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Supplementary Materials for

A brief social-belonging intervention in college improves adult outcomes for black Americans

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Supplementary Materials

Methods

Participants: Additional Information

CONSORT diagram. The CONSORT diagram in Fig. S1 summarizes participation by study wave, treatment condition, and race. Through our repeated and extensive recruitment efforts, we were able to re-recruit 80 of 92 original participants for the Age 27 follow-up survey (87%). This represents 94% of the end-of-college follow-up study sample (68 of 72 participants, *8*) and an additional 12 participants who did not participate in that follow-up. Participants indicated as "no contact" never responded to our contact attempts and may or may not have received them. In addition, one participant started but did not finish the Age 27 follow-up survey despite multiple reminders. This participant is included in analyses for which they provided relevant data. Of the twelve original study participants who did not participate in the present study, two actively declined to participate, nine never responded to any contact attempts and may or may not have received any of them, and one was deceased. See Table S1 for key demographic factors of the study sample reported by race and treatment condition. As the table illustrates, none of these factors are significantly different by condition or the interaction between race and condition.

Attrition analyses. Study attrition was low and, as noted in the main text, did not vary by race, treatment condition, or their interaction, all *P*s<0.12. Overall, 92% of participants in the control condition started the follow-up (92% of Black participants; 92% of White participants), and 81% of participants in the treatment condition started the follow-up (83% of Black participants; 78% of White participants, but 82% of those still living).

To further examine sample attrition, we tested for differences between those who started the follow-up survey and those who did not on a number of baseline variables collected prior to the delivery of the intervention in students' first year of college. See Tables S2 and S3. Across 96 tests, only one reached significance: students who had expressed higher academic identification were more likely to take part in the Age 27 follow-up (*B*=0.53, *P*=0.05).

As noted above, one person started the Age 27 follow-up survey but did not finish it. The attrition analyses do not substantively change if we examine participants who finished the survey rather than started it, although the significant difference for academic identification becomes marginal.

Participants' End-of-College Recall of the Original Study

Students' recall of and beliefs about the original intervention at the time of the end-of-college follow-up are discussed in the previously published report of college outcomes (*10*). Briefly, while most students (79%) said they remembered participating in the study three years earlier, few (8%) could recall the key content of the intervention or control materials they had read. Further, only 14% reported that the study had "any" effect on their college experience. Because so few students recalled the key content of the intervention or attributed any effect to it at the end of college, we did not examine recall again in the present Age 27 follow-up.

Complete Results for Primary Outcomes

For full reporting of the results for the primary outcomes and the mentorship mediator by race, treatment condition, and their interaction, see Table S4. Results are reported for the

composite outcomes as well as each individual measure that contributes to the composites. Effect size is provided in terms of Cohen's *d* for results from linear regressions (using the formula $d=2t/\sqrt{df}$; *45*) and in terms of an odds ratio (*OR*) for results from logistic regressions.

Results for Community Involvement and Leadership by Activity Type

In the main text, we reported overall effects for community involvement and leadership. For a breakdown by activity type, see Table S5.

Mediation Analyses

Exploring simultaneous mediation for community involvement and leadership. Given the mediation results discussed in the main text, we also examined whether post-intervention college grade point average (GPA) and mentorship might simultaneously mediate the treatment effect for community and leadership. There was not evidence for this. In the simultaneous model, neither mediator was statistically significant; 0 was included in the confidence interval for the indirect effect of GPA (*B*=0.30, *SE*=0.21, *CI*=[-0.03, 0.78]) and of mentorship (*B*=-0.003, *SE*=0.31, *CI*=[-0.64, 0.65]).

White participants. Zero-order correlations revealed few significant correlations between post-intervention GPA or college mentorship and the primary Age 27 outcomes for White participants. See Table S6B. Therefore, we do not report mediation analyses for White participants.

Specification Curves

The survey for the Age 27 follow-up study included multiple measures of broad dimensions of interest in order to maximize our opportunity to learn from this sample and the time-intensive data collection. We combined individual scales into composites to reflect the multi-faceted nature of the key outcomes and to reduce the likelihood of false positives arising from multiple tests. In the interest of transparency, we report analyses both for key outcomes and for their component measures (see Figs. 1, 2A; Table S4).

That said, there were multiple reasonable ways in which the composites could be constructed (e.g., for the psychological well-being variable, the two life satisfaction measures could have been averaged separately with the other measures to form the composite rather than being combined first and then averaged with the other measures) and multiple ways in which baseline covariates (e.g., gender, first-year fall GPA, academic identification) could have been included in models, necessarily creating researcher degrees of freedom. Therefore, we use specification curve analyses (*43*) to examine all reasonable specifications of the key outcomes and to examine the robustness of the reported results. For each specification curve, we were most interested in the simple effect of condition for Black participants, as this was the critical test of our main hypothesis. See Table S8, Column 2, for the total number of "reasonable specifications" of this test for each key outcome.

For each outcome, we examined the percent of these specifications that were in the predicted direction—that is, in which treated Black participants reported better outcomes than their control counterparts—and the percent of these specifications that were *both* in the predicted direction and had observed *P*-values that were statistically significant at the $P<0.05$ level. See Table S8, Columns 3 and 5.

To quantify the robustness of the results to different specifications, we conducted a permutation test for each outcome. The permutation test indicates whether the pattern of results

across specifications is more consistent than would be produced by chance. To estimate chance results, we began with the real data, randomly shuffled the condition and race variables so they were not systematically related to the outcomes of interest, and then conducted the specification curve analyses again for each outcome. This process was conducted 10,000 times. These simulated data allow us to estimate the probability that the specification curve as a whole would have yielded—by chance—results at least as extreme as the real data.

The results of the permutation tests with regard to the percentage of coefficients in the hypothesized direction and the percentage of statistically significant results in the hypothesized direction are summarized in Table S8, Columns 4 and 6. They indicate that the results reported in the main text are robust to alternate specifications. The results of the specification curves from the real data for the career satisfaction and success, general psychological well-being, community involvement and leadership, and mentorship composites were more extreme than the results from the simulated data, providing support that the observed effects were not due to chance, all *P*s<0.03. For physical health, the permutation test results were consistent with the non-significant finding reported in the main text; many of the simulated datasets yielded results as or more extreme than those generated by the real data, *P*s>0.25. See OSF for sample code and more detailed reporting of these results.

Results

Connection with Alma Mater

Composite: Connection to alma mater. Participants' connection with their alma mater is the only additional outcome for which we computed a composite. The composite comprised three measures assessing different aspects of participants' relationship with their alma mater, which we standardized and then averaged to create the composite (α=0.62). See Table S9 for results.

