The Effect of Nudging on the Utilization of Counseling Services & the Implications on College Student Involvement

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University of South Carolina

October 15th, 2021

Overview

The Problem

Youth suicide rates on the rise $\sim$ utilization of college mental health services is low

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- Can nudging college students via an e-mail increase the utilization of counseling services?
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Main Findings

Nudging:

- $\uparrow$ rate of treatment by 51% for Black students and 54% for Asian students
- $\uparrow$ Black students' social involvement on campus by 22%

The Problem

- Suicide the 2nd leading cause of death among 15- to 24-year-olds.

	US Average	UofSC
Thoughts of suicide	10.5%[a]	10.0%[b]
Planned suicide	3.7%[a]	6.6%[b]
Attempt suicide	1.9%[a]	1.3%[b]
Rate of treatment	34%[c]	9%

- 2021: $3 Billion SAMHSA block grants addressing the addiction and mental health crisis.
- 2018-2021: UofSC was granted $300,000

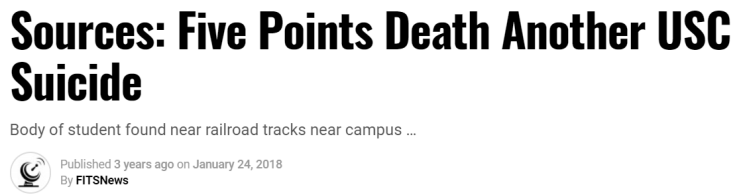
[a] SAMHSA, 2017
[b] ACHA-NCHA, 2017
[c] Lipson et al. (2019)

The Problem

University of South Carolina Building Closed After Student Suicide

Female graduate student hanged herself inside Gambrell Hall …

Published 3 years ago on October 6, 2017
By FITSNews



Sources: Five Points Death Another USC Suicide

Body of student found near railroad tracks near campus …

Published 3 years ago on January 24, 2018
By FITSNews

Student dies in USC Greek Village, president confirms. Authorities investigating

BY LUCAS DAPRILE, TRAVIS BLAND, AND NOAH FEIT
AUGUST 27, 2019 01:20 PM, UPDATED AUGUST 27, 2019 08:06 PM

'Apparent death by suicide' closes USC parking garage

BY TEDDY KULMALA
MARCH 25, 2019 03:29 PM, UPDATED APRIL 01, 2019 02:04 PM

Man found dead at Columbia park was USC student, coroner says

BY BRISTOW MARCHANT
DECEMBER 13, 2019 01:18 PM, UPDATED DECEMBER 16, 2019 10:14 AM

Previous Work

- The Norm:
  Czyz et al. (2013)
  "I don't think its necessary"
  "I'm always busy and I have no time to myself"
  "I believe I will manage just fine"
  "I have a good support network"
  "I have not found where to go for counseling on campus", "I don't have health insurance", "I cannot afford counseling"
  "I don't want others to know"
  "I am unsure if it will help me."
  "Not helpful. I tried."
- Stigma:
  Lipson et al. (2019), Hom et al. (2015), Brown et al. (2014), Miranda et al. (2015), Eisenberg et al. (2012), Herman et al. (2011), Masuda et al. (2009)

Previous Work

- Mental Health Interventions:
  Demyan and Anderson (2012), Cusimano and Sameem (2011), Bean and Baber (2011), King et al. (2011), Aseltine et al. (2007), Aseltine Jr and DeMartino (2004), Pinfold et al. (2003), Kalafat and Elias (1994), Wyman et al. (2010), Wyman et al. (2008), King et al. (2015), Moutier et al. (2012), Haas et al. (2008), Thornicroft et al. (2016)
- Nudging & Framing:
  Thaler and Sunstein (2008), Tversky and Kahneman (1981)
- Nudging in College:
  - Academic outcomes: Castleman and Meyer (2020), Oreopoulos et al. (2018), Oreopoulos and Petronijevic (2019)
  - College drinking: Borsari and Carey (2003), Perkins (2002)
  - Suicide prevention: Bauer et al. (2019)

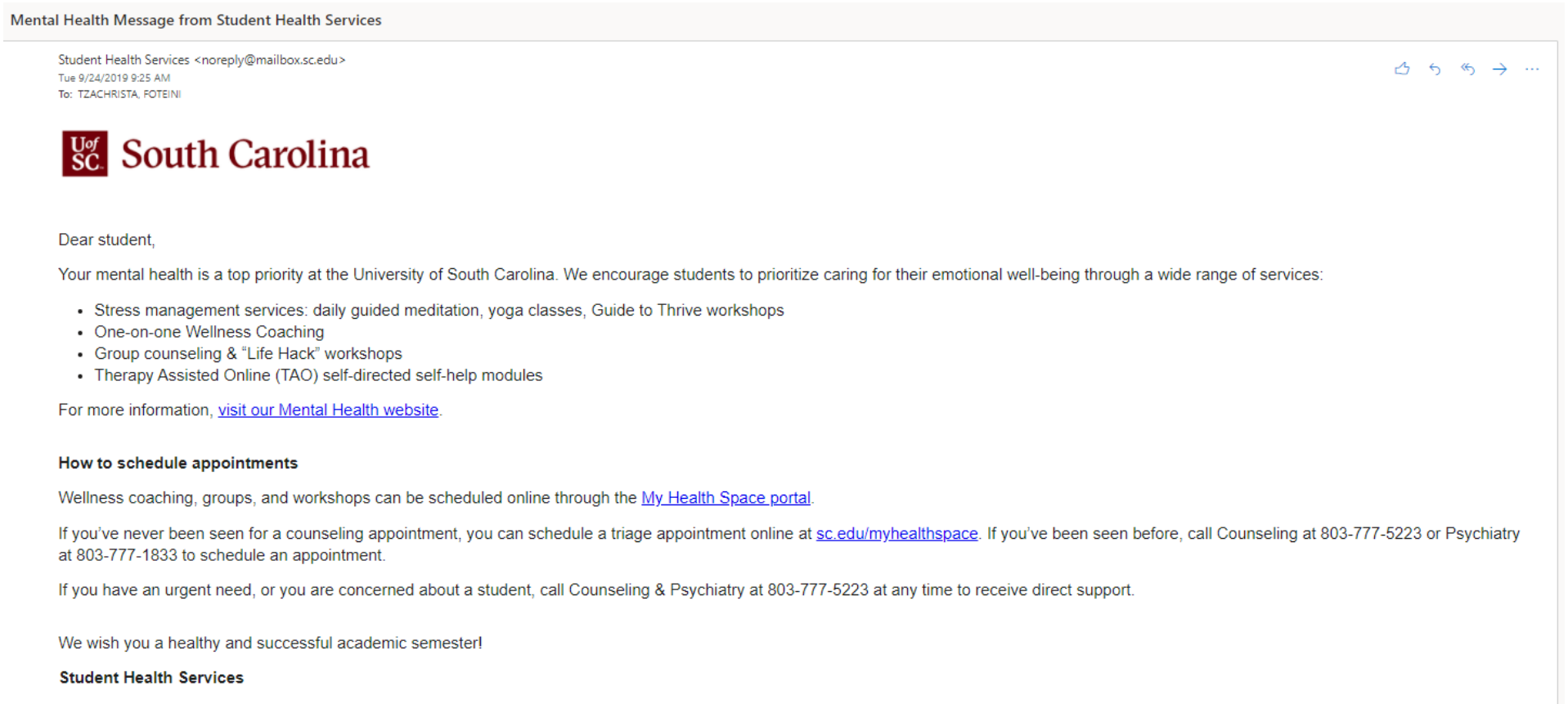
Context

About UofSC:

- Public research university
- Urban campus in the US South
- Semester system with 15-week terms
- Over 34,000 students $\sim$ 26,570 undergrads
- Mental health services:
  - 24/7 Behavioral Intervention Team
  - One-on-one counseling
  - Psychiatric support
  - Group counseling
  - Stress management services
  - Therapy assisted online
- Involved student body

Intervention

Figure 1: Basic Information E-mail



Mental Health Message from Student Health Services

Student Health Services <noreply@mailbox.sc.edu>
Tue 9/24/2019 9:25 AM
To: TZACHRISTA, FOTEINI

South Carolina

Dear student,

Your mental health is a top priority at the University of South Carolina. We encourage students to prioritize caring for their emotional well-being through a wide range of services:

- Stress management services: daily guided meditation, yoga classes, Guide to Thrive workshops
- One-on-one Wellness Coaching
- Group counseling & "Life Hack" workshops
- Therapy Assisted Online (TAO) self-directed self-help modules

For more information, visit our Mental Health website.

How to schedule appointments

Wellness coaching, groups, and workshops can be scheduled online through the My Health Space portal.

If you've never been seen for a counseling appointment, you can schedule a triage appointment online at sc.edu/myhealthspace. If you've been seen before, call Counseling at 803-777-5223 or Psychiatry at 803-777-1833 to schedule an appointment.

