

Stigma and Social Cover: A Mental Health Care Experiment in Refugee Networks

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Mental illness: the leading cause of disability globally

- ▶ Globally: 970 million experiencing mental health problems (pre-pandemic)

W. H. O. WHO et al., 2022

- ▶ Leading cause of disability globally Bloom et al., 2012
 - ▶ Negative economic impacts Ridley et al., 2020
 - ▶ Discrimination Ridley, 2022
 - ▶ Spillovers on child development Moya et al., 2024, Tol et al., 2020, Manning and Gregoire, 2006
- ▶ Refugees at high risk: 1 in 3 experience mental health problems Blackmore et al., 2020
 - ▶ **Syrian refugees in Jordan:** More than half likely have depression or anxiety
 - ▶ Treatment is effective, including low-cost phone counseling Chen et al., 2022
 - ▶ Low-income countries: 75-85% untreated W. M. H. S. C. WHO et al., 2004

Syrian Refugees in Jordan

- ▶ Population >640,000 UNHCR, 2024
- ▶ Displaced >10 years
- ▶ Limited right to work (restricted sectors)
- ▶ 85% live alongside Jordanians

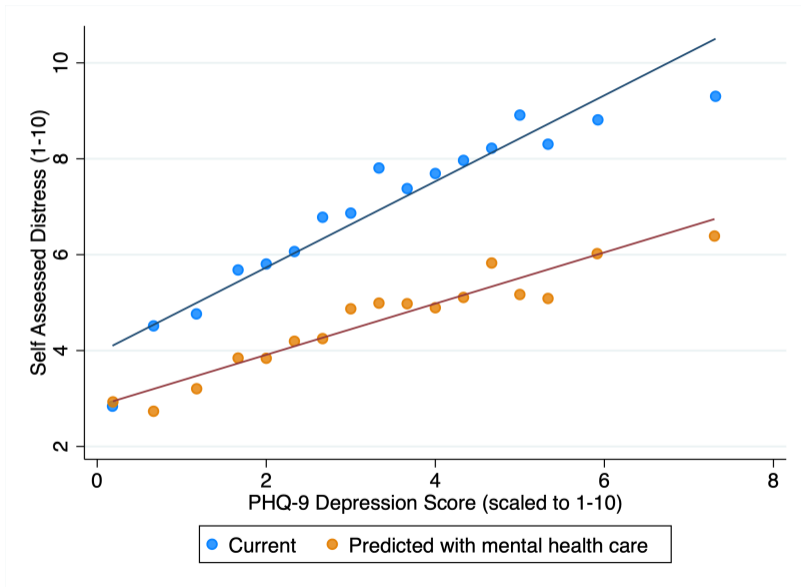


Large Mental Health Treatment and Knowledge Gaps

- ▶ More than half likely have anxiety or depression
- ▶ But,
 - ▶ Only 7% of households use any mental health services at any point in time
 - ▶ **Fewer than 30% can name one mental health care organization**
 - ▶ Fewer than 30% have spoken about mental health once in past 6 months

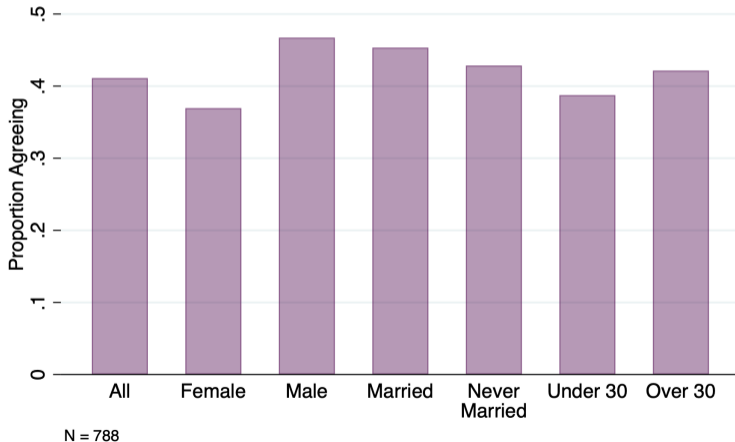
Do refugees think mental health services are needed and effective?

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Stigma as a barrier to services

Proportion agreeing: *"If I were young and unmarried, I would not marry someone who had ever used mental health services."*



Problem: How to adapt communication approaches to increase knowledge and care-seeking of mental health services, while accounting for the stigma attached to these services?

Approach:

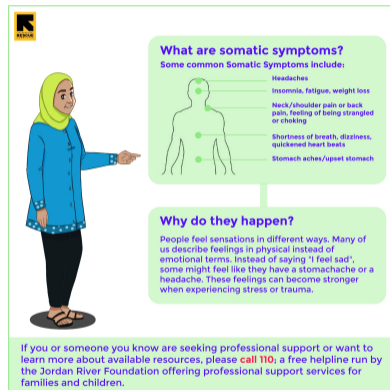
- ▶ Validate the potential for a community-targeting approach to mental health services
- ▶ Test how to increase *sharing* of information on mental health services
- ▶ Test impacts of *receiving* information on mental health services

Peer information sharing experiment

- ▶ 847 potential "senders" nominated by representative sample of 1516 Syrian refugees in Jordan ▶ Elicitation
- ▶ Identify senders' close network, potential "recipients" (N=2665)
- ▶ Randomize if sender shares mental health campaign with friends
 - ▶ Shared over WhatsApp
 - ▶ Content designed by the International Rescue Committee
 - ▶ Advertises free phone counseling

Outcomes

- ▶ Sender follow-through
- ▶ Recipient take-up of phone counseling



The infographic features a woman in a blue jacket and yellow headscarf pointing towards a diagram of a human body. The diagram has green dots on the head, neck, chest, and stomach, with lines connecting them to text boxes. The text boxes are titled 'What are somatic symptoms?' and 'Why do they happen?'. The infographic also includes a logo in the top left corner and a footer with contact information.

What are somatic symptoms?
Some common Somatic Symptoms include:

- Headaches
- Insomnia, fatigue, weight loss
- Neck/shoulder pain or back pain, feeling of being strangled or choking
- Shortness of breath, dizziness, quickened heart beats
- Stomach aches/upset stomach

Why do they happen?
People feel sensations in different ways. Many of us describe feelings in physical instead of emotional terms. Instead of saying 'I feel sad', some might feel like they have a stomachache or a headache. These feelings can become stronger when experiencing stress or trauma.

If you or someone you know are seeking professional support or want to learn more about available resources, please call 110; a free helpline run by the Jordan River Foundation offering professional support services for families and children.

Content by Rachit Shah, IRC

Why community-based senders?

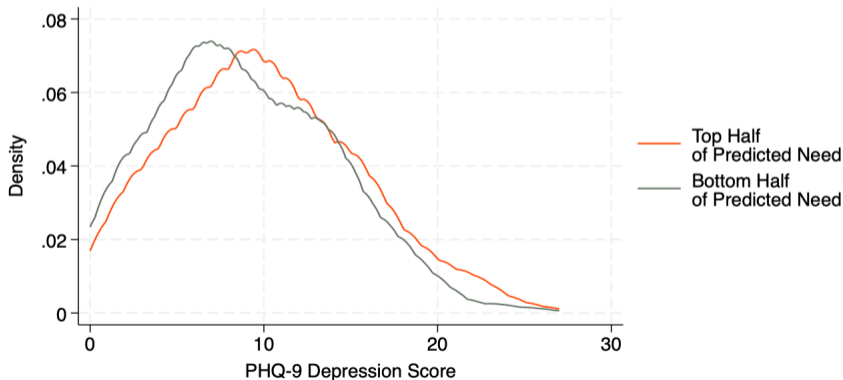
Before experiment:

1. Senders rank friends' mental health need
2. Survey recipients' mental health

Why community-based senders?