Identification with alma mater. We measured participants' identification with the university they attended and graduated from with an organizational identification scale developed specifically to measure alumni identification with their alma mater (*46*; sample item: "When someone criticizes [SCHOOL], it feels like a personal insult") We used five of the six items from the scale. Items were on a 1-5 scale (*strongly disagree* to *strongly agree*, α=0.76) and the average was computed. See pp. 68-70 of the Survey Instrument.

Involvement with alma mater. To measure participants' involvement with their alma mater, we consulted with alumni of the university at which the original intervention study (*10*) was conducted; these people had not participated in the intervention. From these conversations, we developed 11 items to assess the degree of participants' ongoing interactions with the school. Questions assessed how frequently the participant attended college reunions, wore or displayed items associated with the school, informally promoted the school to prospective students or their parents, attended athletic events, and read the alumni magazine. Items were assessed on a 1-4 scale (*never* to *regularly;* α=0.67) and the average was computed. See p. 71 of the Survey Instrument.

Donations to alma mater. We assessed the extent to which participants had donated to their alma mater since graduating as an undergraduate with two items, one assessing the frequency of donations on a 1-4 scale ("Since graduation, I have donated money to [SCHOOL]"; *never* to *regularly*) and another assessing the total amount of donations on a 1-8 scale ("What is the total amount of money you have donated to [SCHOOL] since you graduated from

undergrad?"; *I have not donated to [SCHOOL]* to *$2,000 or more*). We rescaled the latter item so that it was also on a 1-4 scale and then averaged the two items (r=0.78). See p. 72 of the Survey Instrument.

Cognitive Accessibility of Racial Stereotypes and of Self-Doubt

At the very beginning of the survey for the present study, we measured cognitive accessibility of negative racial stereotypes, neutral racial stereotypes, and self-doubt. Participants were asked to fill in the blanks in partially completed word stems as quickly as possible, some of which could be completed with words relevant or nonrelevant to race and self-doubt. An analogous outcome assessed at the end of college had shown benefits (i.e., reductions in accessibility; *8*).

Accessibility of negative racial stereotypes was assessed based on how participants completed word stems related to negative stereotypes of Black people, including references to slavery and poverty (e.g., W E L __ __ __ __ could be filled with "WELFARE" or "WELCOME"). For the sake of completeness, we also examined whether participants completed word stems with race-related but neutral words (e.g., __ __ A C K could be filled in with "BLACK"). Accessibility of self-doubt was assessed based on how participants completed word stems relevant to self-doubt (e.g., L O __ __ __ could be filled with "LOSER").

This was the first task participants completed in the follow-up survey. Out of concern for how long the task might seem to a participant, we abbreviated it from either 40 (*10*, Cohort 1) or 46 (*10*, Cohort 2) word stems to 25 word stems. In addition, when examining participants' responses, we discovered that some participants spontaneously used words we did not anticipate but that could be related to negative racial stereotypes (e.g., __ __ A C K was filled in with "CRACK") or self-doubt (e.g., L O __ __ __was filled in with "LOUSY"). Thus, we report both a conservative test with only the items used in the end-of-college implementation of the measure ("ex ante", *10*) and a more inclusive version including these additional items ("all"). Research assistants coded participants' responses and were blind to their race and treatment condition while doing so.

Other Secondary Outcomes: Clinical Measures of Mental Health

Anxiety. We measured anxiety with the 7-item GAD-7 (*47*; sample item: "Over the last two weeks, how often have you been bothered by the following problems?: Worrying too much about different things"). All items were assessed on a 1-4 scale (*not at all* to *nearly every day*; α=0.90), and we computed the sum. Per GAD-7 administration guidelines, we also asked a question about the extent to which the difficulties mentioned in the seven main items interfered with daily functioning but did not include it in the final sum score. See p. 38 of the Survey Instrument. See Table S9 for results.

Depression. We measured depression with the CESD-10 (*48*; sample item: "Mark how often you have felt this way during the past week: I felt depressed"). All items were assessed on a 1-3 scale (*hardly ever or never* to *much or most of the time*; α=0.78), and we computed the sum. See p. 40 of the Survey Instrument. See Table S9 for results.

Other Secondary Outcomes: Measures of Social Support and Loneliness

Social support. We measured social support with six items from the Interpersonal Support Evaluation List (*49*; sample item: "If I wanted to have lunch with someone, I could easily find someone to join me") that we deemed particularly relevant for this sample. All items

were assessed on a 1-4 scale (*definitely false* to *definitely true*, α=0.79), and we computed the average. See p. 30 of the Survey Instrument. See Table S9 for results.

Loneliness. We measured loneliness with the Three Item Loneliness Scale (*50*; sample item: "How often do you feel isolated from others?") each on a 1-3 scale (*hardly ever* to *often*; α=0.71), and computed the average. See p. 37 of the Survey Instrument. See Table S9 for results.

Other Secondary Outcomes: Measures of Perceived Social Status

We measured perceived social status with the two "ladder measures" of the MacArthur Scale of Subjective Social Status (*51*). The measures ask people to indicate where on a pictorial "social ladder" they stand relative to other people in the United States and relative to others in their communities. See pp. 42 and 43, respectively, of the Survey Instrument. There are 10 rungs on each ladder, with higher numbers corresponding to higher social positions. The two items were only slightly correlated (r=0.18) and are reported separately. See Table S9 for results.

Race-Related Variables

Other items examined if the intervention affected participants' level of racial identification, concern about negative stereotypes or race-based rejection, or belief in meritocracy. We did not expect the intervention to affect these variables. Results are reported in Table S9. (For identification and stereotype threat, we included analogous measures for gender to mask the focus on race.)

Racial identification. We measured racial identification with two items ("My racial/ethnic identity is an important part of who I am" and "How important is your racial/ethnic background to you?"), each on a 1-7 scale (*strongly disagree/not at all important* to *strongly agree/extremely important*; r=0.74), and computed the average. See p. 83 of the Survey Instrument.

Race-based stereotype threat. We measured race-based stereotype threat with three items (sample item: "I worry that people will draw conclusions about my racial/ethnic group based on my performances"), each on a 1-7 scale (*strongly disagree* to *strongly agree*; r=0.91), and computed the average. See pp. 85-86 of the Survey Instrument.

Race-based rejection sensitivity (RS-Race). We assessed RS-Race with six scenarios drawn from prior research (*11*). For example, one read:

> "Imagine you have just completed a job interview over the telephone. You are in good spirits because the interviewer seemed enthusiastic about your application. Several days later you complete a second interview in person. Your interviewer informs you that they will let you know about their decision soon."

Each scenario was followed by two questions, one about concern/anxiety regarding a negative outcome because of the participant's race/ethnicity (e.g., "How concerned/anxious would you be that you might not be hired because of your race/ethnicity?") and one about the participant's expectation of experiencing a negative outcome because of their race/ethnicity (e.g., "I would expect that I might not be hired because of my race/ethnicity"). In total, there were twelve items, each measured a 1-7 scale. We used the recommended method for calculating a total score (*11*). See pp. 87-90 of the Survey Instrument.

