)
		T2	933	12.78 (3.78)
Discriminatory Predispositions	College-Specific	T1	913	19.98 (6.28)
	Social Distance	T2	913	17.27 (5.85)
Perceptions of Campus Culture	Campus MH Culture	T2	1,132	15.95 (7.36)
	No. of MH Conversation Partners	T2	1,132	2.55 (1.95)
Active UBC2M Engagement	No. of Events Attended	T2	1,132	0.88 (1.57)
	No. of Contact Types	T2	1,132	0.97 (1.09)
Passive UBC2M Engagement	Recognized Logo	T2	1,132	0.50 (0.50)
	No. of How Heard	T2	1,132	15.95 (7.36)

Although national stigma studies have documented only inconsistent findings for socio-demographic variables, college studies have found that younger, male, and poorer respondents endorse stigma.²⁸ We control for those here. Finally, studies have assessed the importance of prior contact with individuals with MI and respondents' desires to provide answers that they believe others would expect.^{1,30,45} Although effects were found in face-to-face interviews only (versus computer-assisted, like CTP), we control for social desirability.⁴⁶ At the end of the survey, respondents provided demographic information: Sex (male or female), Age (in years), Race (white or nonwhite), Ethnicity (Latinx/not), Self-reported Mental Illness (yes or no), Childhood Socioeconomic Status (high or low), and In-state Status (yes or no). For Prior Contact, respondents reported number of individuals with MI that they knew at baseline. At T2 only, respondents also completed seven true/false items from a standard scale to assess Social Desirability (eg, "I have never deliberately said something that hurt someone's feelings").^{47,48}

Analytic Strategy

Paired *t* tests for T1/T2 measures assessed within-person change over time. Dependent measures were converted to difference scores between T1 and T2. Negative difference scores indicate greater stigma reduction and fewer discriminatory predispositions, since higher raw scores on each measure indicate more stigma. The difference model addresses time-invariant omitted variables, including prior experiences or static traits that might influence individuals' engagement level. Replicated analyses using an alternative specification for two repeated measures, the lagged dependent variable model, produced identical patterns of significance for engagement (on request). Separate models

determined whether active (Number of Events Attended, Overall Active Engagement) or passive (Recognized Logo, Overall Passive Engagement) engagement had long-term benefits associated with stigma change (General Prejudice, College-Specific Prejudice), discriminatory predisposition (College-Specific Social Distance), and/or short-term benefits associated with favorable, current campus culture perceptions (Campus MH Culture), and current behavior (Number of MH Conversation Partners). Each model assessed whether a specific type of engagement predicted a specific dependent variable, using ordinary least-squares regressions (with OLS, linear, and/or nonlinear polynomial terms) or Poisson regression analyses, as appropriate. All regression models adjusted for Sex, Age, Race, Self-reported MI, Childhood Socioeconomic Status, and In-state Status. Additional sensitivity analyses examining Ethnicity, Social Desirability, and Prior Contact revealed no difference in substantive conclusions. These later variables were dropped for parsimony. Models were successfully replicated in the subsample self-reporting MI and in using all available cases in T1 and T2.

OLS regression was used to determine whether respondents' UBC2M active and passive engagement was associated with changes in prejudice and discriminatory predispositions. Because variables measuring active, but not passive, engagement were skewed, we entered them as both linear and nonlinear (polynomial) terms (simultaneously) in their respective regression equations. The expectation with such skewed data is that the effect of participating in no events, as compared to one event, may be different from between 4, 5, or 6 events, which mark the upper range of the distribution. Polynomial terms are reported only when significant. To examine whether UBC2M engagement was associated with more favorable perceptions of Campus MH

Culture and Number of Conversation MH Partners, a simple count, not zero-inflated, was used with Poisson regression analyses in Stata 15. Statistical significance was set at $\alpha \leq 0.05$, two-tailed test (for full results, see Tables S3–S6, available online).

RESULTS

Prejudice and Discriminatory Predispositions

Paired *t* tests for the stigma measures at T1/T2 revealed that stigma was lower at T2 across all measures. Specifically, General Prejudice decreased over time (mean_{T1} = 15.67, SD = 4.10; mean_{T2} = 13.97, SD = 3.57; $t(974) = 13.05$, $p < .001$, 95% CI = 1.46, 1.98), as did College-Specific Prejudice (mean_{T1} = 14.81, SD = 4.54; mean_{T2} = 12.78, SD = 3.74; $t(932) = 13.30$, $p < .001$, 95% CI = 1.73, 2.32). College-Specific Social Distance (mean_{T1} = 19.98, SD = 6.28; mean_{T2} = 17.27, SD = 5.85) also decreased over time ($t(912) = 13.21$, $p < .001$, 95% CI = 2.30, 3.11). This magnitude of change ranges from a 10.9% to 13.8% decrease. Among controls, only older entering students, women, and out-of-state students fairly consistently reported passive changes.