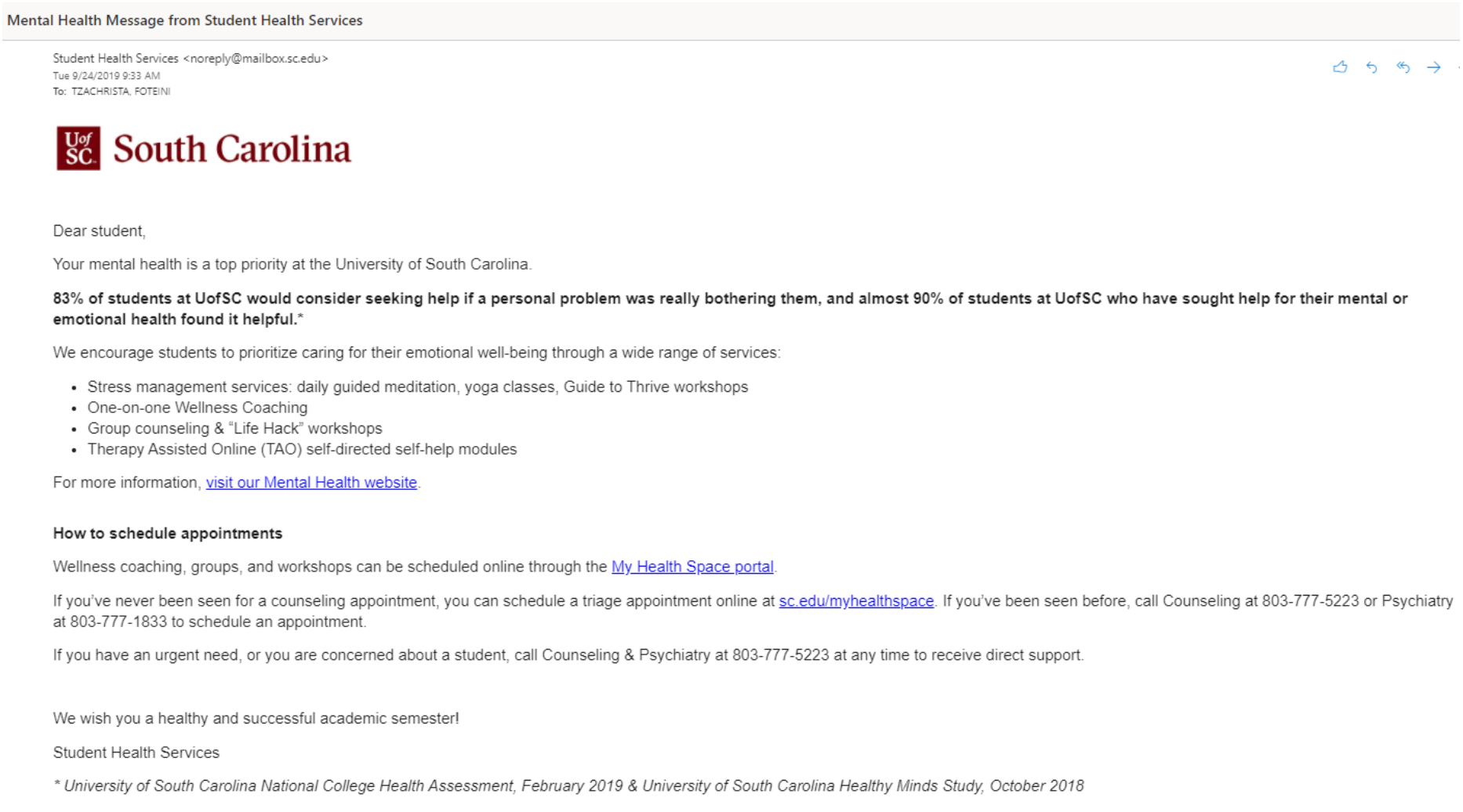
If you have an urgent need, or you are concerned about a student, call Counseling & Psychiatry at 803-777-5223 at any time to receive direct support.

We wish you a healthy and successful academic semester!

Student Health Services

Intervention

Figure 2: Nudging E-mail



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Dear student,

Your mental health is a top priority at the University of South Carolina.

83% of students at UofSC would consider seeking help if a personal problem was really bothering them, and almost 90% of students at UofSC who have sought help for their mental or emotional health found it helpful.*

We encourage students to prioritize caring for their emotional well-being through a wide range of services:

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** University of South Carolina National College Health Assessment, February 2019 & University of South Carolina Healthy Minds Study, October 2018*

Intervention

- The treatment email included the following:

  "83% of students at UofSC would consider seeking help if a personal problem was bothering them, and almost 90% of students at UofSC who have sought help for their mental or emotional health found it helpful."

- Based on the UofSC NCHA (2019) and Health Minds Study (2018).
- Same information on services and scheduling appointments.
- Sent mid-week, no overlap with other massive communication efforts.

Intervention

Students were randomly allocated in 4 groups:

- Info: received the basic info email in round 1.
- Info x 2: received the basic info email in rounds 1 & 2.
- Nudge: received the nudging email in round 1.
- Nudge x 2: received the nudging email in rounds 1 & 2.

Table 1: Timeline

1st Round of Emails - September 24th, 2019
First Round Data from September 25th to October 29th
2nd Round of Emails - October 29th, 2019
Second Round Data from October 30th to December 4th

Block randomization by sex, race, ethnicity and class.

Intervention

In the first round:

- Links embedded on basic email were clicked 2,768.
- Links embedded on nudging email were clicked 4,182.

In the second round:

- Links embedded on basic email were clicked 5,286.
- Links embedded on nudging email were clicked 5,910.

Model

2-part or Hurdle estimation:

$$g(Counseling) = \begin{cases} f_1(0) & if \;\; Counseling = 0 \\ \frac{1-f_1(0)}{1-f_2(0)} f_2(Counseling) & if \;\; Counseling > 0 \end{cases} \quad (1)$$

where

- $f_1(.) -> $ Logit model
- $f_2(.) -> $ Poisson model

In round 1: $x_i'\beta = \beta_0 + \beta_1 Nudge_i + \delta_i$
In round 2: $x_i'\beta = \beta_0 + \beta_1 Nudge_i + \beta_2 Reminder_i + \beta_3 Nudge_i \cdot Reminder_i + \delta_i$

where δ_i are college FE

Model

Reduced form - Logit estimation:

$$\text{In round 1:} \quad Involvement_i = \alpha_0 + \alpha_1 Nudge_i + \boldsymbol{\alpha X} + \epsilon_i \tag{2}$$

$$\text{In round 2:} \quad Involvement_i = \alpha_0 + \alpha_1 Nudge_i + \alpha_2 Reminder_i + \alpha_3 Nudge_i \cdot Reminder_i + \boldsymbol{\alpha X} + \epsilon_i \tag{3}$$

where $Involvement_i$ relates to

- social events
- wellness and fitness center
- student organization memberships

Model

Each observation is weighted by:

$$w_{ij} = \frac{1}{P_{Iij}} d_{Ii} + \frac{1}{P_{I2ij}} d_{I2i} + \frac{1}{P_{Nij}} d_{Ni} + \frac{1}{1 - P_{Iij} - P_{I2ij} - P_{Nij}} (1 - d_{Ii} - d_{I2i} - d_{Ni})$$

[Gerber and Green (2012)]

where

- i is the individual
- j is the block
- P is the probability individual i in block j is assigned to I, Ix2 and N groups
- d_{Ci} is equal to 1 if subject i is assigned to Info, d_{I2i} is equal to 1 if subject i is assigned to Infox2, d_{Ni} is equal to 1 if subject i is assigned to the Nudge group

Randomization Inference

Effects of interest tested using randomization inference:

- 1,000 simulations assuming no effect
- Observe how likely it is to obtain the sample results
- Verify that the observed effect is not by chance
- Suggested when subject pool is small and method of assignment is complex

Descriptive Statistics

Table 2: Descriptives Across Treatment Groups

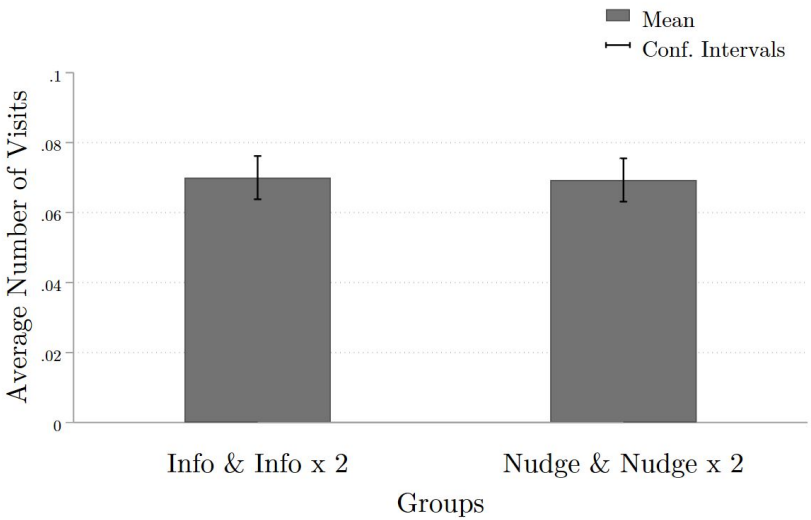
	Info		Info x 2		Nudge		Nudge x 2	
Variable	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Female	0.546	0.498	0.547	0.498	0.535	0.499	0.540	0.498
White	0.813	0.005	0.799	0.005	0.801	0.005	0.809	0.005
Black	0.082	0.003	0.090	0.004	0.090	0.004	0.087	0.003
Asian	0.048	0.003	0.051	0.003	0.049	0.003	0.049	0.003
Mixed Race	0.043	0.002	0.044	0.003	0.049	0.003	0.040	0.002
Other Race	0.005	0.001	0.005	0.001	0.003	0.001	0.004	0.001
Hispanic	0.052	0.003	0.055	0.003	0.049	0.003	0.052	0.003
Freshman	0.239	0.426	0.228	0.420	0.230	0.421	0.227	0.419
Sophomore	0.241	0.428	0.238	0.426	0.247	0.431	0.240	0.427
Junior	0.238	0.426	0.250	0.433	0.242	0.429	0.245	0.430
Senior	0.282	0.450	0.284	0.451	0.281	0.449	0.288	0.453
GPA	3.350	0.545	3.357	0.528	3.355	0.543	3.343	0.543
Honors	0.180	0.384	0.181	0.385	0.178	0.382	0.190	0.393
In-State	0.560	0.496	0.571	0.495	0.566	0.496	0.573	0.495
Counseling-1st Round	0.069	0.366	0.071	0.368	0.065	0.353	0.075	0.383
Counseling-2nd Round	0.062	0.331	0.065	0.328	0.061	0.309	0.072	0.354
Social Events-1st Round	0.088	0.283	0.088	0.284	0.085	0.279	0.084	0.278
Social Events-2nd Round	0.089	0.284	0.088	0.283	0.086	0.281	0.084	0.277
Fitness & Wellness-1st Round	0.355	0.479	0.363	0.481	0.362	0.481	0.369	0.483
Fitness & Wellness-2nd Round	0.322	0.467	0.332	0.471	0.327	0.469	0.330	0.470
Organization Member	0.480	0.500	0.479	0.500	0.480	0.500	0.484	0.500
Observations	6,643		6,642		6,643		6,642	

Note— Students in group "Info" received the basic information email once. Students in group "Info x 2" received the basic information email twice. Students in group "Nudge" received the nudging email once. Students in group "Nudge x 2" received the nudging email twice.