Senders know which friends are more in need: Highest ranked friend is 25% more likely to have depression

- ▶ Not explained by demographic covariates



Note: Ranking done within the sender's friend group.

Senders know friends are in need, but do they share mental health content?

Measuring rates of sharing mental health content

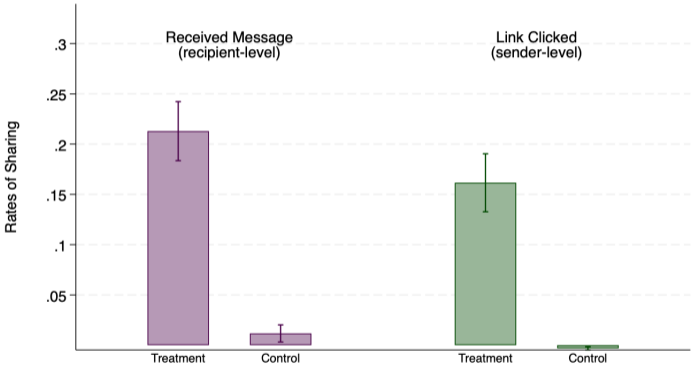
1. Recipient receipt of message

- ▶ Recipient stated she received the message (midline or endline survey)
- ▶ Recipient can be identified from senders' screenshots
 - ▶ Incentivized senders to send back confirmation screenshots

2. Link clicks

- ▶ Content included links to YouTube awareness videos
- ▶ Each sender sent **unique and trackable** links

Despite knowledge of need, senders are reticent to share mental health information



Disclosed pools the 'targeted' and 'non-targeted' framings which have a less than 0.01 percentage point difference. Non-Disclosed framing is 'non-targeted'.

Senders may worry others will associate them with mental health services

Social image concerns from sharing:

- ▶ Could signal sender knows about mental health services because they used them
- ▶ Could insult the friend (suggesting they need mental health help)

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“Social Cover” Solution: Encourage senders to disclose they are paid

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“Social Cover” Solution: Encourage senders to disclose they are paid

Disclosed compensation Introduction ($N_S=455$, $N_R=1375$)

- ▶ *[NGO name]* **is compensating me to share this** with all of my close friends.
- ▶ *[NGO name]* **is compensating me to share this** with friends who I think can benefit from the information.

Senders may worry others will associate them with mental health services

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Non-Disclosed compensation Introduction ($N_S=238$, $N_R=730$)

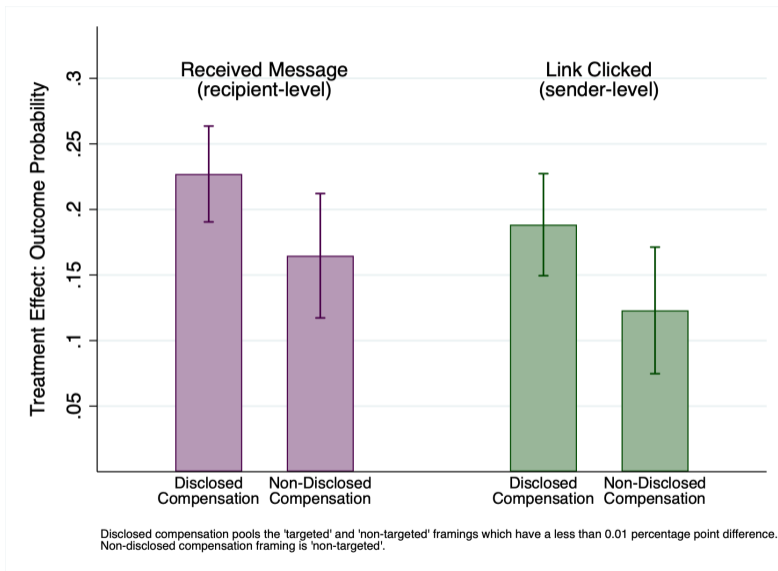
- ▶ **I want to try to share this** with all of my close friend.

▶ Example of Instructions

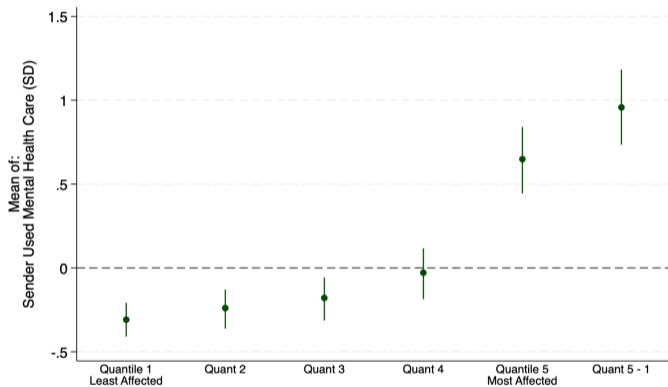
▶ Balance and Robustness

AEARCTR-0010702

Disclosing compensation induces more sending



Prior mental health care users are most sensitive to disclosure treatment



» Other characteristics

» Heterogeneous Effects

» ML Heterogeneity Approach

How are recipients impacted?

- ▶ No evidence that recipients take-up phone counseling (-0.01 point estimate, se 0.02)
- ▶ Large positive effects on social connectedness: 0.32 standard deviation increase (q-value 0.05)
 - ▶ Driven by increase in time spent helping friends (0.4 SD increase, q-value 0.05) and informal lending (0.19 SD, q-value 0.12)
- ▶ 137% increase in having any conversations about mental health (not including campaign itself) (q-value 0.05)
- ▶ Follow-up experiment: Recipients do NOT disregard information when they know that the friend was paid to share it

Study Summary

1. Community-based targeting is promising in this setting
 - ▶ Significant knowledge of who needs mental health services most.
2. Refugees are willing to share mental health information, but often need “social cover”, ie. an excuse.
 - ▶ Many senders withhold information (only share with 22% overall)
 - ▶ **But disclosing compensation partly overcomes this: 37% increase**
 - ▶ Senders can use the excuse of compensation without recipients de-valuing the information (promising null effect)
 - ▶ Prior mental health care users most responsive to the disclosure encouragement
3. Light-touch WhatsApp intervention did not lead to formal care-seeking, but increased informal support:
 - ▶ Increased conversations about mental health (137%)
 - ▶ Improved informal social support (0.32 SD)