Belief in meritocracy. We measured participants' belief in meritocracy in professional settings in the United States with three items (sample item: "In my experience, people in professional settings in America are treated fairly"), each on a 1-7 scale (*strongly disagree* to *strongly agree*; α=0.90), and computed the average. See pp. 60-61 of the Survey Instrument.

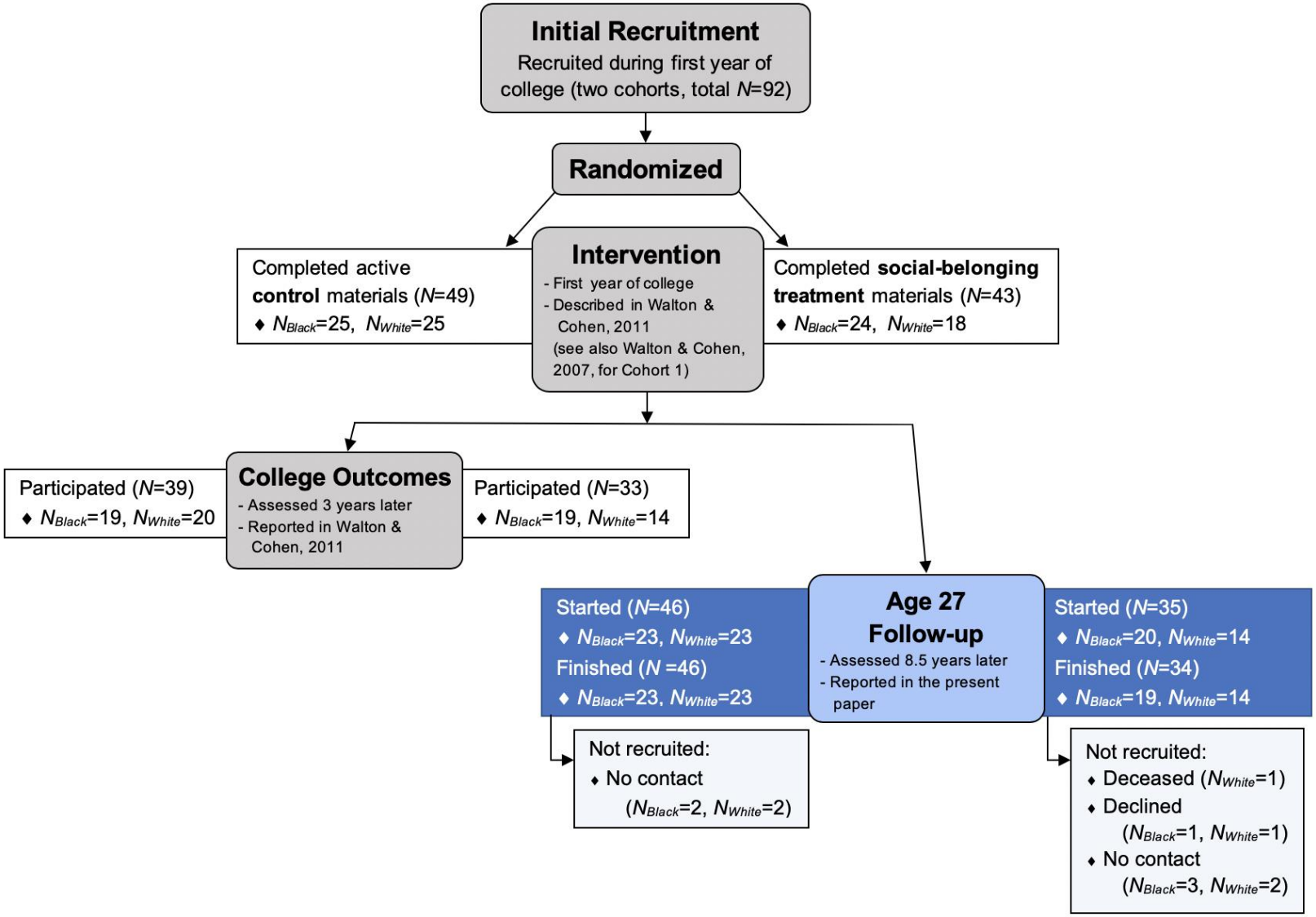

Figure S1. CONSORT diagram. The present paper reports results from the Age 27 Follow-up.

	Black Participants				White Participants				Main Effect of Race				Main Effect of Treatment				Race × Treatment Interaction	
	C *N*=23	B *N*=19	Simple Effect		C *N*=23	B *N*=14	Simple Effect		Black *N*=42	White *N*=37	Test		C *N*=46	B *N*=33	Test			
Variable	***M* or % (*SD*)**	***M* or % (*SD*)**	***b***	***P***	***M* or % (*SD*)**	***M* or % (*SD*)**	***b***	***P***	***M* or % (*SD*)**	***M* or % (*SD*)**	***b***	***P***	***M* or % (*SD*)**	***M* or % (*SD*)**	***b***	***P***	***b***	***P***
Gender: Woman[1]	80%	58%	-1.05	0.11	48%	67%	0.77	0.23	69%	56%	0.55	0.22	64%	62%	-0.14	0.76	-1.82	0.05
Age[2]	27.38 (1.42)	27.25 (1.41)	-0.12	0.79	27.58 (1.27)	27.46 (1.10)	-0.12	0.82	27.32 (1.40)	27.54 (1.20)	-0.21	0.54	27.48 (1.33)	27.34 (1.28)	-0.12	0.73	0.00	1.00
Intervention to Follow-up: Years[1]	8.54 (1.28)	8.42 (1.14)	-0.13	0.74	8.42 (1.29)	8.69 (1.20)	0.28	0.51	8.49 (1.20)	8.52 (1.25)	-0.07	0.80	8.48 (1.27)	8.53 (1.15)	0.08	0.79	-0.40	0.48
Full-Time Employed	61%	53%	-0.34	0.59	43%	50%	0.26	0.70	57%	46%	0.40	0.38	52%	52%	-0.04	0.94	-0.60	0.52
Full-Time Student	35%	47%	0.52	0.41	43%	36%	-0.33	0.64	50%	41%	0.06	0.90	39%	42%	0.10	0.83	0.85	0.37
Median Annual Salary[3]	$40,000 to $49,999	$20,000 to $29,999	-0.49	0.70	$30,000 to $39,999	$40,000 to $49,999	-0.73	0.60	$40,000 to $49,999	$40,000 to $49,999	-0.13	0.89	$40,000 to $49,999	$30,000 to $39,999	-0.61	0.52	0.24	0.90
Voted in 2008 Presidential Election	83%	79%	-0.24	0.76	83%	93%	1.01	0.39	81%	86%	-0.62	0.38	83%	85%	0.39	0.59	-1.24	0.38
In a Long-Term Romantic Relationship	52%	53%	0.02	0.98	57%	64%	0.33	0.64	52%	59%	-0.33	0.48	54%	58%	0.17	0.71	-0.31	0.74

Note. Results are from linear or logistic regression models that include race (contrast-coded), treatment condition (contrast-coded), and their interaction.
[1] One additional Black belonging participant had data for these demographic variables (collected in a previous study wave) but no others.
[2] Not all participants had data for age. Black control: *N*=20, Black belonging: *N*=16, White control: *N*=20, White belonging: *N*=10
[3] For this outcome only, we report the median range rather than the mean. However, for the analysis, we still conduct a standard linear regression.