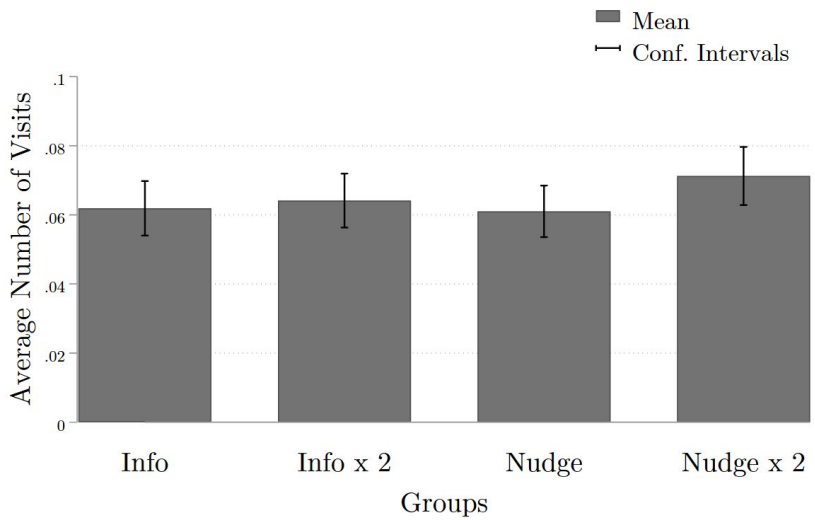
Counseling Visits

Figure 3: Average Number of Counseling Visits

(a) First Round



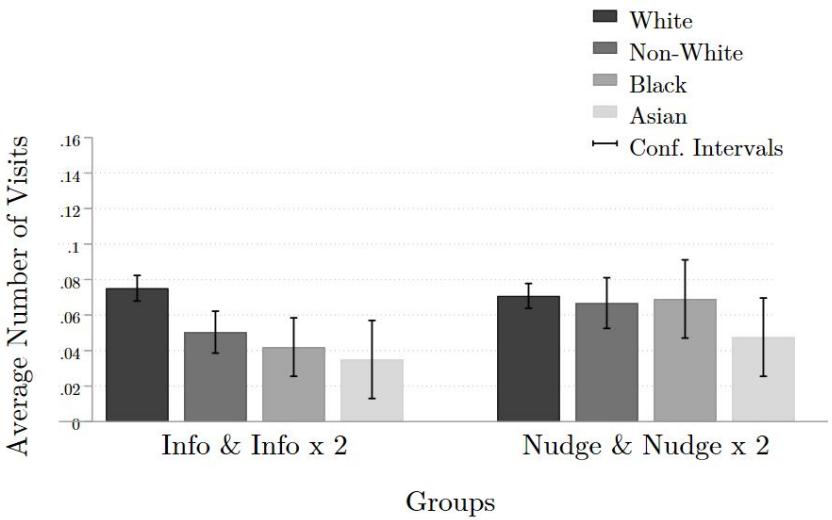
(b) Second Round



Counseling Visits by Race

Figure 4: Average Number of Counseling Visits by Race

(a) First Round



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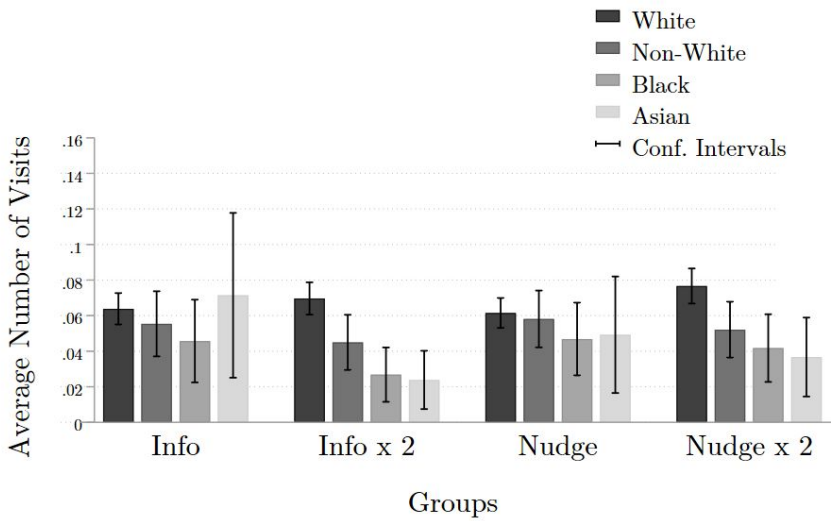

Who Utilizes Counseling?

Table 3: The Effect of Block Variables on Counseling Visits

	First Round of Visits		Second Round of Visits	
	Logit	Poisson	Logit	Poisson
Female	0.0299***	-0.2768***	0.0302***	0.0151
	(0.0027)	(0.0974)	(0.0027)	(0.0784)
Black	-0.0141***	0.0271	-0.0185***	-0.2395**
	(0.0040)	(0.1647)	(0.0038)	(0.1106)
Asian	-0.0199***	0.0200	-0.0142***	-0.0807
	(0.0047)	(0.2553)	(0.0052)	(0.2038)
Hispanic	0.0071	-0.0500	0.0258	-0.3175
	(0.0137)	(0.2710)	(0.0160)	(0.2195)
Other Race	-0.0129	-0.5227	-0.0156	-0.2803
	(0.0164)	(0.3354)	(0.0157)	(0.3317)
Mixed Race	0.0001	0.1073	0.0017	0.1063
	(0.0060)	(0.1590)	(0.0061)	(0.1799)
Freshman	-0.0004	-0.0600	0.0065*	-0.2373***
	(0.0036)	(0.1020)	(0.0039)	(0.0787)
Sophomore	-0.0041	-0.1504*	0.0003	-0.1698**
	(0.0035)	(0.0905)	(0.0036)	(0.0779)
Junior	0.0047	-0.1369	0.0009	-0.1257
	(0.0037)	(0.0921)	(0.0037)	(0.0776)
Honors	0.0215***	-0.0130	0.0190***	0.1634**
	(0.0039)	(0.0869)	(0.0038)	(0.0744)
Observations	26,570	1,206	26,570	1,229
Mean dep. variable	0.05	1.55	0.05	1.40
College FE	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) and the effects of block variables on counseling visits. The first two columns include the average marginal effect of the Logit and the Poisson model for the first round of visits and the last two columns include the average marginal effect of the Logit and the Poisson model for the second round of visits. All estimations include college fixed effects. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

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Asian	-0.0199***	0.0200	-0.0142***	-0.0807
	(0.0047)	(0.2553)	(0.0052)	(0.2038)
Hispanic	0.0071	-0.0500	0.0258	-0.3175
	(0.0137)	(0.2710)	(0.0160)	(0.2195)
Other Race	-0.0129	-0.5227	-0.0156	-0.2803
	(0.0164)	(0.3354)	(0.0157)	(0.3317)
Mixed Race	0.0001	0.1073	0.0017	0.1063
	(0.0060)	(0.1590)	(0.0061)	(0.1799)
Freshman	-0.0004	-0.0600	0.0065*	-0.2373***
	(0.0036)	(0.1020)	(0.0039)	(0.0787)
Sophomore	-0.0041	-0.1504*	0.0003	-0.1698**
	(0.0035)	(0.0905)	(0.0036)	(0.0779)
Junior	0.0047	-0.1369	0.0009	-0.1257
	(0.0037)	(0.0921)	(0.0037)	(0.0776)
Honors	0.0215***	-0.0130	0.0190***	0.1634**
	(0.0039)	(0.0869)	(0.0038)	(0.0744)
Observations	26,570	1,206	26,570	1,229
Mean dep. variable	0.05	1.55	0.05	1.40
College FE	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) and the effects of block variables on counseling visits. The first two columns include the average marginal effect of the Logit and the Poisson model for the first round of visits and the last two columns include the average marginal effect of the Logit and the Poisson model for the second round of visits. All estimations include college fixed effects. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Who Utilizes Counseling?

Table 3: The Effect of Block Variables on Counseling Visits

	First Round of Visits		Second Round of Visits	
	Logit	Poisson	Logit	Poisson
Female	0.0299***	-0.2768***	0.0302***	0.0151
	(0.0027)	(0.0974)	(0.0027)	(0.0784)
Black	-0.0141***	0.0271	-0.0185***	-0.2395**
	(0.0040)	(0.1647)	(0.0038)	(0.1106)
Asian	-0.0199***	0.0200	-0.0142***	-0.0807
	(0.0047)	(0.2553)	(0.0052)	(0.2038)
Hispanic	0.0071	-0.0500	0.0258	-0.3175
	(0.0137)	(0.2710)	(0.0160)	(0.2195)
Other Race	-0.0129	-0.5227	-0.0156	-0.2803
	(0.0164)	(0.3354)	(0.0157)	(0.3317)
Mixed Race	0.0001	0.1073	0.0017	0.1063
	(0.0060)	(0.1590)	(0.0061)	(0.1799)
Freshman	-0.0004	-0.0600	0.0065*	-0.2373***
	(0.0036)	(0.1020)	(0.0039)	(0.0787)
Sophomore	-0.0041	-0.1504*	0.0003	-0.1698**
	(0.0035)	(0.0905)	(0.0036)	(0.0779)
Junior	0.0047	-0.1369	0.0009	-0.1257
	(0.0037)	(0.0921)	(0.0037)	(0.0776)
Honors	0.0215***	-0.0130	0.0190***	0.1634**
	(0.0039)	(0.0869)	(0.0038)	(0.0744)
Observations	26,570	1,206	26,570	1,229
Mean dep. variable	0.05	1.55	0.05	1.40
College FE	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) and the effects of block variables on counseling visits. The first two columns include the average marginal effect of the Logit and the Poisson model for the first round of visits and the last two columns include the average marginal effect of the Logit and the Poisson model for the second round of visits. All estimations include college fixed effects. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Main Results