Thank you!
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Literature

- ▶ **Social learning** Breza and Chandrasekhar, 2019, Chandrasekhar et al., 2018, Banerjee et al., 2018, Bandiera et al., 2023, Hanna et al., 2014, Conley and Udry, 2010, Banerjee et al., 2013, Beaman et al., 2021, Niehaus, 2011, Acemoglu et al., 2014
- ▶ **Social image, stigma and prosociality** Bursztyn and Jensen, 2017, Bursztyn et al., 2020, Bursztyn et al., n.d., DellaVigna et al., 2012, Oster et al., 2013, Kőszegi, 2006, Golman et al., 2017, Bénabou and Tirole, 2006, Gneezy et al., 2011, Bowles and Polania-Reyes, 2012, Buchmann et al., 2021
- ▶ **Mental health** Tol et al., 2020, Chen et al., 2022, Bloom et al., 2012, Ridley, 2022, Ridley et al., 2020, Banerjee et al., 2023, Harker Roa et al., 2023, Bhat et al., 2022, Islam et al., 2021, **health stigma** Derksen et al., 2022, Yang et al., 2023, **targeting** Alatas et al., 2016, Hussam, Rigol, and Roth, 2022, Goldberg et al., 2018, **RCTs in humanitarian contexts** Hussam, Kelley, et al., 2022, Stillman et al., 2022, Baseler et al., 2023, Alan et al., 2021

Conceptual Framework: Signalling Costs of Sending

$$U(S) = \underbrace{\xi(h1_{s=1})}_{\substack{\text{Health benefit} \\ \text{to recipient} \\ \text{(sender's belief)}}} - \underbrace{\varphi(\pi_{post})}_{\substack{\text{social image cost} \\ \text{to sender}}} - \underbrace{\phi(\omega_{post})}_{\substack{\text{social image cost} \\ \text{to recipient}}} + \underbrace{M(S)}_{\substack{\text{monetary incentive} \\ \text{if sends}}} \quad (1)$$

$\pi_{post} = P(\text{Type}_s = A|S)$: posterior belief that the sender is a prior user

$\omega_{post} = P(\text{Type}_r = V|S)$: posterior belief that the recipient is vulnerable

A1: Prior users have higher efficacy beliefs

A2: Vulnerable types have higher health benefit than non-vulnerable types.

- ▶ Sending information signals the sender's or recipient's type

(Follows the logic of the signalling model discussed by Chandrasekhar et al., 2018)

Do social image concerns affect information sharing?

▶ Back **H1: Senders share more when the negative social signal is dampened.**

Dampen signal: Visible financial incentive

Cash mechanically can induce more participation from users and non-users

⇒ Can be less "telling" that a sender who shares is a prior user

⇒ Can decrease image costs of sending ($\frac{\partial \pi_{post}^S}{\partial M} < 0$, $\frac{\partial \omega_{post}^S}{\partial M} < 0$ for monetary incentive M)

Varying only visibility of the incentive identifies solely the image channel

Testable prediction: If senders encouraged to disclose their financial compensation change their sharing rates then image concerns are binding.

▶ Bénabou and Tirole, 2006 parallel

Do senders internalize image costs incurred by recipients?

H2: Senders are concerned for their friend's image. [▶ Back](#)

Sharpen signal: Suggest recipient is targeted on need

⇒ Makes it more "telling" that the recipient is in need
($\tilde{\omega}_{post} > \omega_{post}$ where $\tilde{\omega}_{post}$ is the posterior vulnerability of the recipient when suggested she is in need)

Testable prediction: If senders are concerned for their friend's image then they will be less likely to share messages that emphasize the recipient's need.

Framing Effects Table

» Back - All

» Back - Pooled

» Back - Targeted

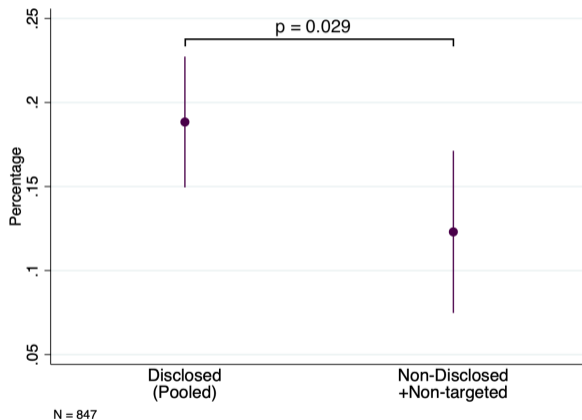
» Back - Clicks

Table 1: Effect of Message Framing on Sender Sharing

	(1) Received campaign (recipient-level)	(2) Received campaign (recipient-level)	(3) Any clicks (0/1) (sender-level)	(4) Any clicks (0/1) (sender-level)
Disclosed Compensation, <i>non-targeted</i>	0.217*** (0.025)		0.191*** (0.028)	
Disclosed Compensation, <i>targeted</i>	0.217*** (0.026)		0.173*** (0.028)	
Non-Disclosed Compensation framing, <i>non-targeted</i>	0.161*** (0.024)	0.165*** (0.024)	0.121*** (0.025)	0.123*** (0.025)
Disclosed Compensation framing, <i>pooled</i>		0.227*** (0.019)		0.188*** (0.020)
p-values				
Compensation _{<i>non-targeted</i>} – Non-compensation _{<i>non-targeted</i>}	[.113]		[.048]	
Compensation _{<i>targeted</i>} – Non-compensation _{<i>non-targeted</i>}	[.109]		[.133]	
Compensation _{<i>targeted</i>} – Compensation _{<i>non-targeted</i>}	[.997]		[.634]	
Compensation _{<i>pooled</i>} – Non-Compensation _{<i>non-targeted</i>}		[.038]		[.029]
Control Mean	0.012	0.012	–	–
Covariates	Lasso	Lasso	Lasso	Lasso
N	Double Selection 2665	Double Selection 2665	Double Selection 847	Double Selection 847

Link click data rule out misreporting

Sender links are 53% more likely to be clicked when the senders' compensation is disclosed rather than not disclosed.



Recipient Specification

Estimate effects with IV estimator

$$T_r = \gamma_0 + \gamma_1 A_r^T + X_r' \lambda_1 + X_s' \lambda_2 + \Gamma + \nu_r$$
$$y_r = \pi_0 + \pi_1 \widehat{T}_r + X_r' \phi_1 + X_s' \phi_2 + \Gamma + \eta_r$$

T_r is an indicator taking 1 if the recipient's sender shared any campaign messages

A_r^T is an indicator taking 1 if the recipient's sender was assigned to treatment

X_s' vector of sender covariates

X_r' vector of recipient covariates

Γ survey week fixed effects

Covariates and fixed effects selected using the lasso double-selection procedure.

[▶ Back](#)

Recipients do not take up the helpline

	(1) Called Helpline	(2) Willing to accept call from helpline
<hr/>		
IV		
<hr/>		
Sender Participated (sent to anyone)	-0.011 (0.019)	-0.017 (0.101)
<hr/>		
FDR-adjusted q-value	1	1
Control Mean	0.016	0.541
Double selection	Yes	Yes
N	1021	794

► Specification

Largest effects on recipients come through activation of social support

	(1) Social Connectedness Index (SD)	(2) Labor Assistance Freq. (SD)	(3) Borrowed (0/1)	(4) Lent (0/1)
IV Sender participated (sent to anyone)	0.317** (0.152)	0.413** (0.169)	0.193** (0.084)	0.002 (0.040)
FDR-adjusted q-value	.052	.046	.124	1
Control Mean	-0.005	-0.005	0.594	0.086
Double selection	Yes	Yes	Yes	Yes
N	1022	1022	1021	1021

Mental health information exchange increased, but not stigma perceptions

	(1) Expected Benefit from MH Care (SD)	(2) Own Stigma Index (SD)	(3) Stigma Beliefs 2nd Order (SD)	(4) Any conversations about mental health
IV Sender participated (sent to anyone)	0.182 (0.148)	-0.013 (0.146)	-0.091 (0.150)	0.153*** (0.059)
FDR-adjusted q-value	.973	1	1	.046
Control Mean	0.009	0.001	-0.020	0.111
Double selection	Yes	Yes	Yes	Yes
N	1015	1022	1022	1019