Active Exposure

UBC2M Active Engagement had differential effects on stigma. Specifically, Number of Events Attended was associated with reductions in both General and College-Specific Prejudice (respectively, $\beta = -0.06$, SE = 0.01, $p < .001$, 95% CI = -0.09, -0.03; $\beta = -0.05$, SE = 0.02, $p = .005$, 95% CI = -0.08, -0.01) as well as College-Specific Social Distance ($\beta = -0.05$, SE = 0.02, $p = .02$, 95% CI = -0.09, -0.01). However, all effects were nonlinear (Figure 1). Stigma reduction was relatively small if respondents attended only a few (one to three) events, but was pronounced when respondents attended multiple (four or more) events (Figure 1A). This does not support our initial assumptions about non-linear effects. It does support a “tipping point,” nonlinear effect. The Number of Events Attended was linearly associated with increased favorable perceptions about Campus MH Culture ($\beta = 1.29$, SE = 0.13, $p < .001$, 95% CI = 1.03, 1.55), and Number of MH Conversation Partners (ie, incidence rate ratio [IRR] = 1.08, 95% CI = 1.06, 1.10) (Table 3).

Similarly, Number of Contact Types was associated with stigma reduction, but only for General Prejudice ($\beta = -0.15$, SE = 0.07, $p = .02$, 95% CI = -0.28, -0.02) and College-Specific Prejudice ($\beta = -0.22$, SE = 0.08, $p = .004$, 95% CI = -0.37, -0.07) (Table 3). In both cases, relatively little contact was associated with minimal stigma reduction, but multiple forms (three to four) of contact

were consequential, again suggesting a tipping point (Figure 1B). Overall Number of Contact Types did not affect College-Specific Social Distance, but was linearly associated with increased favorable perceptions of Campus MH Culture ($\beta = 2.68$, SE = 0.18, $p < .001$, 95% CI = 2.32, 3.04]), and Number of MH Conversation Partners (IRR = 1.20, 95% CI = 1.16, 1.23) (Table 3). Table S7, available online, lists the number of respondents by number of events attended and by number of contact types.