Table 4: Effect of Nudge & Reminder on Counseling Visits

	Logit		Poisson		Logit		Poisson	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results								
Nudge	-0.0176	-0.0008	0.0376	0.0356	-0.0155	-0.0007	0.0347	0.0329
	(0.0592)	(0.0026)	(0.0782)	(0.0741)	(0.0593)	(0.0026)	(0.0782)	(0.0739)
Observations	26,570	26,570	1,206	1,206	26,570	26,570	1,206	1,206
Mean dep. variable	0.05	0.05	1.55	1.55	0.05	0.05	1.55	1.55
RI test p-value	0.77		0.64		0.80		0.63	
Panel B: Second Round Results								
Nudge	0.0729	0.0031	-0.2678**	-0.1844**	0.0704	0.0030	-0.2652**	-0.1811*
	(0.0844)	(0.0036)	(0.1358)	(0.0934)	(0.0845)	(0.0036)	(0.1352)	(0.0920)
Reminder	0.0698	0.0030	-0.0876	-0.0658	0.0666	0.0028	-0.0810	-0.0605
	(0.0843)	(0.0036)	(0.1257)	(0.0947)	(0.0844)	(0.0036)	(0.1243)	(0.0930)
Nudge × Reminder	0.0135	0.0008	0.3481*	0.2445*	0.0215	0.012	0.3592**	0.0252**
	(0.1174)	(0.0052)	(0.1816)	(0.1298)	(0.1175)	(0.0052)	(0.1810)	(0.1290)
Observations	26,570	26,570	1,229	1,229	26,570	26,570	1,229	1,229
Mean dep. variable	0.05	0.05	1.40	1.40	0.05	0.05	1.40	1.40
RI test p-value	0.92		0.05		0.87		0.05	
College FE	No	No	No	No	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) with counseling visits as the dependent variable. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations control for honors status. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimate using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimate using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Main Results

Table 4: Effect of Nudge & Reminder on Counseling Visits

	Logit		Poisson		Logit		Poisson	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results								
Nudge	-0.0176	-0.0008	0.0376	0.0356	-0.0155	-0.0007	0.0347	0.0329
	(0.0592)	(0.0026)	(0.0782)	(0.0741)	(0.0593)	(0.0026)	(0.0782)	(0.0739)
Observations	26,570	26,570	1,206	1,206	26,570	26,570	1,206	1,206
Mean dep. variable	0.05	0.05	1.55	1.55	0.05	0.05	1.55	1.55
RI test p-value	0.77		0.64		0.80		0.63	
Panel B: Second Round Results								
Nudge	0.0729	0.0031	-0.2678**	-0.1844**	0.0704	0.0030	-0.2652**	-0.1811*
	(0.0844)	(0.0036)	(0.1358)	(0.0934)	(0.0845)	(0.0036)	(0.1352)	(0.0920)
Reminder	0.0698	0.0030	-0.0876	-0.0658	0.0666	0.0028	-0.0810	-0.0605
	(0.0843)	(0.0036)	(0.1257)	(0.0947)	(0.0844)	(0.0036)	(0.1243)	(0.0930)
Nudge × Reminder	0.0135	0.0008	0.3481*	0.2445*	0.0215	0.012	0.3592**	0.0252**
	(0.1174)	(0.0052)	(0.1816)	(0.1298)	(0.1175)	(0.0052)	(0.1810)	(0.1290)
Observations	26,570	26,570	1,229	1,229	26,570	26,570	1,229	1,229
Mean dep. variable	0.05	0.05	1.40	1.40	0.05	0.05	1.40	1.40
RI test p-value	0.92		0.05		0.87		0.05	
College FE	No	No	No	No	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) with counseling visits as the dependent variable. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations control for honors status. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimate using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimate using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Main Results

Table 4: Effect of Nudge & Reminder on Counseling Visits

	Logit		Poisson		Logit		Poisson	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results								
Nudge	-0.0176	-0.0008	0.0376	0.0356	-0.0155	-0.0007	0.0347	0.0329
	(0.0592)	(0.0026)	(0.0782)	(0.0741)	(0.0593)	(0.0026)	(0.0782)	(0.0739)
Observations	26,570	26,570	1,206	1,206	26,570	26,570	1,206	1,206
Mean dep. variable	0.05	0.05	1.55	1.55	0.05	0.05	1.55	1.55
RI test p-value	0.77		0.64		0.80		0.63	
Panel B: Second Round Results								
Nudge	0.0729	0.0031	-0.2678**	-0.1844**	0.0704	0.0030	-0.2652**	-0.1811*
	(0.0844)	(0.0036)	(0.1358)	(0.0934)	(0.0845)	(0.0036)	(0.1352)	(0.0920)
Reminder	0.0698	0.0030	-0.0876	-0.0658	0.0666	0.0028	-0.0810	-0.0605
	(0.0843)	(0.0036)	(0.1257)	(0.0947)	(0.0844)	(0.0036)	(0.1243)	(0.0930)
Nudge × Reminder	0.0135	0.0008	0.3481*	0.2445*	0.0215	0.012	0.3592**	0.0252**
	(0.1174)	(0.0052)	(0.1816)	(0.1298)	(0.1175)	(0.0052)	(0.1810)	(0.1290)
Observations	26,570	26,570	1,229	1,229	26,570	26,570	1,229	1,229
Mean dep. variable	0.05	0.05	1.40	1.40	0.05	0.05	1.40	1.40
RI test p-value	0.92		0.05		0.87		0.05	
College FE	No	No	No	No	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) with counseling visits as the dependent variable. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations control for honors status. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimate using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimate using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Main Results

Table 4: Effect of Nudge & Reminder on Counseling Visits

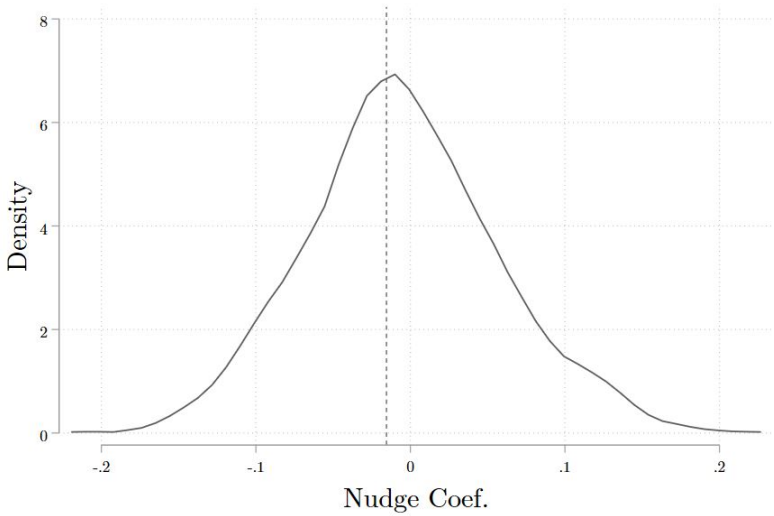
	Logit		Poisson		Logit		Poisson	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results								
Nudge	-0.0176	-0.0008	0.0376	0.0356	-0.0155	-0.0007	0.0347	0.0329
	(0.0592)	(0.0026)	(0.0782)	(0.0741)	(0.0593)	(0.0026)	(0.0782)	(0.0739)
Observations	26,570	26,570	1,206	1,206	26,570	26,570	1,206	1,206
Mean dep. variable	0.05	0.05	1.55	1.55	0.05	0.05	1.55	1.55
RI test p-value	0.77		0.64		0.80		0.63	
Panel B: Second Round Results								
Nudge	0.0729	0.0031	-0.2678**	-0.1844**	0.0704	0.0030	-0.2652**	-0.1811*
	(0.0844)	(0.0036)	(0.1358)	(0.0934)	(0.0845)	(0.0036)	(0.1352)	(0.0920)
Reminder	0.0698	0.0030	-0.0876	-0.0658	0.0666	0.0028	-0.0810	-0.0605
	(0.0843)	(0.0036)	(0.1257)	(0.0947)	(0.0844)	(0.0036)	(0.1243)	(0.0930)
Nudge × Reminder	0.0135	0.0008	0.3481*	0.2445*	0.0215	0.012	0.3592**	0.0252**
	(0.1174)	(0.0052)	(0.1816)	(0.1298)	(0.1175)	(0.0052)	(0.1810)	(0.1290)
Observations	26,570	26,570	1,229	1,229	26,570	26,570	1,229	1,229
Mean dep. variable	0.05	0.05	1.40	1.40	0.05	0.05	1.40	1.40
RI test p-value	0.92		0.05		0.87		0.05	
College FE	No	No	No	No	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) with counseling visits as the dependent variable. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations control for honors status. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimate using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimate using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

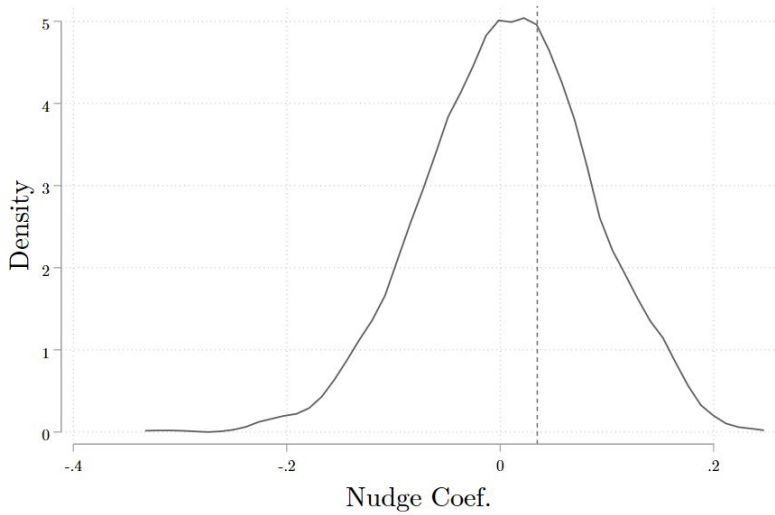
Main Results

Figure 5: Nudge Estimate Densities on Counseling (First Round)