Recipient-focused experiment

▶▶ Back Enumerator introduces helpline to new recipients in sender's name (N=443 senders, N=629 recipients)

- ▶ No selection

Introduction randomized [AEARCTR-0011928]

- ▶ Disclosed compensation, targeted
- ▶ Disclosed compensation, non-targeted
- ▶ Non-Disclosed compensation, targeted
- ▶ Non-Disclosed compensation, non-targeted

Outcome: Willing for the counseling helpline to contact them by phone

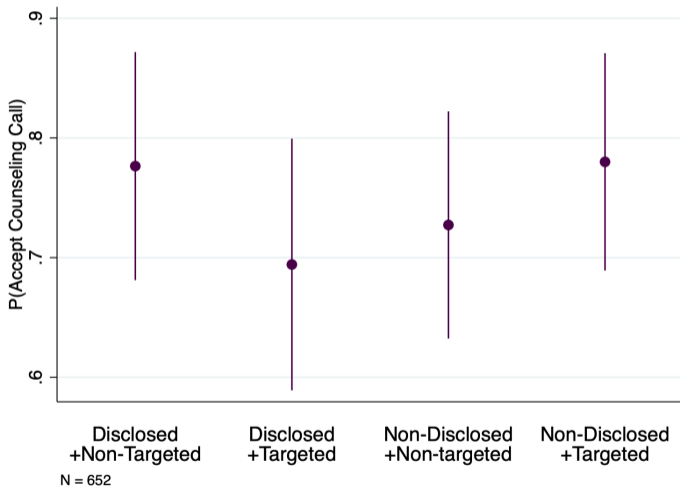
▶▶ Phrasings

▶▶ Design Flow

▶▶ Sender Acceptance Rates

No strongly significant differences between message framings

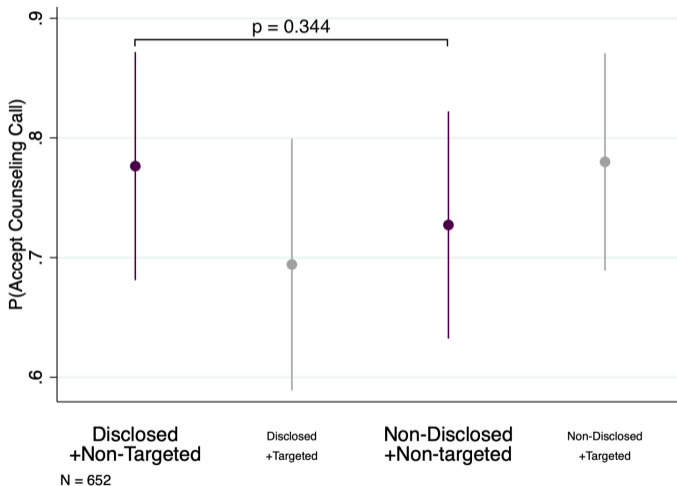
» Back



» Regression Table

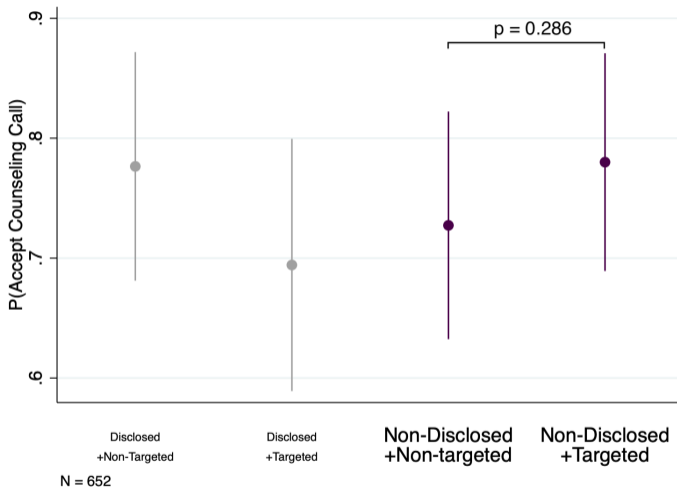
Compensation can be disclosed without decreasing recipient demand

» Back



» Regression Table

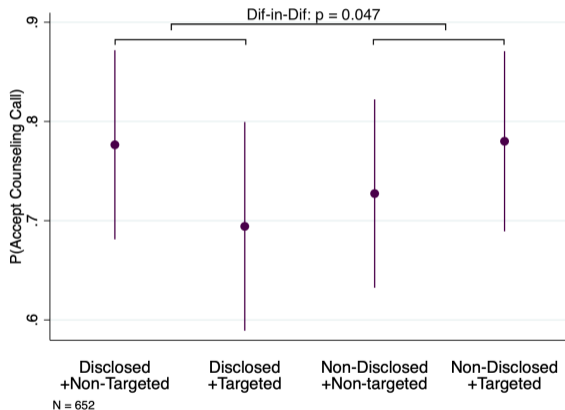
Targeted phrasing alone does not impact recipient demand



Disclosure and targeted phrasing interact negatively

» Back

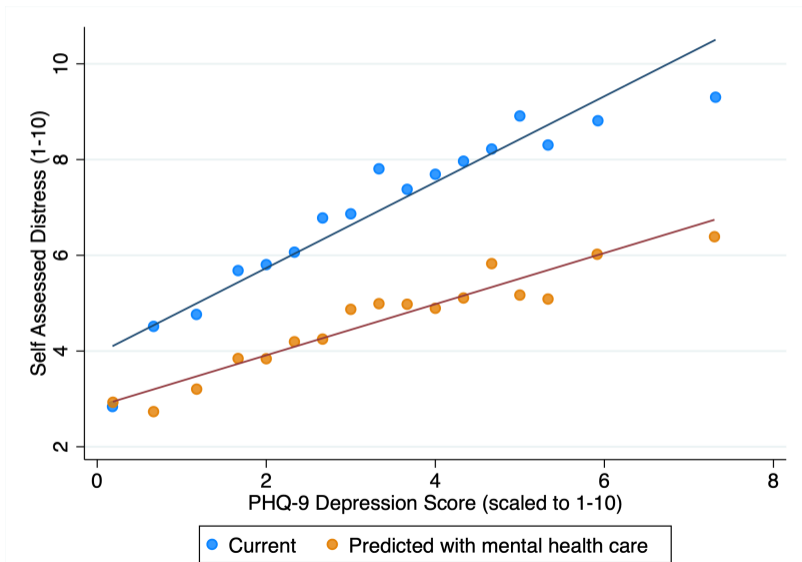
Estimate the interaction effect from the the difference-in-difference:
- 14.1 percentage point interaction (p-value 0.047)



» Regression Table

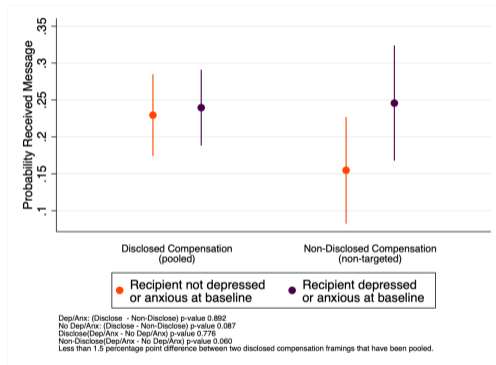
Do people think mental health care could help?