Table S1. Sample description. Key demographic factors by race and treatment condition (C=Control, B=Belonging) for participants in Age 27 follow-up.

	Black Participants						White Participants						Main Effect of Started		Race × Started Interaction	
	Not Started		Started		Simple Effect		Not Started		Started		Simple Effect					
Baseline Variable	***N***	***M or % (SD)***	***N***	***M or % (SD)***	***B***	***P***	***N***	***M or % (SD)***	***N***	***M or % (SD)***	***B***	***P***	***B***	***P***	***B***	***P***
Gender: Woman	4	67%	30	70%	0.14	0.87	3	50%	21	57%	0.27	0.76	0.21	0.75	-0.13	0.92
Academic Identification	6	4.75 (1.17)	43	5.7 (0.81)	0.95	0.01	6	5.25 (0.76)	37	5.37 (0.87)	0.12	0.75	0.53	0.05	0.83	0.12
Perception of Racial Prejudice	5	3.80 (1.10)	43	4.3 (0.67)	0.50	0.12	6	4.17 (0.41)	35	3.94 (0.64)	-0.22	0.45	0.14	0.52	0.73	0.10
Achievement Behavior	6	-0.22 (0.50)	43	-0.03 (0.58)	0.19	0.44	6	-0.05 (0.53)	37	-0.03 (0.54)	0.02	0.92	0.11	0.54	0.17	0.63
Race Identification	6	5.33 (1.44)	43	4.92 (1.59)	-0.41	0.55	6	2.54 (0.87)	34	3.17 (1.61)	0.63	0.37	0.11	0.82	-1.04	0.29
Stereotype Threat	6	4.00 (1.81)	43	3.91 (1.87)	-0.09	0.89	6	1.46 (0.64)	34	1.88 (1.00)	0.42	0.54	0.16	0.74	-0.51	0.59
RS-Race	6	7.35 (4.72)	43	6.68 (5.15)	-0.67	0.69	6	1.26 (0.59)	35	1.70 (1.25)	0.44	0.80	-0.11	0.92	-1.11	0.64
Stigma Consciousness	6	4.81 (0.54)	43	4.48 (0.98)	-0.33	0.42	6	3.27 (0.92)	35	3.50 (0.94)	0.23	0.58	-0.05	0.86	-0.56	0.34
Math SAT Score	5	688.00 (54.50)	42	687.14 (66.05)	-0.86	0.97	6	763.33 (53.91)	37	755.95 (40.03)	-7.39	0.76	-4.12	0.82	6.53	0.86
Verbal SAT Score	5	728.00 (66.11)	42	710.71 (55.89)	-17.29	0.48	6	743.33 (66.53)	37	743.51 (41.31)	0.18	0.99	-8.55	0.61	-17.47	0.60
Overall SAT Score	6	1403.33 (95.85)	43	1398.37 (91.47)	-4.96	0.89	6	1506.67 (95.22)	37	1499.46 (56.07)	-7.21	0.84	-6.08	0.81	2.25	0.96
First-Year Fall GPA	6	3.20 (0.47)	41	3.28 (0.47)	0.08	0.65	6	3.42 (0.28)	36	3.49 (0.36)	0.07	0.72	0.07	0.57	0.02	0.94

Note. Results are from linear or logistic regression models that include race (contrast-coded), whether the participant started the follow-up (contrast-coded), and their interaction.

Table S2. Attrition analyses by race. Comparison of baseline variables based on starting the Age 27 follow-up.

Baseline Variable	Black Participants						Control Participants						White Participants						Main Effect of Race						Belonging Participants						Main Effect of Treatment				Race × Treatment × Started Interaction	
	Not Started		Started		Simple Effect		Not Started		Started		Simple Effect		Not Started		Started		Simple Effect		Not Started		Started		Simple Effect		Not Started		Started		Simple Effect		Main Effect of Started					
	N	*M or % (SD)*	*N*	*M or % (SD)*	*B*	*P*	*N*	*M or % (SD)*	*N*	*M or % (SD)*	*B*	*P*	*N*	*M or % (SD)*	*N*	*M or % (SD)*	*B*	*P*	*N*	*M or % (SD)*	*N*	*M or % (SD)*	*B*	*P*	*N*	*M or % (SD)*	*N*	*M or % (SD)*	*B*	*P*	*B*	*P*	*B*	*P*	*B*	*P*
Gender: Woman	3	75%	29	63%	-0.57	0.64	4	50%	22	64.7%	0.61	0.44																			0.02	0.97	1.17	0.41
Academic Identification	4	5.12 (0.63)	46	5.65 (0.86)	0.52	0.25	8	4.94 (1.15)	34	5.40 (0.83)	0.47	0.18																			0.50	0.08	-0.06	0.92
Perception of Racial Prejudice	4	3.50 (1.00)	45	4.07 (0.75)	0.57	0.11	7	4.29 (0.49)	33	4.24 (0.56)	-0.04	0.88																			0.26	0.25	-0.61	0.18
Achievement Behavior	4	-0.09 (0.55)	46	-0.13 (0.54)	-0.04	0.88	8	-0.16 (0.51)	34	0.11 (0.56)	0.27	0.22																			0.11	0.53	0.31	0.38
Race Identification	4	3.62 (1.31)	45	4.23 (1.85)	0.61	0.53	8	4.09 (2.13)	32	4.03 (1.79)	-0.06	0.93																			0.27	0.65	-0.67	0.58
Stereotype Threat	4	2.38 (1.83)	45	2.94 (1.99)	0.57	0.56	8	2.91 (1.96)	32	3.11 (1.65)	0.20	0.79																			0.38	0.53	-0.37	0.77
RS-Race	4	5.59 (5.71)	45	4.24 (4.27)	-1.35	0.58	8	3.66 (4.08)	33	4.72 (5.13)	1.06	0.56																			-0.15	0.92	2.41	0.43
Stigma Consciousness	4	3.80 (1.07)	45	4.02 (1.05)	0.22	0.70	8	4.16 (1.14)	33	4.07 (1.13)	-0.09	0.84																			0.06	0.86	-0.30	0.67
Math SAT Score	3	756.67 (75.06)	46	726.74 (63.07)	-29.93	0.44	8	718.75 (62.66)	33	709.09 (67.24)	-9.66	0.71																			-19.79	0.40	20.27	0.66
Verbal SAT Score	3	746.67 (68.07)	46	727.83 (59.74)	-18.84	0.56	8	732.5 (66.06)	33	723.64 (39.43)	-8.86	0.68																			-13.85	0.47	9.98	0.80
Overall SAT Score	4	1462.50 (107.20)	46	1454.57 (97.04)	-7.93	0.87	8	1451.25 (112.43)	34	1432.35 (84.28)	-18.90	0.61																			-13.42	0.66	-10.96	0.86
First-Year Fall GPA	4	3.27 (0.27)	45	3.38 (0.42)	0.12	0.60	8	3.33 (0.45)	32	3.37 (0.45)	0.04	0.82																			0.08	0.58	-0.08	0.78