(a) Logit Model



(b) Poisson Model

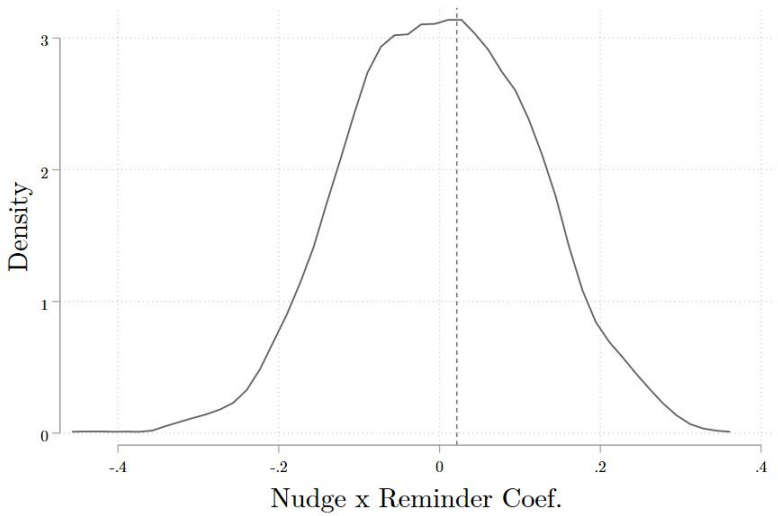


Note– Densities were obtained through randomization inference resampling under the null hypothesis that the estimate was insignificant. The vertical line indicates the location of the estimate under the implemented treatment assignment. The estimate in figure (a) corresponds to the one in the fifth column of Panel A in Table 4. The estimate in figure (b) corresponds to the one in the sixth column of Panel A in Table 4.

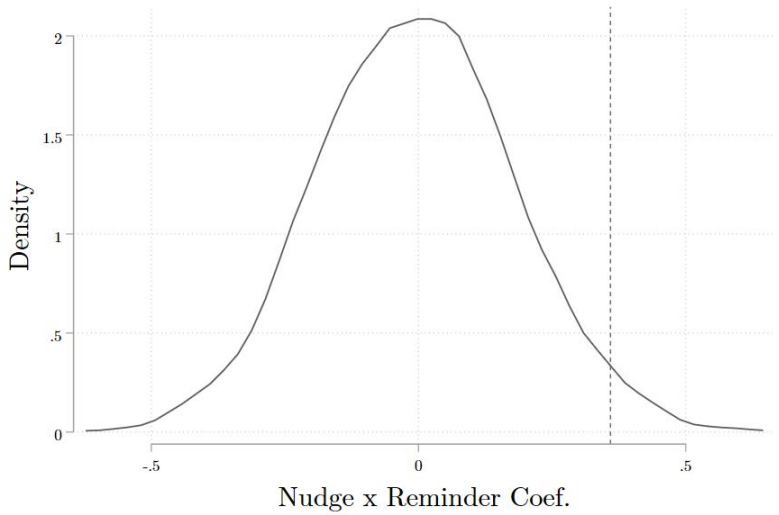
Main Results

Figure 6: Nudge x Reminder Estimate Densities on Counseling (Second Round)

(a) Logit Model



(b) Poisson Model



Note– Densities were obtained through randomization inference resampling under the null hypothesis that the estimate was insignificant. The vertical line indicates the location of the estimate under the implemented treatment assignment. The estimate in the figure (a) corresponds to the one in the fifth column of Panel B in Table 4. The estimate in figure (b) corresponds to the one in the sixth column of Panel B in Table 4.

Main Results

Table 4: Effect of Nudge & Reminder on Counseling Visits by Race

	White				Non-White		Black		Asian	
	Logit		Poisson		Logit		Logit		Logit	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results										
Nudge	-0.0644	-0.0029	0.0166	0.0155	0.2363	0.0085	0.4651**	0.0154**	0.5454	0.0162
	(0.0645)	(0.0029)	(0.0863)	(0.0804)	(0.1511)	(0.0054)	(0.2339)	(0.0077)	(0.3593)	(0.0105)
Observations	21,397	21,397	1,015	1,015	5,173	5,173	2,317	2,317	1,139	1,139
Mean dep. variable	0.05	0.05	1.54	1.54	0.04	0.04	0.03	0.03	0.03	0.03
RI test p-value	0.33		0.87		0.12		0.05		0.15	
Panel B: Second Round Results										
Nudge	0.0148	0.0006	-0.1742	-0.1184	0.3241	0.0125	0.2458	0.0083	0.0947	0.0034
	(0.0931)	(0.0040)	(0.1451)	(0.0985)	(0.2039)	(0.0079)	(0.3278)	(0.0110)	(0.4330)	(0.0155)
Reminder	0.0920	0.0041	-0.0400	-0.0290	-0.0842	-0.0027	-0.3917	-0.0099	-0.3744	-0.0108
	(0.0915)	(0.0041)	(0.1321)	(0.0962)	(0.2203)	(0.0070)	(0.3758)	(0.0095)	(0.4732)	(0.0136)
Nudge × Reminder	0.0390	0.0019	0.3388*	0.2458*	-0.0228	-0.0019	0.2703	0.0553	0.1705	0.0039
	(0.1284)	(0.0058)	(0.1897)	(0.1365)	(0.2950)	(0.0109)	(0.4934)	(0.0148)	(0.6395)	(0.0201)
Observations	21,397	21,397	1,028	1,028	5,173	5,173	2,317	2,317	1,305	1,305
Mean dep. variable	0.05	0.05	1.37	1.37	0.04	0.04	0.03	0.03	0.03	0.03
RI test p-value	0.72		0.07		0.93		0.58		0.79	
College FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) with counseling visits as the dependent variable. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). For White students the sample size allows the estimation of the Logit and Poisson model. For Non-White, Black and Asian sample size allows the estimation of the Logit model only. Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Control, Control x 2, Nudge and Nudge x 2). All estimations control for honors status. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimate with randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimate with randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Main Results

Table 5: Effect of Nudge & Reminder on Counseling Visits by Race

	White				Non-White		Black		Asian	
	Logit		Poisson		Logit		Logit		Logit	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results										
Nudge	-0.0644	-0.0029	0.0166	0.0155	0.2363	0.0085	0.4651**	0.0154**	0.5454	0.0162
	(0.0645)	(0.0029)	(0.0863)	(0.0804)	(0.1511)	(0.0054)	(0.2339)	(0.0077)	(0.3593)	(0.0105)
Observations	21,397	21,397	1,015	1,015	5,173	5,173	2,317	2,317	1,139	1,139
Mean dep. variable	0.05	0.05	1.54	1.54	0.04	0.04	0.03	0.03	0.03	0.03
RI test p-value	0.33		0.87		0.12		0.05		0.15	
Panel B: Second Round Results										
Nudge	0.0148	0.0006	-0.1742	-0.1184	0.3241	0.0125	0.2458	0.0083	0.0947	0.0034
	(0.0931)	(0.0040)	(0.1451)	(0.0985)	(0.2039)	(0.0079)	(0.3278)	(0.0110)	(0.4330)	(0.0155)
Reminder	0.0920	0.0041	-0.0400	-0.0290	-0.0842	-0.0027	-0.3917	-0.0099	-0.3744	-0.0108
	(0.0915)	(0.0041)	(0.1321)	(0.0962)	(0.2203)	(0.0070)	(0.3758)	(0.0095)	(0.4732)	(0.0136)
Nudge × Reminder	0.0390	0.0019	0.3388*	0.2458*	-0.0228	-0.0019	0.2703	0.0553	0.1705	0.0039
	(0.1284)	(0.0058)	(0.1897)	(0.1365)	(0.2950)	(0.0109)	(0.4934)	(0.0148)	(0.6395)	(0.0201)
Observations	21,397	21,397	1,028	1,028	5,173	5,173	2,317	2,317	1,305	1,305
Mean dep. variable	0.05	0.05	1.37	1.37	0.04	0.04	0.03	0.03	0.03	0.03
RI test p-value	0.72		0.07		0.93		0.58		0.79	
College FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) with counseling visits as the dependent variable. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). For White students the sample size allows the estimation of the Logit and Poisson model. For Non-White, Black and Asian sample size allows the estimation of the Logit model only. Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Control, Control x 2, Nudge and Nudge x 2). All estimations control for honors status. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimate with randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimate with randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Main Results