» Back



Do senders use information about who will benefit most?

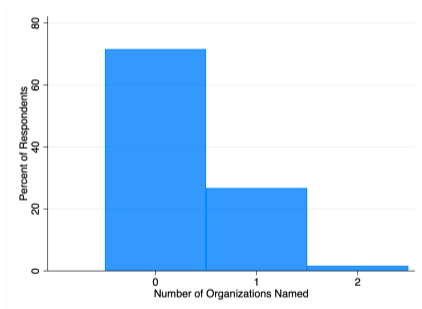
When facing signalling costs senders prioritize recipients with depression or anxiety



» Back - Framing Result

Most people cannot name one organization that provides free mental health care

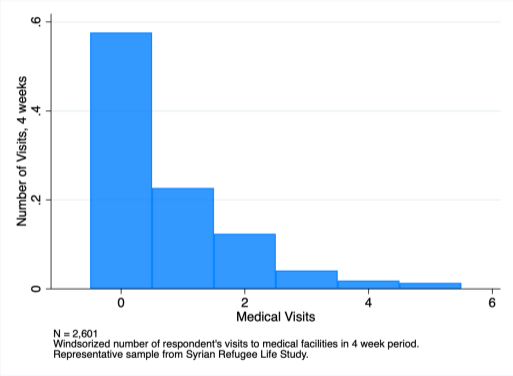
▶ Back



▶ Question text

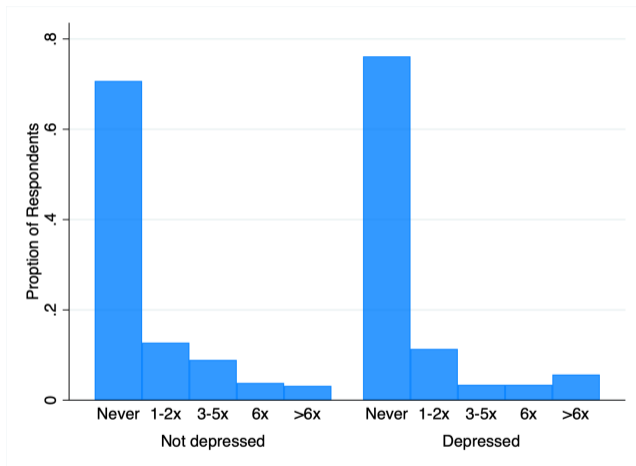
Visits to healthcare providers are common

» Back



Most people have not spoken about mental health in the past 6 months

» Back



x-axis categories are the number of times the respondent spoke to anyone about mental health in the past 6 months

» Question text

Distress Self-Assessment Questions

▶ Back

- ▶ 301. Please think about the level of psychological distress that you have been experiencing in the past two weeks, on a scale of 1 to 10. Some symptoms of psychological distress are fatigue, sadness, anxiety, avoidance of social situations, fear, anger, mood swings, and feeling bad towards yourself. Where would you rate yourself from 1 to 10, where 1 means you experience no distress at all, and 10 means you experience severe psychological distress almost every day?
- ▶ 302. Imagine that you will start using mental health services, such as calling a helpline, visiting a specialist, or receiving medication. After one month, where do you think your psychological distress will be on a scale of 1 to 10? Again 1 means no distress at all and 10 means you experience severe psychological distress almost every day.

Sender Elicitation

▶ Back

Random sample ($\sim 5,000$) nominated senders; elicitation in random order

- ▶ **Well-known or well-regarded:** Think of the people who you know in your community, or the network of people you interact with. From among those people, tell me the name and phone number of one or two people who you know of in your community who are well-known and thought of highly. This could be because their opinions are respected, or simply because they are well-liked.
- ▶ **Community-minded:** Now, please tell me the name and phone number of one or two people you know who you believe are community-minded. This could be because they volunteer in an organized way, or they're simply very helpful to others.
- ▶ **Good at spreading information:** Now tell me the names and phone numbers of one or two people who, when they share information, many people get to know about it. For example, if they share information about job opportunities, news about Syria, or a wedding, many people would learn about it.
- ▶ **Random sample:** Identified through random digit dialing

Friend Elicitation

1. Tell me the names of those friends or extended family members whose house you visit or who visit your house frequently, or with whom you socialize frequently such as at a café or park?
2. Tell me the names of different people who you give advice on financial/health/personal issues or who give you important advice?
3. If you need someone to watch your children, drive you to an appointment, or take time to help you with another task, who helps you, or do you help?
4. Does anyone borrow bread, other groceries or money from you, and who are these people? Or, who do you go to when *you* urgently need these things? Or, whose house do you go to if there is not enough to eat at your home, or who comes to eat at your house?

Sender Ranking of Friends' Need

Existing research shows that over 50% of people in Jordan are living in distress, including ongoing sadness, helplessness, stress, or having trouble sleeping. If we go back and think of the [2/3/4...] friends who you listed, which of them do you think suffer from sadness and stress in their lives, and who would benefit the most from receiving information about identifying and managing psychological distress?

Please help me list them in order of who will benefit the most and who will benefit the least. Let's start with the friend who will benefit the most or the friend who will benefit the least, then we'll ask about everyone.

▶ Back

Recipient Baseline Balance

» Back - Design

	(1) Recipient Surveyed Baseline	(2) Recipient Surveyed Baseline
Ranked Recipient Need	-0.004 (0.007)	
Highest need recipient in friend group		0.012 (0.021)
Control Mean	1	1
Covariates	Network Size	Network Size
N	2548	2548

No significant heterogeneity in senders' ability to target

» Back

	(1) Recipient depressed at baseline (0/1)	(2) Recipient depressed at baseline (0/1)	(3) Recipient depressed at baseline (0/1)	(4) Recipient depressed at baseline (0/1)	(5) Recipient depressed at baseline (0/1)	(6) Recipient depressed at baseline (0/1)
Highest need recipient in friend group	0.111*** (0.030)	0.109*** (0.029)	0.109*** (0.030)	0.108*** (0.038)	0.107*** (0.029)	0.112*** (0.039)
Highest Need X Sender stigma 1st order	0.038 (0.029)					
Highest Need X Sender stigma 2nd order		-0.004 (0.029)				
Highest Need X Sender altruism			0.008 (0.031)			
Highest Need X Sender female				0.000 (0.059)		
Highest Need X Sender social desirability					0.028 (0.029)	
Highest Need X Sender depressed						-0.007 (0.058)
Control Mean	0.435	0.435	0.435	0.435	0.435	0.435
Covariates	No controls	No controls	No controls	No controls	No controls	No controls
N	1326	1326	1326	1326	1326	1325