Passive Exposure

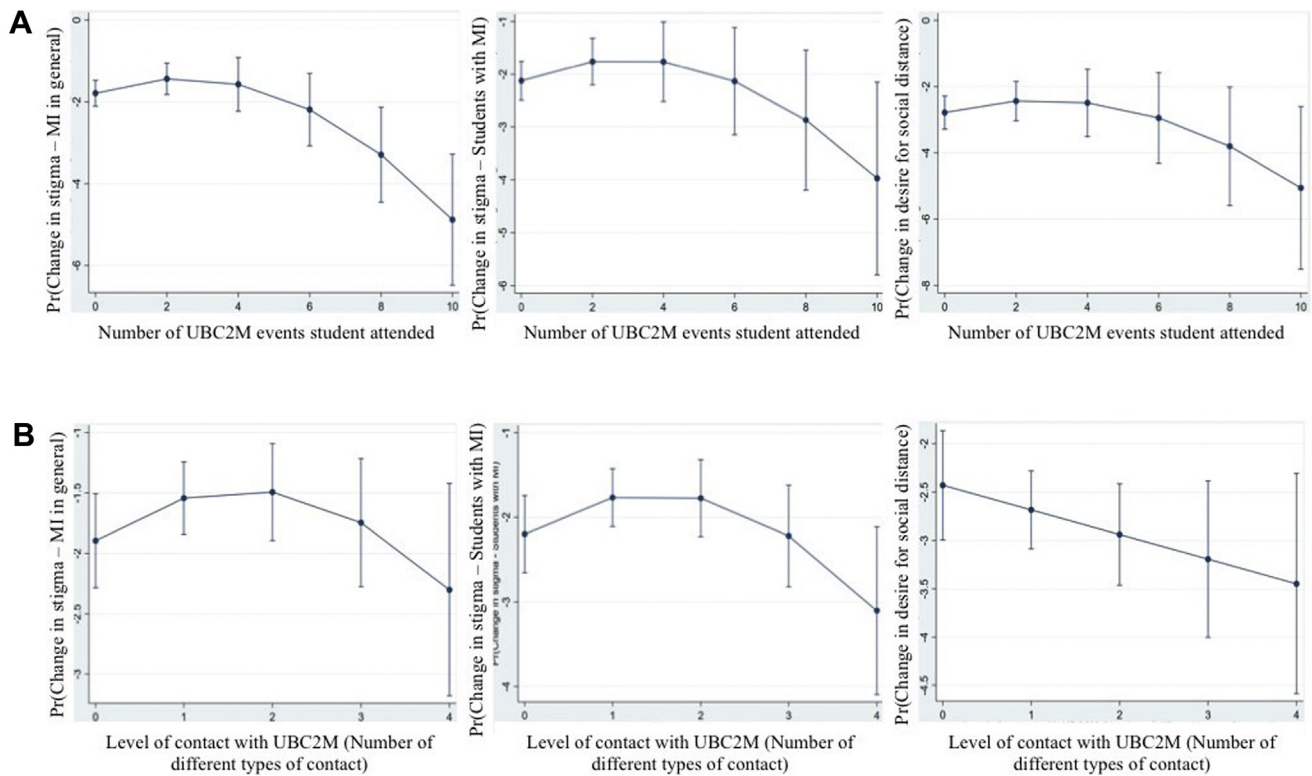
Passive UBC2M Exposure (Number of How Heard) was not associated with either General or College-Specific Prejudice (all β values < 0.26, SEs > .12, p values > .15). However, Number of How Heard was associated with more favorable perceptions of Campus MH Culture ($\beta = 2.94$, SE = 0.17, $p < .001$, 95% CI = 2.62, 3.27), and Number of MH Conversation Partners (IRR = 1.23, 95% CI = 1.19, 1.26) (Figures 2A and B, respectively; Table 3). Table S8, available online, reports the number of respondents by given number of exposures. Similarly, Recognized Logo was not associated with any change (ie, all β values < 0.24, SEs > 0.27, p values > .44). However, Recognized Logo was associated with more favorable Campus MH Culture perceptions ($\beta = 5.56$, SE = 0.40, $p < .001$, 95% CI = 4.78, 6.34), and Number of MH Conversation Partners (IRR = 1.43, 95% CI = 1.32, 1.54) (Table 3).

Replication in Self-Reported MI Subsample

UBC2M engagement, whether active or passive, was not associated with stigma change among students self-reporting MI (Table S8, available online). There is one exception: Recognized Logo was associated with a significant increase in College-Specific Social Distance ($\beta = 1.71$, SE = 0.83, $p < .05$). This may be an anomaly, may reflect this subgroup’s lower stigma at outset, or may suggest an unwillingness to be segregated only with others identified as a “person with.” However, all UBC2M engagement measures, whether active or passive, were significantly positively related ($p < .001$) to more favorable perceptions of Campus MH Culture and to Number of MH Conversation Partners. Furthermore, self-reporting MI was significantly associated with positive change on all outcome measures.

DISCUSSION

Based on recent research and policy reports, we designed and assessed a college-based program, UBC2M, to reduce stigma. The assessment design included both formative

FIGURE 1 Effect of Active U Bring Change to Mind (UBC2M) Engagement on General Prejudice, College-Specific Prejudice, and College-Specific Social Distance

Note: (A) Number of Events Attended, College Toolbox Project, 2015–2018 ($N = 1,132$); (B) Number of Contact Types, College Toolbox Project, 2015–2018 ($N = 1,132$). MI = mental illness. Please note color figures are available online.

assessments (conducted by students for each activity, not reported here) and summative assessments (conducted by faculty in a two-wave Internet survey).

Our data analyses indicated that the program had long-term benefits, reduction in stigma—prejudice, discriminatory predispositions—as well as short-term benefits, positive changes in perceptions of a favorable campus MH culture, and inclusive behaviors. Significant changes occurred, on average, for about 11% to 14% of the population. Although this may not be as dramatic as some small-scale interventions have documented, several key points are in order. First, given lower endorsements of stigma by entering college students than the general population, we were pleased to see any change. Second, these rates of change are nearly 5 times greater than national efforts recorded over a 10-year period.⁴⁷ Third, this describes change among *more than* those who participated heavily (ie, about 5% reported attending 4+ events), and demonstrates the power of contact. Finally, our finding that active and passive engagement predict more favorable normative beliefs about MH (eg, perceptions of campus MH culture, Number of MH conversation partners)

suggests that the program may also shift the larger campus culture of MI. Because normative beliefs have a powerful effect on individuals' attitudes and beliefs,^{32,33} this shift may lead to more widespread and potentially longer-lasting stigma reduction.