Table 5: Effect of Nudge & Reminder on Counseling Visits by Race

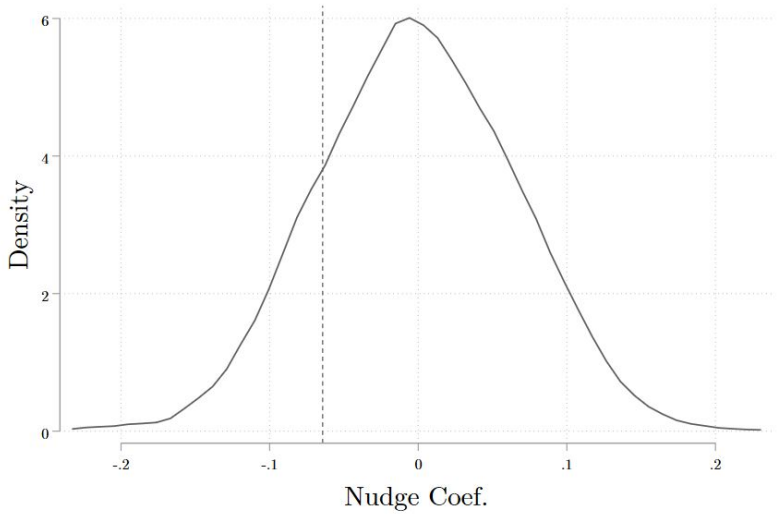
	White				Non-White		Black		Asian	
	Logit		Poisson		Logit		Logit		Logit	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results										
Nudge	-0.0644	-0.0029	0.0166	0.0155	0.2363	0.0085	0.4651**	0.0154**	0.5454	0.0162
	(0.0645)	(0.0029)	(0.0863)	(0.0804)	(0.1511)	(0.0054)	(0.2339)	(0.0077)	(0.3593)	(0.0105)
Observations	21,397	21,397	1,015	1,015	5,173	5,173	2,317	2,317	1,139	1,139
Mean dep. variable	0.05	0.05	1.54	1.54	0.04	0.04	0.03	0.03	0.03	0.03
RI test p-value	0.33		0.87		0.12		0.05		0.15	
Panel B: Second Round Results										
Nudge	0.0148	0.0006	-0.1742	-0.1184	0.3241	0.0125	0.2458	0.0083	0.0947	0.0034
	(0.0931)	(0.0040)	(0.1451)	(0.0985)	(0.2039)	(0.0079)	(0.3278)	(0.0110)	(0.4330)	(0.0155)
Reminder	0.0920	0.0041	-0.0400	-0.0290	-0.0842	-0.0027	-0.3917	-0.0099	-0.3744	-0.0108
	(0.0915)	(0.0041)	(0.1321)	(0.0962)	(0.2203)	(0.0070)	(0.3758)	(0.0095)	(0.4732)	(0.0136)
Nudge × Reminder	0.0390	0.0019	0.3388*	0.2458*	-0.0228	-0.0019	0.2703	0.0553	0.1705	0.0039
	(0.1284)	(0.0058)	(0.1897)	(0.1365)	(0.2950)	(0.0109)	(0.4934)	(0.0148)	(0.6395)	(0.0201)
Observations	21,397	21,397	1,028	1,028	5,173	5,173	2,317	2,317	1,305	1,305
Mean dep. variable	0.05	0.05	1.37	1.37	0.04	0.04	0.03	0.03	0.03	0.03
RI test p-value	0.72		0.07		0.93		0.58		0.79	
College FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) with counseling visits as the dependent variable. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). For White students the sample size allows the estimation of the Logit and Poisson model. For Non-White, Black and Asian sample size allows the estimation of the Logit model only. Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Control, Control x 2, Nudge and Nudge x 2). All estimations control for honors status. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimate with randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimate with randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

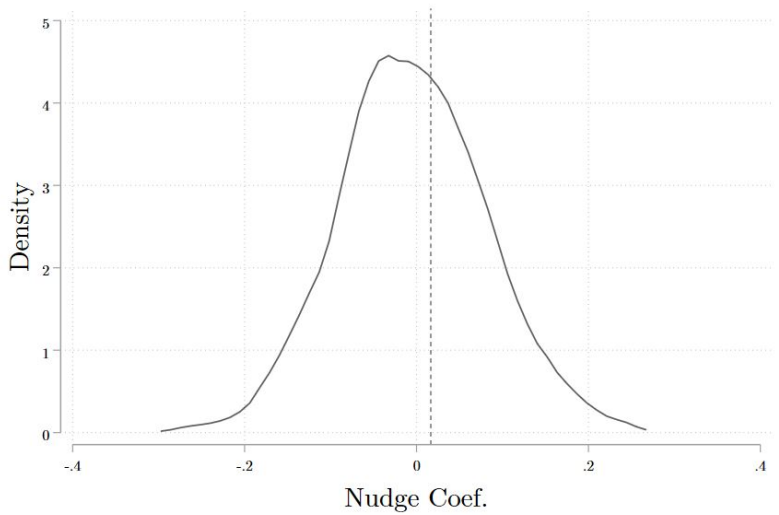
Main Results

Figure 7: Nudge Estimate Densities on Counseling by Race (First Round)

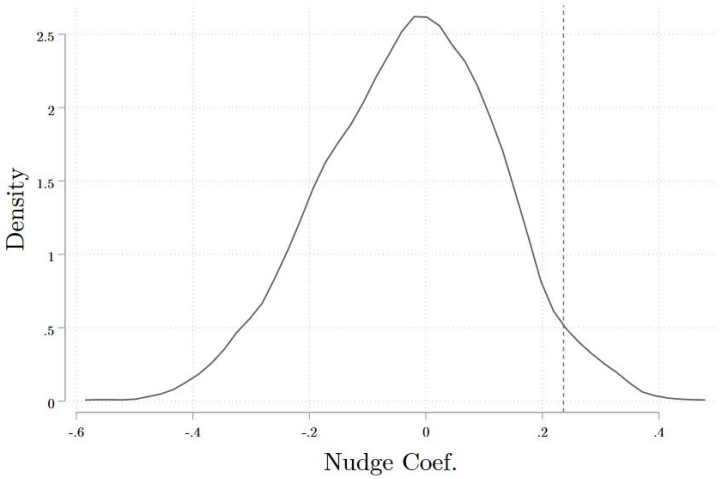
(a) White - Logit Model



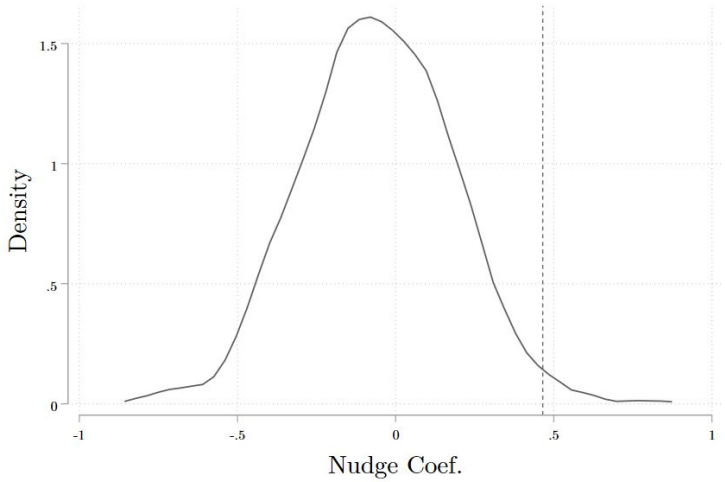
(b) White - Poisson Model



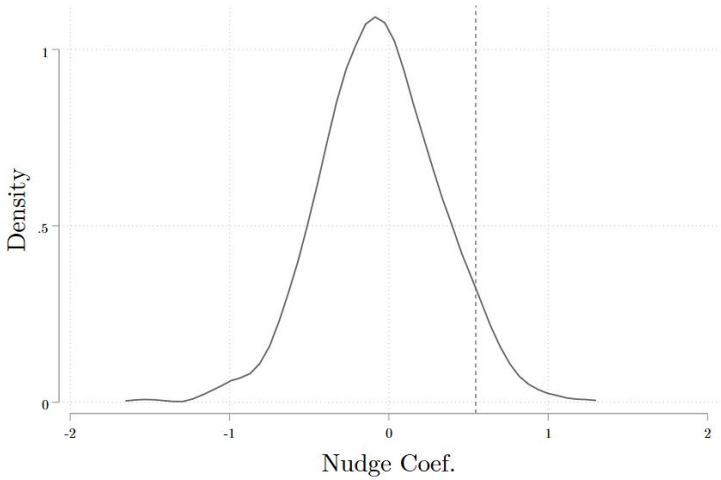
Main Results



(c) Non-White Students - Logit Model



(d) Black Students - Logit Model



(e) Asian Students - Logit Model

Main Results - Involvement

Table 6: Effect of Nudge & Reminder on Involvement

	Social Events		Wellness & Fitness		Organizations	
	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results						
Nudge	-0.0291	-0.0022	0.0246	0.0055	0.0137	0.0033
	(0.0443)	(0.0034)	(0.0261)	(0.0058)	(0.0252)	(0.0060)
Observations	26,570	26,570	26,570	26,570	26,570	26,570
Mean dep. variable	0.09	0.09	0.36	0.36	0.49	0.49
RI test p-value	0.52		0.35		0.60	
Panel B: Second Round Results						
Nudge	-0.0070	-0.0005	0.0229	0.0049	0.0069	0.0017
	(0.0621)	(0.0049)	(0.0378)	(0.0080)	(0.0356)	(0.0085)
Reminder	-0.0149	-0.0012	0.0449	0.0096	-0.0219	-0.0052
	(0.0618)	(0.0048)	(0.0377)	(0.0080)	(0.0356)	(0.0085)
Nudge × Reminder	-0.0022	-0.0291	-0.0087	-0.0408	0.0134	0.0032
	(0.0884)	(0.0069)	(0.0533)	(0.0114)	(0.0504)	(0.0120)
Observations	26,570	26,570	26,570	26,570	26,570	26,570
Mean dep. variable	0.09	0.09	0.33	0.33	0.49	0.49
RI test p-value	0.74		0.47		0.81	
College FE	Yes	Yes	Yes	Yes	Yes	Yes

Note—Results come from estimating equations (2) and (3) with attending social events as the dependent variable in the first two columns, visiting to the wellness and fitness center as the dependent variable in the third and fourth columns and participating in a student organization as the dependent variable in the last two columns. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations include honors status and college fixed effects. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimated using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimated using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Main Results - Involvement