Survey Attrition

» Back

	(1) Recipient Surveyed Baseline	(2) Recipient Surveyed Baseline	(3) Recipient Surveyed Baseline	(4) Recipient Surveyed Endline	(5) Recipient Surveyed Endline	(6) Recipient Surveyed Endline
Treatment (sender asked to share)	-0.022 (0.027)			-0.023 (0.027)		
Disclosed Compensation, <i>non-targeted</i>		-0.031 (0.029)			-0.021 (0.028)	
Disclosed Compensation, <i>targeted</i>		-0.036 (0.030)			-0.044 (0.030)	
Non-Disclosed Compensation framing, <i>non-targeted</i>		-0.036 (0.030)	-0.033 (0.031)		-0.030 (0.029)	-0.029 (0.030)
Disclosed Compensation framing, <i>pooled</i>			-0.030 (0.027)			-0.031 (0.026)
F-Statistic	.71	.706	.789	.728	.792	.76
Control Mean	0.551	0.551	0.551	0.409	0.409	0.409
Covariates	No Covariates	No Covariates	No Covariates	No Covariates	No Covariates	No Covariates
N	2665	2665	2665	2665	2665	2665

Sender Balance

» Back

	Control Mean/SD	Treatment Mean/SD	Dif. Means SE
Female	0.435 [0.035]	0.416 [0.019]	-0.019 (0.040)
Age	39.396 [0.753]	40.520 [0.450]	1.124 (0.877)
In camp	0.130 [0.023]	0.159 [0.014]	0.029 (0.028)
Employed	0.353 [0.033]	0.355 [0.019]	0.002 (0.038)
Jordanian	0.101 [0.021]	0.113 [0.013]	0.011 (0.024)
Stigma (1st order)	-0.181 [0.062]	0.025 [0.040]	0.206*** (0.074)
Stigma (2nd order)	0.019 [0.069]	-0.033 [0.039]	-0.052 (0.079)
Dictator allocation	4.011 [0.223]	3.917 [0.124]	-0.094 (0.255)
Social desirability	-0.018 [0.063]	-0.015 [0.040]	0.004 (0.075)
PHQ-2	0.064 [0.067]	0.046 [0.040]	-0.018 (0.078)
GAD-2	0.059 [0.068]	0.024 [0.040]	-0.035 (0.079)
Depression/Anxiety likely	0.541 [0.035]	0.546 [0.020]	0.005 (0.040)
Used MH care before	0.198 [0.028]	0.166 [0.015]	-0.032 (0.031)
Social connectedness	-3.445 [0.045]	-3.443 [0.028]	0.003 (0.053)
MH Efficacy beliefs	0.069 [0.065]	0.021 [0.038]	-0.048 (0.075)
Network size	3.208 [0.118]	3.328 [0.068]	0.120 (0.136)
F-Stat	0.0	0.0	0.0
N Observations	207	640	847

Recipient Balance

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	Control Mean/SD	Treatment Mean/SD	Dif. Means SE
Female	0.464 [0.027]	0.447 [0.015]	-0.016 (0.031)
Age	37.512 [0.578]	38.546 [0.355]	1.034 (0.679)
In Camp	0.128 [0.021]	0.174 [0.014]	0.046 * (0.025)
Employed	0.364 [0.027]	0.358 [0.015]	-0.005 (0.030)
Refugee	0.947 [0.014]	0.895 [0.011]	-0.051 ** (0.018)
Stigma (1st order)	-0.097 [0.055]	0.023 [0.031]	0.120 * (0.063)
Stigma (2nd order)	0.041 [0.053]	-0.008 [0.031]	-0.049 (0.061)
Social desirability	-0.080 [0.053]	0.024 [0.031]	0.104 (0.061)
PHQ-9	9.562 [0.288]	9.342 [0.163]	-0.220 (0.331)
GAD-2	2.485 [0.103]	2.399 [0.057]	-0.086 (0.118)
Depression/Anxiety likely	0.567 [0.027]	0.536 [0.015]	-0.030 (0.031)
Used MH care before	0.067 [0.014]	0.047 [0.006]	-0.020 (0.015)
F-Stat	1.76	1.76	1.76
N Observations	341	1082	1423

Balance by Framing Arm

	Control Mean/SD	Framing 1 Mean/SD	Framing 2 Mean/SD	Framing 3 Mean/SD	(x ₋₀ - x ₋₁) SE	(x ₋₀ - x ₋₂) SE	(x ₋₀ - x ₋₃) SE
Female	0.435 [0.035]	0.397 [0.033]	0.408 [0.034]	0.442 [0.034]	-0.038 (0.048)	-0.027 (0.049)	0.007 (0.048)
Age	39.396 [0.753]	41.068 [0.768]	40.374 [0.804]	40.102 [0.771]	1.672 (1.076)	0.978 (1.101)	0.706 (1.078)
In camp	0.130 [0.023]	0.155 [0.025]	0.136 [0.024]	0.186 [0.027]	0.025 (0.034)	0.005 (0.034)	0.056 (0.035)
Employed	0.353 [0.033]	0.329 [0.032]	0.393 [0.034]	0.344 [0.032]	-0.024 (0.046)	0.041 (0.048)	-0.008 (0.047)
Jordanian	0.101 [0.021]	0.068 [0.017]	0.102 [0.021]	0.167 [0.026]	-0.033 (0.027)	0.000 (0.030)	0.066 (0.033)
Stigma (1st order)	-0.181 [0.062]	-0.042 [0.066]	-0.001 [0.071]	0.118 [0.072]	0.140 (0.091)	0.180 (0.094)	0.299 (0.095)
Stigma (2nd order)	0.019 [0.069]	-0.068 [0.067]	-0.122 [0.066]	0.087 [0.069]	-0.087 (0.097)	-0.141 (0.096)	0.068 (0.097)
Dictator allocation	4.011 [0.223]	4.062 [0.203]	3.722 [0.226]	3.962 [0.213]	0.051 (0.302)	-0.289 (0.318)	-0.049 (0.309)
Social desirability	-0.018 [0.063]	-0.036 [0.068]	0.009 [0.071]	-0.015 [0.068]	-0.018 (0.093)	0.027 (0.095)	0.003 (0.093)
PHQ-2	0.064 [0.067]	0.047 [0.067]	0.060 [0.071]	0.033 [0.069]	-0.017 (0.095)	-0.004 (0.098)	-0.031 (0.097)
GAD-2	0.059 [0.068]	0.051 [0.070]	0.053 [0.072]	-0.030 [0.065]	-0.009 (0.098)	-0.006 (0.099)	-0.089 (0.094)
Depression/Anxiety likely	0.541 [0.035]	0.555 [0.034]	0.563 [0.035]	0.521 [0.034]	0.014 (0.048)	0.022 (0.049)	-0.020 (0.049)
Used MH care before	0.198 [0.028]	0.151 [0.024]	0.199 [0.028]	0.149 [0.024]	-0.047 (0.037)	0.001 (0.039)	-0.049 (0.037)
Social connectedness	-3.445 [0.045]	-3.458 [0.048]	-3.426 [0.051]	-3.443 [0.049]	-0.013 (0.066)	0.019 (0.068)	0.002 (0.066)
MH Efficacy beliefs	0.069 [0.065]	0.082 [0.058]	-0.086 [0.074]	0.061 [0.063]	0.014 (0.087)	-0.154 (0.098)	-0.008 (0.090)
Network size	3.208 [0.118]	3.320 [0.112]	3.296 [0.128]	3.367 [0.114]	0.112 (0.162)	0.088 (0.174)	0.160 (0.164)
F-stat relative to control	.75	.75	1.17	1.7	.75	1.17	1.7
F-stat relative to M2	.8	.8			.8		
F-stat relative to M3	1.58	1.58	2.15		1.58	2.15	
N Observations	207	219	206	215	426	413	422