Note. Results are from linear regression models that include treatment condition (contrast-coded), whether the participant started the follow-up survey (contrast-coded), and their interaction.

Table S3. Attrition analyses by treatment condition. Comparison of baseline variables based on starting the Age 27 follow-up.

	C *N*=23	B *N*=19	Simple Effect			C *N*=23	B *N*=14	Simple Effect			Black *N*=42	White *N*=37	Test			C *N*=46	B *N*=33	Test			Treatment Interaction	
Outcome	***M or % (SD)***	***M or % (SD)***	***B***	***P***	***d* or *OR***	***M or % (SD)***	***M or % (SD)***	***B***	***P***	***d* or *OR***	***M or % (SD)***	***M or % (SD)***	***B***	***P***	***d* or *OR***	***M or % (SD)***	***M or % (SD)***	***B***	***P***	***d* or *OR***	***B***	***P***
Career Satisfaction and Success	-0.32 (0.46)	0.42 (0.8)	0.74	< 0.01	1.02	-0.15 (0.86)	0.13 (0.80)	0.28	0.26	0.38	0.02 (0.73)	-0.05 (0.84)	0.06	0.71	0.09	-0.24 (0.69)	0.30 (0.80)	0.51	< 0.01	0.69	0.46	0.18
Job Satisfaction	4.48 (0.66)	5.01 (0.88)	0.53	0.02	0.73	4.70 (0.74)	5.07 (0.65)	0.38	0.14	0.52	4.71 (0.8)	4.84 (0.72)	-0.14	0.41	-0.19	4.58 (0.70)	5.04 (0.77)	0.46	0.01	0.61	0.15	0.66
Workplace Belonging Uncertainty	3.57 (0.96)	2.81 (1.19)	-0.76	0.05	-0.65	3.77 (1.25)	3.43 (1.43)	-0.34	0.40	-0.29	3.23 (1.12)	3.64 (1.31)	-0.42	0.14	-0.35	3.67 (1.10)	3.08 (1.31)	-0.55	0.05	-0.46	-0.42	0.46
Perceived Success	46.96 (14.9)	64.74 (19.54)	17.78	< 0.01	0.93	52.61 (22.4)	52.86 (20.91)	0.25	0.97	0.01	55.00 (19.16)	52.70 (21.56)	3.11	0.49	0.16	49.78 (19.03)	59.7 (20.69)	9.01	0.05	0.46	17.53	0.05
Perceived Future Potential	52.61 (10.54)	68.95 (20.79)	16.34	0.01	0.89	60.00 (21.53)	64.29 (21.02)	4.29	0.50	0.23	60.00 (17.81)	61.62 (21.15)	-1.36	0.75	-0.07	56.3 (17.17)	66.97 (20.69)	10.31	0.02	0.55	12.05	0.16
Psychological Well-Being	-0.42 (0.77)	0.3 (0.78)	0.72	< 0.01	0.93	0.09 (0.86)	0.14 (0.75)	0.06	0.84	0.07	-0.09 (0.85)	0.11 (0.81)	-0.17	0.35	-0.22	-0.17 (0.85)	0.23 (0.76)	0.39	0.04	0.49	0.67	0.07
Subjective Happiness	4.49 (1.22)	5.14 (1.36)	0.66	0.10	0.53	4.92 (1.27)	4.73 (1.17)	-0.19	0.65	-0.15	4.79 (1.31)	4.85 (1.22)	-0.01	0.97	-0.01	4.71 (1.25)	4.97 (1.28)	0.23	0.43	0.18	0.85	0.15
Life Satisfaction	4.44 (1.06)	5.41 (0.87)	0.97	< 0.01	1.00	5.08 (0.99)	5.17 (1.03)	0.09	0.78	0.09	4.88 (1.08)	5.11 (0.99)	-0.20	0.38	-0.20	4.76 (1.06)	5.31 (0.94)	0.53	0.02	0.53	0.87	0.06
Perceived Stress	2.77 (0.78)	2.2 (0.75)	-0.57	0.02	-0.77	2.33 (0.81)	2.14 (0.69)	-0.18	0.48	-0.24	2.51 (0.81)	2.26 (0.76)	0.25	0.16	0.32	2.55 (0.82)	2.17 (0.71)	-0.38	0.03	-0.49	-0.39	0.27
Physical Health	-0.24 (1.18)	0.12 (0.41)	0.36	0.14	0.47	0.03 (0.70)	0.17 (0.50)	0.14	0.60	0.18	-0.08 (0.92)	0.09 (0.63)	-0.16	0.38	-0.20	-0.10 (0.97)	0.14 (0.44)	0.25	0.17	0.31	0.22	0.54
Self-Assessed General Health	3.78 (0.86)	3.95 (0.6)	0.16	0.48	0.22	3.77 (0.77)	4.10 (0.72)	0.33	0.19	0.44	3.86 (0.75)	3.89 (0.76)	-0.07	0.70	-0.09	3.77 (0.81)	4.01 (0.65)	0.25	0.15	0.33	-0.17	0.62
Sick Days Reported In Past Three Months	1 (2.39)	0.37 (0.6)	-0.63	0.24	-0.37	0.57 (1.90)	0.57 (1.02)	0.01	0.99	0.00	0.71 (1.83)	0.57 (1.61)	0.12	0.77	0.07	0.78 (2.15)	0.45 (0.79)	-0.31	0.43	-0.18	-0.64	0.43
Doctor Visits Reported in Past Three Months	1.52 (2.25)	0.74 (1.24)	-0.78	0.10	-0.52	0.61 (1.20)	0.64 (0.63)	0.03	0.95	0.02	1.17 (1.89)	0.62 (1.01)	0.50	0.16	0.33	1.07 (1.84)	0.70 (1.02)	-0.38	0.29	-0.24	-0.82	0.25
Community Involvement and Leadership	1.22 (1.48)	2.37 (2.11)	1.15	0.03	0.72	0.91 (1.04)	1.71 (1.94)	0.80	0.15	0.49	1.74 (1.86)	1.22 (1.47)	0.48	0.21	0.29	1.07 (1.27)	2.09 (2.04)	0.98	0.01	0.59	0.35	0.64
Number of Domains 'Very' Involved In	0.35 (0.71)	1 (1.05)	0.65	0.02	0.78	0.48 (0.59)	0.64 (1.08)	0.16	0.57	0.19	0.64 (0.93)	0.54 (0.80)	0.11	0.56	0.13	0.41 (0.65)	0.85 (1.06)	0.41	0.04	0.48	0.49	0.22
Number of Domains with Leadership Role	0.87 (1.36)	1.37 (1.64)	0.5	0.20	0.41	0.43 (0.79)	1.07 (1.00)	0.64	0.13	0.51	1.10 (1.49)	0.68 (0.91)	0.37	0.20	0.29	0.65 (1.12)	1.24 (1.39)	0.57	0.05	0.45	-0.14	0.81
College Mentorship	-0.34 (0.64)	0.32 (0.52)	0.67	< 0.01	1.00	-0.08 (0.74)	0.26 (0.83)	0.34	0.15	0.49	-0.04 (0.67)	0.05 (0.78)	-0.10	0.54	-0.14	-0.21 (0.70)	0.30 (0.66)	0.50	< 0.01	0.73	0.33	0.29
Had General Mentor[1]	78%	84%	0.39	0.63	1.48	65%	86%	1.16	0.19	3.20	81%	73%	0.27	0.65	1.31	72%	85%	0.78	0.19	2.18	-0.77	0.52
Had Academic Mentor[1]	43%	84%	1.94	0.01	6.93	61%	64%	0.15	0.84	1.16	62%	62%	0.19	0.71	1.21	52%	76%	1.04	0.04	2.83	1.79	0.08
Mentorship Continued Post-College[1]	4%	37%	2.55	0.02	12.83	22%	57%	1.57	0.03	4.80	19%	35%	-1.32	0.05	0.27	13%	45%	2.06	< 0.01	7.85	0.98	0.47
Importance of 'Most Important' Mentorship	2.87 (1.29)	4.11 (1.15)	1.24	< 0.01	1.04	3.65 (1.19)	3.64 (1.22)	-0.01	0.98	-0.01	3.43 (1.36)	3.65 (1.18)	-0.16	0.57	-0.13	3.26 (1.29)	3.91 (1.18)	0.61	0.03	0.50	1.25	0.03