We do not claim that IU is, at present, a “safe and stigma-free zone,” but these results do suggest a positive impact of UBC2M on the college context. This is not to say that the CTP is without limitations. For an Internet-based survey administered to an entire college cohort, the response rate was high⁴⁸; however, we cannot assess effects among students who declined to participate. Indeed, participation may have been nonrandom, as those who completed both surveys had lower baseline stigma than did those not completing the follow-up. This does suggest attrition bias in our sample. Moreover, the overrepresentation of women and white students, although commonly reported in contemporary survey research, suggests that more tailored research and anti-stigma activity are in order. Furthermore, we did not have a control group. Although considered at great length (eg, other Big Ten Universities), the research team decided that scientific, logistic, and financial costs

TABLE 3 Results of Separate Multivariate Regressions of Student U Bring Change to Mind (UBC2M) Engagement (Active, Passive) on Prejudice, Discriminatory Predisposition, Campus Mental Health Cultural Perceptions, and Behaviors,^{a,b} College Toolbox Project, Indiana University (IU), 2015–2018 (N = 1,132)

Type of Engagement			Attitudes				Behavioral Predisposition		Perceptions of Culture		Behavior	
			Change in General Prejudice ^c		Change in College-Specific Prejudice ^c		Change in College-Specific Social Distance ^c		Favorable Campus MH Culture ^c		No. of MH Conversation Partners ^d	
			β	SE	β	SE	β	SE	β	SE	IRR	95% CI
With UBC2M	Active	No. of events attended	0.30*	0.14	0.27	0.16	0.27	0.22	1.29***	0.13	1.08	1.06–1.10
		No. of events attended squared	–0.06***	0.01	–0.05**	0.02	–0.05*	0.02	NS	NS	NS	NS
		Amount of contact	0.50*	0.26	–0.22**	0.08	–0.25	0.19	2.68***	0.18	1.20	1.16–1.23
	Passive	Amount of contact squared	–0.15*	0.07	–0.22**	0.08	NS	NS	NS	NS	NS	NS
		Correctly recognized logo	0.05	0.27	–0.24	0.31	0.21	0.42	5.56	0.40	1.43	1.32–1.54
		Types of exposure	–0.05	0.12	0.03	0.13	–0.26	0.18	2.94***	0.17	1.23	1.19–1.26

Note: IRR = incidence rate ratio; MH = mental health; NS = not significant; SE = standard error.

^aSeparate regressions were conducted to assess whether each type of engagement (eg, number of events attended) predicted each specific dependent variable (eg, change in general prejudice). Linear and polynomial terms for each engagement type were entered together in the same model. Polynomial terms are included where significant.

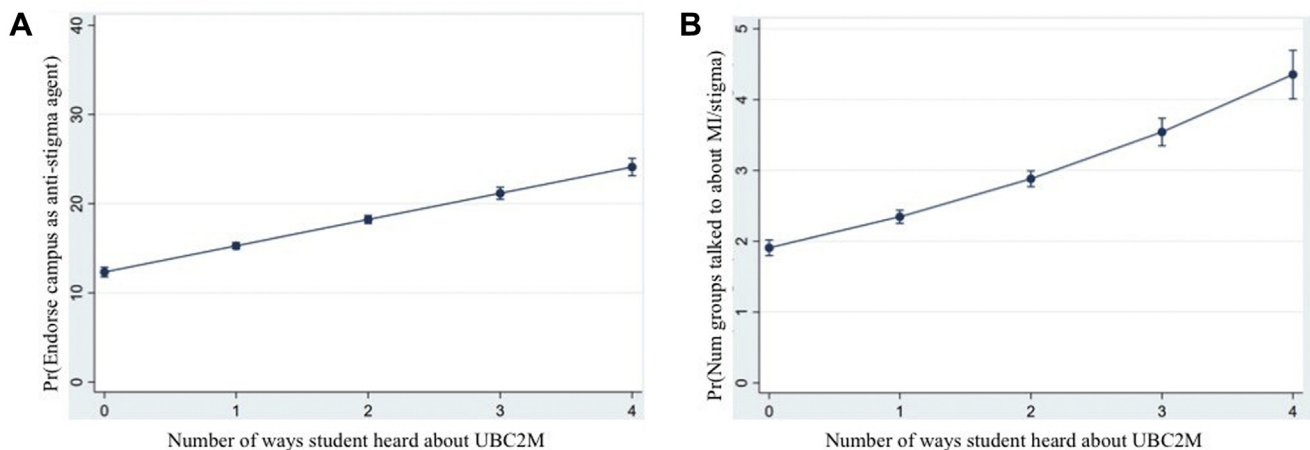
^bAll models adjusted for sex (male or female), age (in years), race (white or nonwhite), self-reported mental illness (yes or no), childhood socioeconomic status (high or low), and in-state status (yes or no).