Table 6: Effect of Nudge & Reminder on Involvement

	Social Events		Wellness & Fitness		Organizations	
	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results						
Nudge	-0.0291	-0.0022	0.0246	0.0055	0.0137	0.0033
	(0.0443)	(0.0034)	(0.0261)	(0.0058)	(0.0252)	(0.0060)
Observations	26,570	26,570	26,570	26,570	26,570	26,570
Mean dep. variable	0.09	0.09	0.36	0.36	0.49	0.49
RI test p-value	0.52		0.35		0.60	
Panel B: Second Round Results						
Nudge	-0.0070	-0.0005	0.0229	0.0049	0.0069	0.0017
	(0.0621)	(0.0049)	(0.0378)	(0.0080)	(0.0356)	(0.0085)
Reminder	-0.0149	-0.0012	0.0449	0.0096	-0.0219	-0.0052
	(0.0618)	(0.0048)	(0.0377)	(0.0080)	(0.0356)	(0.0085)
Nudge × Reminder	-0.0022	-0.0291	-0.0087	-0.0408	0.0134	0.0032
	(0.0884)	(0.0069)	(0.0533)	(0.0114)	(0.0504)	(0.0120)
Observations	26,570	26,570	26,570	26,570	26,570	26,570
Mean dep. variable	0.09	0.09	0.33	0.33	0.49	0.49
RI test p-value	0.74		0.47		0.81	
College FE	Yes	Yes	Yes	Yes	Yes	Yes

Note—Results come from estimating equations (2) and (3) with attending social events as the dependent variable in the first two columns, visiting to the wellness and fitness center as the dependent variable in the third and fourth columns and participating in a student organization as the dependent variable in the last two columns. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations include honors status and college fixed effects. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimated using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimated using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Main Results - Involvement

Table 6: Effect of Nudge & Reminder on Involvement

	Social Events		Wellness & Fitness		Organizations	
	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results						
Nudge	-0.0291	-0.0022	0.0246	0.0055	0.0137	0.0033
	(0.0443)	(0.0034)	(0.0261)	(0.0058)	(0.0252)	(0.0060)
Observations	26,570	26,570	26,570	26,570	26,570	26,570
Mean dep. variable	0.09	0.09	0.36	0.36	0.49	0.49
RI test p-value	0.52		0.35		0.60	
Panel B: Second Round Results						
Nudge	-0.0070	-0.0005	0.0229	0.0049	0.0069	0.0017
	(0.0621)	(0.0049)	(0.0378)	(0.0080)	(0.0356)	(0.0085)
Reminder	-0.0149	-0.0012	0.0449	0.0096	-0.0219	-0.0052
	(0.0618)	(0.0048)	(0.0377)	(0.0080)	(0.0356)	(0.0085)
Nudge × Reminder	-0.0022	-0.0291	-0.0087	-0.0408	0.0134	0.0032
	(0.0884)	(0.0069)	(0.0533)	(0.0114)	(0.0504)	(0.0120)
Observations	26,570	26,570	26,570	26,570	26,570	26,570
Mean dep. variable	0.09	0.09	0.33	0.33	0.49	0.49
RI test p-value	0.74		0.47		0.81	
College FE	Yes	Yes	Yes	Yes	Yes	Yes

Note—Results come from estimating equations (2) and (3) with attending social events as the dependent variable in the first two columns, visiting to the wellness and fitness center as the dependent variable in the third and fourth columns and participating in a student organization as the dependent variable in the last two columns. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations include honors status and college fixed effects. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimated using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimated using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Main Results - Social Events

Table 7: Effect of Nudge & Reminder on Attendance on Social Events

	White		Non-White		Black		Asian	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results								
Nudge	-0.0700	-0.0053	0.1115	0.0092	0.2474*	0.0205*	-0.1152	-0.0094
	(0.0497)	(0.0038)	(0.0976)	(0.0080)	(0.1452)	(0.0120)	(0.1956)	(0.0160)
Observations	21,397	21,397	5,173	5,173	2,317	2,317	1,310	1,310
Mean dep. variable	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10
RI test p-value	0.15		0.35		0.13		0.60	
Panel B: Second Round Results								
Nudge	-0.0588	-0.0044	0.1653	0.0153	0.2728	0.0240	-0.2113	-0.0197
	(0.0705)	(0.0053)	(0.1313)	(0.0122)	(0.1973)	(0.0173)	(0.2678)	(0.0248)
Reminder	-0.0310	-0.0023	0.0431	0.0038	-0.0144	-0.0011	-0.0313	-0.0031
	(0.0702)	(0.0053)	(0.1314)	(0.0116)	(0.2087)	(0.0164)	(0.2452)	(0.0243)
Nudge × Reminder	0.0296	0.0022	-0.2406	-0.0219	-0.1008	-0.0096	-0.1100	-0.0085
	(0.1003)	(0.0075)	(0.1885)	(0.0170)	(0.2837)	(0.0243)	(0.3799)	(0.0340)
Observations	21,397	21,397	5,173	5,173	2,317	2,317	1,305	1,305
Mean dep. variable	0.08	0.08	0.10	0.10	0.10	0.10	0.11	0.11
RI test p-value	0.79		0.21		0.73		0.78	
College FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note— Results come from estimating equations (2) and (3) with attending social events as the dependent variable. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations include honors status and college fixed effects. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimated using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimated using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Main Results - Social Events

Table 7: Effect of Nudge & Reminder on Attendance on Social Events

	White		Non-White		Black		Asian	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results								
Nudge	-0.0700	-0.0053	0.1115	0.0092	0.2474*	0.0205*	-0.1152	-0.0094
	(0.0497)	(0.0038)	(0.0976)	(0.0080)	(0.1452)	(0.0120)	(0.1956)	(0.0160)
Observations	21,397	21,397	5,173	5,173	2,317	2,317	1,310	1,310
Mean dep. variable	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10
RI test p-value	0.15		0.35		0.13		0.60	
Panel B: Second Round Results								
Nudge	-0.0588	-0.0044	0.1653	0.0153	0.2728	0.0240	-0.2113	-0.0197
	(0.0705)	(0.0053)	(0.1313)	(0.0122)	(0.1973)	(0.0173)	(0.2678)	(0.0248)
Reminder	-0.0310	-0.0023	0.0431	0.0038	-0.0144	-0.0011	-0.0313	-0.0031
	(0.0702)	(0.0053)	(0.1314)	(0.0116)	(0.2087)	(0.0164)	(0.2452)	(0.0243)
Nudge × Reminder	0.0296	0.0022	-0.2406	-0.0219	-0.1008	-0.0096	-0.1100	-0.0085
	(0.1003)	(0.0075)	(0.1885)	(0.0170)	(0.2837)	(0.0243)	(0.3799)	(0.0340)
Observations	21,397	21,397	5,173	5,173	2,317	2,317	1,305	1,305
Mean dep. variable	0.08	0.08	0.10	0.10	0.10	0.10	0.11	0.11
RI test p-value	0.79		0.21		0.73		0.78	
College FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note— Results come from estimating equations (2) and (3) with attending social events as the dependent variable. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations include honors status and college fixed effects. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimated using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimated using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Main Results - Social Events

Table 7: Effect of Nudge & Reminder on Attendance on Social Events

	White		Non-White		Black		Asian	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results								
Nudge	-0.0700	-0.0053	0.1115	0.0092	0.2474*	0.0205*	-0.1152	-0.0094
	(0.0497)	(0.0038)	(0.0976)	(0.0080)	(0.1452)	(0.0120)	(0.1956)	(0.0160)
Observations	21,397	21,397	5,173	5,173	2,317	2,317	1,310	1,310
Mean dep. variable	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10
RI test p-value	0.15		0.35		0.13		0.60	
Panel B: Second Round Results								
Nudge	-0.0588	-0.0044	0.1653	0.0153	0.2728	0.0240	-0.2113	-0.0197
	(0.0705)	(0.0053)	(0.1313)	(0.0122)	(0.1973)	(0.0173)	(0.2678)	(0.0248)
Reminder	-0.0310	-0.0023	0.0431	0.0038	-0.0144	-0.0011	-0.0313	-0.0031
	(0.0702)	(0.0053)	(0.1314)	(0.0116)	(0.2087)	(0.0164)	(0.2452)	(0.0243)
Nudge × Reminder	0.0296	0.0022	-0.2406	-0.0219	-0.1008	-0.0096	-0.1100	-0.0085
	(0.1003)	(0.0075)	(0.1885)	(0.0170)	(0.2837)	(0.0243)	(0.3799)	(0.0340)
Observations	21,397	21,397	5,173	5,173	2,317	2,317	1,305	1,305
Mean dep. variable	0.08	0.08	0.10	0.10	0.10	0.10	0.11	0.11
RI test p-value	0.79		0.21		0.73		0.78	
College FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note— Results come from estimating equations (2) and (3) with attending social events as the dependent variable. The first column of every estimation includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations include honors status and college fixed effects. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimated using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimated using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Robustness Checks - Block Variables

Table 8: The Effect of Block Variables on All Visits

	First Round of Visits		Second Round of Visits	
	Logit	Poisson	Logit	Poisson
Female	0.0358***	-0.1222	0.0365***	0.1325
	(0.0029)	(0.1101)	(0.0030)	(0.0983)
Black	-0.0185***	-0.0724	-0.0240***	-0.1783
	(0.0042)	(0.1949)	(0.0042)	(0.1640)
Asian	-0.0239***	0.2815	-0.0166***	-0.3023
	(0.0050)	(0.3430)	(0.0058)	(0.1984)
Hispanic	0.0023	0.5126	0.0254	0.6920
	(0.0140)	(0.4968)	(0.0169)	(0.5576)
Other Race	0.0007	-0.5270	-0.0031	0.6021
	(0.0265)	(0.6471)	(0.0264)	(1.2965)
Mixed Race	0.0072	0.1747	0.0094	-0.0530
	(0.0051)	(0.1483)	(0.0073)	(0.1304)
Freshman	-0.0063*	-0.0421	-0.0044	-0.1890*
	(0.0037)	(0.1316)	(0.0039)	(0.1100)
Sophomore	-0.0087**	-0.2106*	-0.0057	-0.1541
	(0.0036)	(0.1184)	(0.0038)	(0.1089)
Junior	0.0009	-0.0268	-0.0019	0.0437
	(0.0038)	(0.1217)	(0.0038)	(0.1147)
Honors	0.0244***	0.0428	0.0244***	0.3456***
	(0.0042)	(0.1131)	(0.0043)	(0.1055)
Observations	26,570	1,415	26,570	1,513
Mean dependent variable	0.05	1.84	0.06	1.68
College FE	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) and the effect of block variables on all visits including, counseling, psychiatry, group therapy and coaching. The first two columns include the average marginal effect of the Logit and the Poisson model for the first round of visits and the last two columns include the average marginal effect of the Logit and the Poisson model for the second round of visits. All estimations include college fixed effects. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Robustness Checks