Note. Results are from linear or logistic regression models that include condition (contrast-coded), race (contrast-coded), and their interaction. Effect size measures are either Cohen's *d* or the odds ratio.
[1]Results are from a logistic regression, and thus the effect size measure is an odds ratio.

Table S4. Results for primary outcomes. Primary outcomes by race and treatment condition (C=Control, B=Belonging).

	Black Participants				White Participants				Main Effect of Race				Main Effect of Treatment				Race x Treatment Interaction	
	C *N*=23	B *N*=19	Simple Effect		C *N*=23	B *N*=14	Simple Effect		Black *N*=42	White *N*=37	Test		C *N*=46	B *N*=33	Test			
Type of Activity	***M* (*SD*)**	***M* (*SD*)**	***B***	***P***	***M* (*SD*)**	***M* (*SD*)**	***B***	***P***	***M* (*SD*)**	***M* (*SD*)**	***B***	***P***	***M* (*SD*)**	***M* (*SD*)**	***B***	***P***	***B***	***P***
Sports or games teams/clubs	0.22 (0.42)	0.16 (0.37)	-0.06	0.73	0.26 (0.54)	0.5 (0.85)	0.24	0.20	0.19 (0.40)	0.35 (0.68)	-0.19	0.13	0.24 (0.48)	0.30 (0.64)	0.09	0.48	-0.30	0.24
Literary, arts, or historical societies, boards, or groups	0.04 (0.21)	0.16 (0.5)	0.11	0.36	0.13 (0.34)	0.14 (0.53)	0.01	0.93	0.10 (0.37)	0.14 (0.42)	-0.04	0.69	0.09 (0.28)	0.15 (0.51)	0.06	0.49	0.10	0.58
Social organizations (e.g., special-interest groups, meetup groups)	0.22 (0.42)	0.47 (0.77)	0.26	0.10	0.09 (0.42)	0 (0)	-0.09	0.61	0.33 (0.61)	0.05 (0.33)	0.30	0.01	0.15 (0.42)	0.27 (0.63)	0.08	0.46	0.34	0.14
Community, health, education, conservation or outreach activities (e.g., service organizations)	0.13 (0.34)	0.47 (0.77)	0.34	0.05	0.22 (0.42)	0.36 (0.63)	0.14	0.45	0.29 (0.61)	0.27 (0.51)	0.01	0.91	0.17 (0.38)	0.42 (0.71)	0.24	0.06	0.20	0.42
Cultural organizations (e.g., related to ethnicity, race, class, sexual orientation, etc.)	0.22 (0.52)	0.74 (0.87)	0.52	0.004	0 (0)	0.21 (0.58)	0.21	0.27	0.45 (0.74)	0.08 (0.36)	0.37	0.01	0.11 (0.38)	0.52 (0.80)	0.37	0.01	0.31	0.24
Professional or trade organizations	0.22 (0.42)	0.21 (0.54)	-0.01	0.96	0.13 (0.46)	0.29 (0.61)	0.16	0.36	0.21 (0.47)	0.19 (0.52)	0.01	0.96	0.17 (0.44)	0.24 (0.56)	0.07	0.52	-0.16	0.48
Political organizations or local government	0 (0)	0.05 (0.23)	0.05	0.54	0.04 (0.21)	0.14 (0.53)	0.10	0.29	0.02 (0.15)	0.08 (0.36)	-0.07	0.29	0.02 (0.15)	0.09 (0.38)	0.08	0.23	-0.05	0.71
Religious activities (not including worship services)	0.17 (0.39)	0.11 (0.46)	-0.07	0.52	0.04 (0.21)	0.07 (0.27)	0.03	0.81	0.14 (0.42)	0.05 (0.23)	0.08	0.30	0.11 (0.31)	0.09 (0.38)	-0.02	0.80	-0.10	0.55

Note. Results are from linear models that include condition (contrast-coded), race (contrast-coded), and their interaction.

Table S5. Community involvement and leadership results by activity type. Participants' involvement in and leadership of different types of community activities after college graduation by race, treatment condition (C=Control, B=Belonging), and their interaction. Each activity type is on a 0-2 scale, with *0* indicating that participants reported neither significant involvement in that activity type nor leadership in it, *1* indicating either significant involvement or leadership but not both, and *2* indicating both significant involvement and leadership.