^cOrdinary least-square regressions.

^dPoisson regressions.

*p < .05; **p < .01; ***p < .001.

FIGURE 2 Effect of Number of Ways in Which Respondents Heard About U Bring Change to Mind (UBC2M) on Students' Assessment of Campus Culture of Mental Health and the Number of Types of People With Whom Respondent Talked About Mental Illness and/or Stigma



Note: (A) Campus Mental Health Culture, Number of How Heard, College Toolbox Project, 2015–2018 ($N = 1,132$); (B) Number of Conversation Partners, Number of How Heard, College Toolbox Project, 2015–2018 ($N = 1,132$). MI = mental illness. Please note color figures are available online.

were prohibitive. In lieu of this, we focused on intra-individual change, which addresses time-invariant unobserved heterogeneity to reduce concerns about confounding effects. Although we cannot say with certainty that changes were due only to the UBC2M program, the nonlinear relationship between students' reports of awareness or attendance at UBC2M events and change were reassuring. It is also possible that passive exposure to UBC2M did not directly influence respondents' perceptions of IU's campus culture; rather, respondents who correctly remembered passive exposure to UBC2M might have been biased toward identifying the logo because they were more aware of MH issues. In contrast to that possibility, respondents who correctly identified the UBC2M logo at T2 did not differ in their baseline T1 prejudice. Again, this is reassuring but by no means conclusive. Finally, even if UBC2M diffuses stigma, it leaves out a critical group—those emerging adults who do not or cannot attend higher education. That group may be at even greater risk.

Social science theory and research offered a different pathway to stigma reduction—cohort replacement focusing on individuals in critical years of attitude and normative formation. Stigma has proved to be a formidable, stubborn aspect of contemporary US culture. Science has documented only temporary and minor change in response to traditional anti-stigma efforts. Colleges and universities, to a large extent, enroll emerging adults at peak age-risk for the onset of serious mental illnesses, where academic challenges and life transitions are stressful, and where the outcomes of failing to complete college has profound effects on the life course.^{40,49}

Yet, higher education not only holds the potential to disrupt stigma and to produce future leaders to build a culture of MH, but offers an immediate impetus for change as a by-product of changing demand from parents and students.

On one hand, UBC2M may be seen as unique among interventions because it is not “manualized.” That is precisely the point. The Toolbox created by UBC2M provides ideas, protocols, scientific justification, and models of assessments that can be performed by students. To be truly effective, each college or university must tailor these prototypes to their cultural context, providing more guides to the living library. On the other hand, UBC2M may not be seen as unique from other college club programs. UBC2M is a “deep touch” program requiring participation, even if tacit, from a range of faculty, staff, administrators, and a national organization. This contact is critical to sustainability and continuity.

UBC2M is only in the beginning stages, and it addresses only part of the problem. However, any anti-stigma effort must first establish a reasonable target. For UBC2M, issues of the nature, accessibility, or quality of campus services were ruled out of scope. UBC2M was designed to address the campus cultural climate in the short run, and perhaps to serve as a pathway to larger cultural change in the long run. Yet the NAS report² describes countries with successful stigma reduction efforts as having built a nationally networked program (eg, Australian Rotary Health engaged all local chapters; the Time To Change Program was backed by government funds). It is unlikely that this kind of public

governmental or private, nonprofit effort will take hold in the United States. It has not, to date. However, as one of its great treasures, America's system of higher education, despite its problems and patchwork of institutional types, stands as a likely source for building such a national change network. There can be no better time than now with the Millennial generation's outspoken views, greater tolerance of difference, and energy directed toward making the world a better place.⁵⁰

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