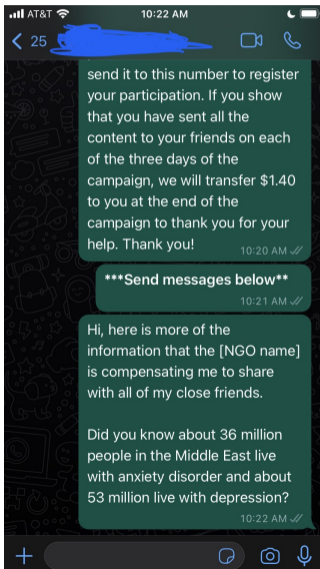
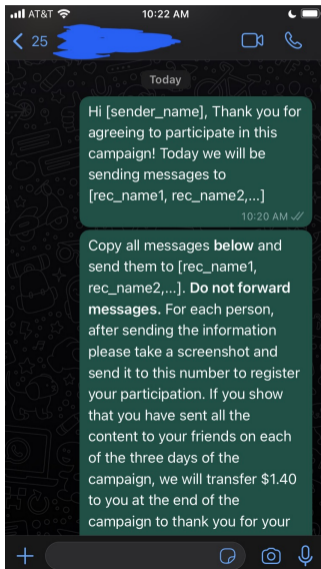
Framing Imbalances

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- ▶ Imbalance arose between framing arms: Framing 1 vs. Framing 2: F-stat = 0.66 ; Framing 1 vs. Framing 3: F-stat = 1.29; Framing 2 vs. Framing 3: F-stat = 2.32.
 - ▶ Results are robust to forcing the inclusion of imbalanced baseline covariates.
- ▶ An implementation error caused a random subset of "Non-disclosed compensation + non-targeted" group senders to not receive one of the three campaign messages during the second week. This led senders in that arm to participate more in that week.
 - ▶ An indicator for which observations in framing 3 randomly received one fewer message is included in the list of covariates used in the lasso double selection procedure.
 - ▶ Excluding that week drops one third of observations and the results are no longer significant but are qualitatively similar ("compensation + targeted" is sent 24% more than "non-compensation + non-targeted")

Example of campaign instructions

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Degree of Recipient Sample

» Back

Recipient Degree	N	%
1	2,516	95.09
2	105	3.97
3	17	0.64
4	8	0.30

Works Cited

Bolton, P., Bass, J.K., Zangana, G.A.S. et al. A randomized controlled trial of mental health interventions for survivors of systematic violence in Kurdistan, Northern Iraq. *BMC Psychiatry* 14, 360 (2014).

<https://doi.org/10.1186/s12888-014-0360-2>

DePierro, Vivian. Story, Science, and Self-Care in a Refugee Community: Initial Impact of The Field Guide for Barefoot Psychology. *Beyond Conflict* research brief. (2020).

Hussam, Reshmaan, Natalia Rigol, and Benjamin N. Roth. 2022. Targeting High Ability Entrepreneurs Using Community Information: Mechanism Design in the Field. *American Economic Review*, 112 (3): 861-98. DOI: 10.1257/aer.20200751

Alatas V, A. Banerjee, R. Hanna, B. Olken, J. Tobias. 2012. Targeting the Poor: Evidence from a Field Experiment in Indonesia. *American Economic Review*; 102(4):1206-1240.

Question text: Spoken to a friend about mental health

In the past 6 months, how often did you and any of your friends talk or message about mental health or mental health resources? [» Back](#)

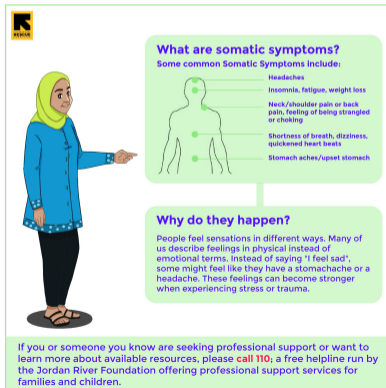
Question text: Know organizations

What are some organizations you know of that provide mental health services or resources? (**Enumerator: Do not read options.**) [▶ Back](#)

Intervention Details

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- ▶ 3 batches of content over 8 days
- ▶ Includes infographics, text with normalizing statistics, and links to YouTube videos with further awareness content.
- ▶ Advertises free helpline



The infographic features a woman in a blue jacket and yellow headscarf pointing to a diagram of a human body with green dots indicating areas of somatic symptoms. The diagram is connected to two text boxes: one titled 'What are somatic symptoms?' and another titled 'Why do they happen?'. A logo for the Jordan River Foundation is in the top left corner.

What are somatic symptoms?
Some common Somatic Symptoms include:

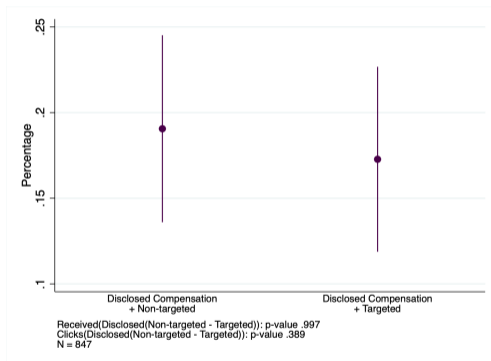
- Headaches
- Insomnia, fatigue, weight loss
- Neck/shoulder pain or back pain, feeling of being strangled or choking
- Shortness of breath, dizziness, quickened heart beats
- Stomach aches/upset stomach

Why do they happen?
People feel sensations in different ways. Many of us describe feelings in physical instead of emotional terms. Instead of saying "I feel sad", some might feel like they have a stomachache or a headache. These feelings can become stronger when experiencing stress or trauma.

If you or someone you know are seeking professional support or want to learn more about available resources, please call 110, a free helpline run by the Jordan River Foundation offering professional support services for families and children.

Suggesting the recipient was targeted on need does not decrease sending.

Difference in clicks of 1.8 percentage points.



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ML Heterogeneity Classification

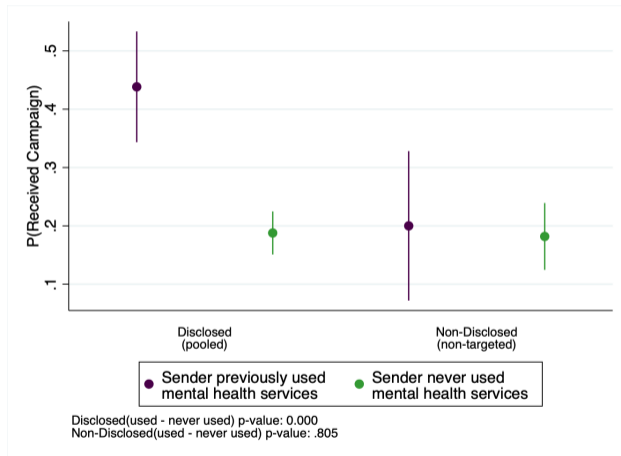
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Table 2: Differences in characteristics of highest and lowest group average treatment effects
10 (absolute) largest differences that were significant at the 95% confidence level

	$\delta_{highest20\%} - \delta_{lowest20\%}$	p-value
Sender used mental health care previously	0.944988849	8.14E-22
Sender depression score	0.368179213	0.000268826
Sender completed secondary school	0.326120191	0.001132315
Recipient lives in Mafraq governorate	0.310888155	0.000938143
Sender anxiety score	0.306338521	0.000752017
Sender elementary school incomplete	-0.366296684	0.000200877
Recipient lives in Irbid governorate	-0.462690771	1.14E-06
Sender 1st order stigma score	-0.526247898	7.29E-08
Sender marriage stigma score	-0.526467543	3.60E-08
Sender lives in Irbid governorate	-0.624297786	1.18E-11

Heterogeneous Treatment Effects by Prior Mental Health Care Use

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Experiment 2 Framings

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Disclose + non-targeted: Our project offered to pay your friend [sender name] to help us check if her friends are interested in this helpline, and she mentioned that you are one of the people she knows.