	M **(*SD*)**	**1**	**2**	**3**	**4**
(A) Black Participants Only					
1. Post-Intervention College GPA	3.41 (0.41)	—			
2. College Mentorship	-0.04 (0.67)	.35* [-.01, .61]	—		
3. Career Satisfaction and Success	0.02 (0.73)	.38* [.04, .63]	.54** [.28, .72]	—	
4. Psychological Well-Being	-0.09 (0.85)	.23 [-.11, .53]	.65** [.43, .80]	.61** [.38, .77]	—
5. Community Involvement and Leadership	1.74 (1.86)	.35* [.01, .61]	.38* [.09, .61]	.26 [-.05, .52]	.21 [-.10, .48]
(B) White Participants Only					
1. Post-Intervention College GPA	3.62 (0.27)	—			
2. College Mentorship	0.05 (0.78)	.01 [-.35, .36]	—		
3. Career Satisfaction and Success	-0.05 (0.84)	.37* [.02, .64]	-.05 [-.37, .27]	—	
4. Psychological Well-Being	0.11 (0.81)	.13 [.02, .64]	-.08 [-.39, .25]	.49** [.20, .70]	—
5. Community Involvement and Leadership	1.22 (1.47)	.20 [-.17, .52]	.29 [-.04, .56]	.28 [-.05, .56]	.06 [-.27, .37]

Note. Results are from bivariate correlation analyses using all available cases. *P<0.05, **P<0.01.

Table S6. Correlations among composite measures by race. Correlations of tested mediators (post-intervention grade point average [GPA] and college mentorship) with major post-college outcomes separately among Black participants (**A**) and among White participants (**B**).

	a **(*SE*)**	***b*** **(*SE*)**	***c*** **(*SE*)**	***c′*** **(*SE*)**	**Indirect Effect (*SE*) [*95% CI*]**
(A) Mediator Tested: Post-Intervention College GPA					
Career Satisfaction and Success	0.22 (0.11) *P*=0.04	0.55 (0.32) *P*=0.09	0.53 (0.24) *P*=0.03	0.68 (0.19) *P*=0.001	0.12 (0.09) **[-0.02, 0.34]**
Psychological Well-Being	0.22 (0.11) *P*=0.05	0.34 (0.44) *P*=0.43	0.60 (0.29) *P*=0.04	0.69 (0.25) *P*=0.009	0.08 (0.13) **[-0.11, 0.41]**
Community Involvement and Leadership	0.22 (0.11) *P*=0.05	1.37 (0.49) *P*=0.006	0.37 (0.60) *P*=0.53	1.00 (0.58) *P*=.09	0.30 (0.19) **[-0.006, 0.74]**
(B) Mediator Tested: College Mentorship					

Career Satisfaction and Success	0.67 (0.18) *P*<0.001	0.41 (0.15) *P*=0.006	0.46 (0.22) *P*=0.04	0.74 (0.20) *P*<0.001	0.28 (0.12) **[0.08, 0.54]***
Psychological Well-Being	0.67 (0.18) *P*<0.001	0.73 (0.17) *P*<0.001	0.24 (0.24) *P*=0.34	0.72 (.24) *P*=0.004	0.49 (0.18) **[0.19, 0.88]***
Community Involvement and Leadership	0.67 (0.18) *P*<0.001	0.83 (0.43) *P*=0.05	0.59 (0.55) *P*=.28	1.15 (0.55) *P*=.04	0.56 (0.35) **[-0.01, 1.36]**

Note. For each outcome, *c'* is from a linear regression predicting the outcome from treatment among Black participants only. All other values for a given outcome are from that the mediation analysis for that outcome. We considered mediation to be observed (α=0.05) if the resulting 95% CI of the indirect effect did not include zero. **P*<0.05

Table S7. Results of mediation analyses. Mediation analyses testing post-intervention college GPA (**A**) and college mentorship (**B**) as mediators of treatment effects on major post-college outcomes among Black participants only.

Column: (1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Outcome	**Number of Different "Reasonable Specifications" of Real Data**	**Coefficients in the Predicted Direction**		**Coefficients in the Predicted Direction and *P*<0.05**	
		% of Models from Specification Curve of Real Data	***P***	**% of Models from Specification Curve of Real Data**	***P***
Career Satisfaction and Success	339	100%	0.02	94%	<0.001
General Psychological Well-being	1491	99%	0.03	94%	0.001
Physical Health	195	20%	0.77	0%	0.27
Community Involvement and Leadership	69	100%	0.03	75%	0.005
College Mentorship	123	100%	0.01	100%	0.001

Table S8. Results of specification curve analyses. Summary of specification curve analyses for the simple effect of social-belonging treatment condition among Black participants for each key outcome. Our prediction was that treatment would improve major indices of thriving for Black adults. The table reports the total number of model specifications in the specification curve analyses (Column 2) for each outcome, the percent of models from the specification curve of the real data with coefficients in the hypothesized direction (Column 3), the percent of models from the specification curve of the real data with coefficients in the hypothesized direction that were statistically significant (Column 5), and the associated *P*-values for the specification curves computed from permutation tests (Columns 4 and 6).