Table 9: Effect of Nudge & Reminder on All Visits

	Logit		Poisson		Logit		Poisson	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results								
Nudge	-0.0028	-0.0001	-0.0073	-0.0101	-0.0004	-0.0001	-0.0094	-0.0129
	(0.0549)	(0.0028)	(0.0673)	(0.0925)	(0.0549)	(0.0028)	(0.0674)	(0.0925)
Observations	26,570	26,570	1,415	1,415	26,570	26,570	1,415	1,415
Mean dependent variable	0.05	0.05	1.84	1.84	0.05	0.05	1.84	1.84
RI test p-value	0.96		0.91		0.99		0.88	
Panel B: Second Round Results								
Nudge	0.0515	0.0027	-0.2453**	-0.2837**	0.0489	0.0025	-0.2455**	-0.2829**
	(0.0763)	(0.0040)	(0.1119)	(0.1277)	(0.0764)	(0.0040)	(0.1121)	(0.1274)
Reminder	0.0370	0.0019	-0.2059**	-0.2427**	0.0326	0.0017	-0.2067**	-0.2427**
	(0.0762)	(0.0039)	(0.1037)	(0.1224)	(0.0764)	(0.0039)	(0.1036)	(0.1219)
Nudge × Reminder	0.0511	0.0030	0.3579**	0.4103**	0.0606	0.0035	0.3668**	0.4192**
	(0.1064)	(0.0060)	(0.1526)	(0.1729)	(0.1065)	(0.0057)	(0.1525)	(0.1724)
Observations	26,570	26,570	1,513	1,513	26,570	26,570	1,513	1,513
Mean dependent variable	0.06	0.06	1.68	1.68	0.06	0.06	1.68	1.68
RI test p-value	0.61		0.0		0.56		0.01	
College FE	No	No	No	No	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) with all visits including, counseling, psychiatry, group therapy and coaching, as the dependent variable. The first column of every model includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations control for honors status. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimated using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimated using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Robustness Checks

Table 9: Effect of Nudge & Reminder on All Visits

	Logit		Poisson		Logit		Poisson	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results								
Nudge	-0.0028	-0.0001	-0.0073	-0.0101	-0.0004	-0.0001	-0.0094	-0.0129
	(0.0549)	(0.0028)	(0.0673)	(0.0925)	(0.0549)	(0.0028)	(0.0674)	(0.0925)
Observations	26,570	26,570	1,415	1,415	26,570	26,570	1,415	1,415
Mean dependent variable	0.05	0.05	1.84	1.84	0.05	0.05	1.84	1.84
RI test p-value	0.96		0.91		0.99		0.88	
Panel B: Second Round Results								
Nudge	0.0515	0.0027	-0.2453**	-0.2837**	0.0489	0.0025	-0.2455**	-0.2829**
	(0.0763)	(0.0040)	(0.1119)	(0.1277)	(0.0764)	(0.0040)	(0.1121)	(0.1274)
Reminder	0.0370	0.0019	-0.2059**	-0.2427**	0.0326	0.0017	-0.2067**	-0.2427**
	(0.0762)	(0.0039)	(0.1037)	(0.1224)	(0.0764)	(0.0039)	(0.1036)	(0.1219)
Nudge × Reminder	0.0511	0.0030	0.3579**	0.4103**	0.0606	0.0035	0.3668**	0.4192**
	(0.1064)	(0.0060)	(0.1526)	(0.1729)	(0.1065)	(0.0057)	(0.1525)	(0.1724)
Observations	26,570	26,570	1,513	1,513	26,570	26,570	1,513	1,513
Mean dependent variable	0.06	0.06	1.68	1.68	0.06	0.06	1.68	1.68
RI test p-value	0.61		0.0		0.56		0.01	
College FE	No	No	No	No	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) with all visits including, counseling, psychiatry, group therapy and coaching, as the dependent variable. The first column of every model includes the coefficient estimates (Est.) and the second the average marginal effects (AME). Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Info, Infox2, Nudge and Nudgex2). All estimations control for honors status. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimated using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimated using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Robustness Checks

Table 10: Effect of Nudge & Reminder on All Visits by Race

	White				Non-White		Black		Asian	
	Logit		Poisson		Logit		Logit		Logit	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results										
Nudge	-0.0460	-0.0024	-0.0570	-0.0768	0.1773	0.0079	0.5888**	0.0208***	0.6102*	0.0209*
	(0.0614)	(0.0032)	(0.0766)	(0.1033)	(0.1235)	(0.0055)	(0.2294)	(0.0080)	(0.3437)	(0.0116)
Observations	21,397	21,397	1,193	1,193	5,173	5,173	2,317	2,317	1,139	1,139
Mean dependent variable	0.06	0.06	1.83	1.83	0.04	0.04	0.04	0.04	0.04	0.04
RI test p-value	0.51		0.47		0.14		0.02		0.12	
Panel B: Second Round Results										
Nudge	-0.0340	-0.0018	-0.2563**	-0.2889**	0.2352	0.0109	0.0578	0.0020	0.0713	0.0030
	(0.0866)	(0.0045)	(0.1209)	(0.1366)	(0.1862)	(0.0086)	(0.3251)	(0.0112)	(0.4016)	(0.0170)
Reminder	0.0379	0.0020	-0.1938*	-0.2251*	-0.0808	-0.0032	-0.2850	-0.0084	-0.2111	-0.0079
	(0.0852)	(0.0046)	(0.1162)	(0.1359)	(0.1958)	(0.0078)	(0.3471)	(0.0102)	(0.4207)	(0.0157)
Nudge × Reminder	0.1392	0.0078	0.4276***	0.4856***	0.0130	-0.0001	0.5077	0.0171	0.0215	0.0003
	(0.1197)	(0.0065)	(0.1655)	(0.1885)	(0.2674)	(0.0120)	(0.4657)	(0.0158)	(0.5820)	(0.0226)
Observations	21,397	21,397	1,268	1,268	5,173	5,173	2,317	2,317	1,310	1,310
Mean dependent variable	0.06	0.06	1.68	1.68	0.05	0.05	0.04	0.04	0.04	0.04
RI test p-value	0.51		0.01		0.96		0.41		0.99	
College FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) with all visits including, counseling, psychiatry, group therapy and coaching, as the dependent variable. The first column of every model includes the coefficient estimates (Est.) and the second the average marginal effects (AME). For White students the sample size allows for the estimation of the Logit and the Poisson model. For non-White, Black and Asian students, sample size allows for the estimation of the Logit model only. Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Control, Control x 2, Nudge and Nudge x 2). All estimations control for honors status. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimated using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimated using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Robustness Checks

Table 10: Effect of Nudge & Reminder on All Visits by Race

	White				Non-White		Black		Asian	
	Logit		Poisson		Logit		Logit		Logit	
	Est.	AME	Est.	AME	Est.	AME	Est.	AME	Est.	AME
Panel A: First Round Results										
Nudge	-0.0460	-0.0024	-0.0570	-0.0768	0.1773	0.0079	0.5888**	0.0208***	0.6102*	0.0209*
	(0.0614)	(0.0032)	(0.0766)	(0.1033)	(0.1235)	(0.0055)	(0.2294)	(0.0080)	(0.3437)	(0.0116)
Observations	21,397	21,397	1,193	1,193	5,173	5,173	2,317	2,317	1,139	1,139
Mean dependent variable	0.06	0.06	1.83	1.83	0.04	0.04	0.04	0.04	0.04	0.04
RI test p-value	0.51		0.47		0.14		0.02		0.12	
Panel B: Second Round Results										
Nudge	-0.0340	-0.0018	-0.2563**	-0.2889**	0.2352	0.0109	0.0578	0.0020	0.0713	0.0030
	(0.0866)	(0.0045)	(0.1209)	(0.1366)	(0.1862)	(0.0086)	(0.3251)	(0.0112)	(0.4016)	(0.0170)
Reminder	0.0379	0.0020	-0.1938*	-0.2251*	-0.0808	-0.0032	-0.2850	-0.0084	-0.2111	-0.0079
	(0.0852)	(0.0046)	(0.1162)	(0.1359)	(0.1958)	(0.0078)	(0.3471)	(0.0102)	(0.4207)	(0.0157)
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	(0.1197)	(0.0065)	(0.1655)	(0.1885)	(0.2674)	(0.0120)	(0.4657)	(0.0158)	(0.5820)	(0.0226)
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RI test p-value	0.51		0.01		0.96		0.41		0.99	
College FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note—Results come from estimating equation (1) with all visits including, counseling, psychiatry, group therapy and coaching, as the dependent variable. The first column of every model includes the coefficient estimates (Est.) and the second the average marginal effects (AME). For White students the sample size allows for the estimation of the Logit and the Poisson model. For non-White, Black and Asian students, sample size allows for the estimation of the Logit model only. Each observation is weighted by the inverse of the proportion of subjects in its block that are assigned to a certain group (Control, Control x 2, Nudge and Nudge x 2). All estimations control for honors status. On panel A, the "RI test p-value" row includes the p-values of the "Nudge" estimated using randomization inference. On panel B, the "RI test p-value" row includes the p-values of the "Nudge x Reminder" estimated using randomization inference. Robust standard errors are in parentheses. *, **, *** denotes significant at 10, 5, and 1 percent, respectively.

Conclusion

Key Takeaways

- Norm nudging had a differential effect on utilization of counseling services.
- Black and Asian students affected the most.
- Black students sought social involvement as a result.

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- Norm nudging had a differential effect on utilization of counseling services.
- Black and Asian students affected the most.
- Black students sought social involvement as a result.

Policy Implications

- Interventions need to be evaluated by race.
- Not all colleges offer mental health support.
- COVID-19: higher need & higher barriers.

Thank you for your attention!

Any comments, questions, concerns?

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