Outcome	Black Participants					White Participants					Main Effect of Race					Main Effect of Treatment					Race × Treatment Interaction	
	C *N*=23	B[1] *N*=19	Simple Effect			C *N*=23	B[2] *N*=14	Simple Effect			Black *N*=42	White *N*=37	Test			C *N*=46	B *N*=33	Test				
	M (SD)	*M (SD)*	*B*	*P*	*d*	*M (SD)*	*M (SD)*	*B*	*P*	*d*	*M (SD)*	*M (SD)*	*B*	*P*	*d*	*M (SD)*	*M (SD)*	*B*	*P*	*d*	*B*	*P*
Composite: Connection to Alma Mater	-0.02 (0.69)	0.26 (0.83)	0.27	0.23	0.38	-0.31 (0.76)	0.20 (0.59)	0.51	0.04	0.69	0.11 (0.76)	-0.12 (0.73)	0.18	0.29	0.24	-0.16 (0.73)	0.23 (0.73)	0.39	0.02	0.53	-0.24	0.48
Identification with Alma Mater	-0.07 (0.59)	0.14 (0.83)	0.20	0.36	0.29	-0.06 (0.77)	0.02 (0.68)	0.08	0.74	0.11	0.03 (0.71)	-0.03 (0.73)	0.06	0.74	0.08	-0.06 (0.68)	0.09 (0.76)	0.14	0.39	0.20	0.12	0.71
Involvement with Alma Mater	0.01 (0.40)	0.15 (0.51)	0.14	0.34	0.30	-0.24 (0.47)	0.17 (0.47)	0.41	0.01	0.88	0.07 (0.45)	-0.09 (0.51)	0.12	0.28	0.25	-0.11 (0.45)	0.16 (0.49)	0.27	0.01	0.58	-0.27	0.21
Donations to Alma Mater	0.03 (0.89)	0.26 (0.83)	0.23	0.43	0.25	-0.33 (1.04)	0.21 (0.98)	0.54	0.09	0.57	0.13 (0.86)	-0.13 (1.04)	0.20	0.35	0.22	-0.15 (0.97)	0.24 (0.88)	0.39	0.08	0.41	-0.31	0.48
Cognitive Accessibility[1]																						
Race Negative: Ex Ante	1.65 (0.98)	1.30 (0.86)	-0.35	0.16	0.43	1.17 (0.65)	0.93 (0.62)	-0.25	0.37	0.29	1.49 (0.94)	1.08 (0.64)	0.42	0.02	0.51	1.41 (0.86)	1.15 (0.78)	-0.30	0.11	0.36	-0.11	0.77
Race Negative: All	1.91 (1.04)	1.40 (0.82)	-0.51	0.05	0.60	1.22 (0.74)	1.00 (0.68)	-0.22	0.45	0.25	1.67 (0.97)	1.14 (0.71)	0.55	0.01	0.63	1.57 (0.96)	1.24 (0.78)	-0.37	0.06	0.42	-0.3	0.45
Race Neutral	0.74 (0.75)	0.60 (0.68)	-0.14	0.50	0.21	0.57 (0.66)	0.29 (0.47)	-0.28	0.22	0.41	0.67 (0.71)	0.46 (0.61)	0.24	0.11	0.36	0.65 (0.71)	0.47 (0.61)	-0.21	0.17	0.31	0.14	0.65
Self-Doubt: Ex Ante	1.35 (1.03)	1.05 (0.94)	-0.30	0.34	0.29	1.22 (1.04)	1.07 (1.07)	-0.15	0.67	0.14	1.21 (0.99)	1.16 (1.04)	0.05	0.82	0.05	1.28 (1.03)	1.06 (0.98)	-0.22	0.34	0.21	-0.15	0.75
Self-Doubt: All	1.61 (0.99)	1.20 (0.89)	-0.41	0.20	0.39	1.35 (1.19)	1.14 (1.03)	-0.20	0.56	0.19	1.42 (0.96)	1.27 (1.12)	0.16	0.50	0.15	1.48 (1.09)	1.18 (0.94)	-0.31	0.20	0.29	-0.20	0.67
Other Secondary Outcomes																						
Anxiety	6.74 (6.33)	4.95 (5.28)	-1.79	0.25	-0.37	5.17 (3.85)	4.71 (3.63)	-0.46	0.79	-0.09	5.93 (5.87)	5.00 (3.72)	0.90	0.44	0.18	5.96 (5.24)	4.85 (4.58)	-1.13	0.33	-0.22	-1.33	0.56
Depression	6.61 (3.51)	5.47 (2.82)	-1.14	0.26	-0.36	6.17 (3.82)	5.43 (2.10)	-0.75	0.50	-0.23	6.10 (3.23)	5.89 (3.26)	0.24	0.75	0.07	6.39 (3.64)	5.45 (2.50)	-0.94	0.21	-0.29	-0.39	0.79
Loneliness	1.86 (0.50)	1.77 (0.6)	-0.08	0.60	-0.17	1.52 (0.49)	1.69 (0.40)	0.17	0.33	0.33	1.82 (0.54)	1.59 (0.46)	0.21	0.08	0.40	1.69 (0.52)	1.74 (0.52)	0.04	0.72	0.08	-0.25	0.28
Social Support	3.30 (0.57)	3.56 (0.52)	0.26	0.09	0.54	3.59 (0.43)	3.34 (0.43)	-0.24	0.15	-0.49	3.42 (0.56)	3.50 (0.44)	-0.04	0.75	-0.07	3.44 (0.52)	3.47 (0.49)	0.01	0.93	0.02	0.51	0.03
Perceived Social Status: Community	6.91 (1.56)	6.58 (2.12)	-0.33	0.54	-0.19	6.91 (1.95)	6.64 (1.15)	-0.27	0.65	-0.15	6.76 (1.82)	6.81 (1.68)	-0.03	0.94	-0.02	6.91 (1.75)	6.61 (1.75)	-0.30	0.46	-0.17	-0.06	0.94
Perceived Social Status: US	7.13 (1.10)	7.58 (1.12)	0.45	0.28	0.34	7.83 (1.64)	7.43 (1.40)	-0.4	0.38	-0.30	7.33 (1.12)	7.68 (1.55)	-0.27	0.38	-0.20	7.48 (1.43)	7.52 (1.23)	0.03	0.93	0.02	0.85	0.17
Race-Related Variables																						
Racial Identification[2]	5.70 (1.04)	5.42 (1.74)	-0.27	0.51	0.20	4.24 (1.20)	4.50 (1.37)	0.26	0.58	0.19	5.57 (1.39)	4.33 (1.25)	1.19	< 0.01	0.86	4.97 (1.33)	5.05 (1.64)	-0.01	0.98	0.00	-0.54	0.39
Race-Based Stereotype Threat	5.51 (1.17)	5.86 (1.16)	0.35	0.38	0.27	3.35 (1.38)	3.26 (1.46)	-0.09	0.84	0.06	5.67 (1.16)	3.32 (1.39)	2.38	< 0.01	1.82	4.43 (1.67)	4.76 (1.82)	0.13	0.65	0.10	0.44	0.46
Race-Based Rejection Sensitivity	3.53 (1.37)	3.29 (1.61)	-0.24	0.50	0.21	1.21 (0.56)	1.18 (0.30)	-0.04	0.93	0.03	3.42 (1.47)	1.20 (0.47)	2.22	< 0.01	1.92	2.37 (1.56)	2.39 (1.62)	-0.14	0.60	0.12	-0.21	0.69
Belief in Meritocracy	3.84 (1.10)	3.82 (1.58)	-0.02	0.97	0.01	4.09 (1.52)	3.74 (1.04)	-0.35	0.45	0.25	3.83 (1.32)	3.95 (1.36)	-0.08	0.80	0.06	3.96 (1.32)	3.79 (1.36)	-0.18	0.56	0.13	0.33	0.59

Note. Results are from linear regression models that include race (contrast-coded), treatment condition (contrast-coded), and their interaction.
[1]For the cognitive accessibility task only, 20 (rather than 19) Black participants in the belonging condition provided data.
[2]For the identification questions only, 13 (rather than 14) White participants in the belonging condition provided data.

Table S9. Results for outcomes of secondary interest. Narrower measures of secondary interest and race-related variables by race, treatment condition (C=Control, B=Belonging), and their interaction.

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