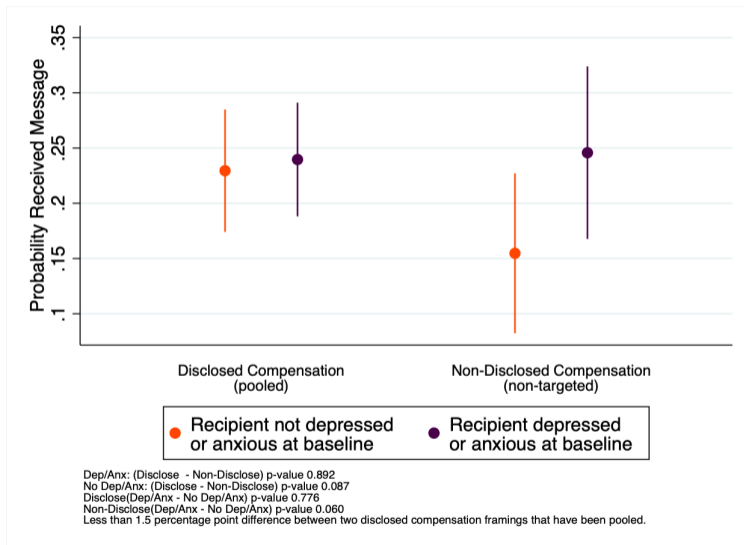
Disclose + targeted: Our project offered to pay your friend [sender name] to help us check if her friends are interested in this helpline, and she indicated that you or people you know might benefit from the information.

Non-disclosed + non-targeted: Your friend [sender name] wanted us to check if her friends are interested in this helpline, and she mentioned that you are one of the people she knows.

Non-disclosed + targeted: Your friend [sender name] wanted us to check if her friends are interested in this helpline, and she indicated that you or people you know might benefit from the information.

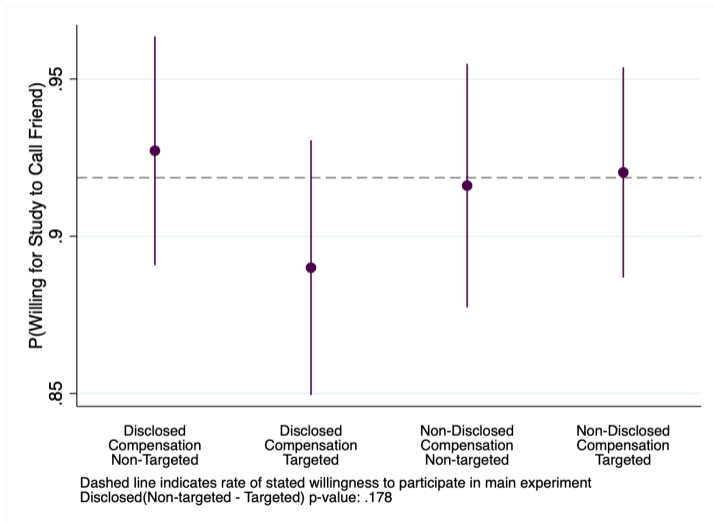
Senders Target When Sending is Socially Costly

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Experiment 2 Sender Willingness for Study to Contact Her Friends

» Back



Experiment 2: No average effect of disclosure or targeting, but significant negative interaction

▶ Back - All

▶ Back - Disclosure

▶ Back - Targeted

▶ Back - Dif-in-Dif

	(1) Willing to accept call from helpline (0/1)	(2) Willing to accept call from helpline (0/1)
Disclosed Compensation, <i>non-targeted</i>	0.049 (0.052)	
Disclosed Compensation, <i>targeted</i>	-0.033 (0.055)	
	0.053 (0.049)	
Disclosed Compensation framing, <i>pooled</i>		0.048 (0.051)
Targeted framing, <i>pooled</i>		0.053 (0.048)
Compensation X Targeted framing		-0.141** (0.071)
Reference category mean:		
Non-Disclosed compensation, <i>non-targeted</i>	0.685	0.685
p-value		
Compensation _{targeted} – Compensation _{non-targeted}	0.120	
Disclosed _{non-targeted} – Non-Disclosed _{targeted}	0.940	
Disclosed _{targeted} – Non-Disclosed _{targeted}	0.090	

Sender type matters for NGO engagement but not peer engagement

» Back

	(1) Received campaign (recipient-level)	(2) Any clicks (0/1) (sender-level)	(3) Received Campaign Recipient Report	(4) Received Campaign Sender Shared Screensh
Sender: Well-Known/Regarded X Treatment	0.204*** (0.022)	0.177*** (0.023)	0.161*** (0.032)	0.101*** (0.015)
Sender: Community-minded X Treatment	0.325*** (0.039)	0.153*** (0.033)	0.243*** (0.044)	0.198*** (0.033)
Sender: 'Gossip'/Spreads Information X Treatment	0.244*** (0.043)	0.227*** (0.043)	0.227*** (0.050)	0.139*** (0.030)
'Well-know/Regarded' - 'Community-minded'	[.007]	[.545]	[.136]	[.009]
'Well-know/Regarded' - 'Gossip/Spreads Information'	[.406]	[.306]	[.267]	[.264]
'Community-minded' - 'Gossip/Spreads Information'	[.162]	[.172]	[.8156]	[.182]
Control Mean	0	0	0	0
Covariates	Lasso Double Selection	Lasso Double Selection	Lasso Double Selection	Lasso Double Selection
N	2146	691	1924	2146

Experiment 2 Design - Recipient Take-Up

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Sender indicates her consent to all framings she is ok with

Part 4: Measure impact of exogenous framing on recipient take-up

Call recipients and say framing as assigned at the sender-level.

Randomize at the recipient level to one of the framings that the sender has consent to

Framing 1: Our project offered to pay your friend [sender name] to help us check if her friends are interested in this helpline, and she mentioned that you are one of the people she knows.

Framing 2: Our project offered to compensate your friend [sender name] financially to help us check if her friends are interested in this helpline, and she indicated that you or people you know might benefit from the information.

Framing 3: Your friend [sender name] wanted us to check if her friends are interested in this helpline, and she mentioned that you are one of the people she knows.

Framing 4: Your friend [sender name] wanted us to check if her friends are interested in this helpline, and she indicated that you or people you know might benefit from the information.

Measure recipient take-up:

"Specifically the helpline provides free advice and counseling over the phone for women to manage daily stressors. The helpline program does not offer any financial benefits, including transportation benefits. The helpline provides free phone counseling that may help people's mental health. **Would you like to learn more about using the counseling service?"**

Part 5: Recipient Survey

Attempt 5-minute survey of mental health need and beliefs with all recipients

Experiment 2 Design - Senders

» Back

Part 1: Call senders, elicit sender network

Part 2: Measure senders' willingness to share conditional on the framing:

"There is a free counseling helpline that we could tell your friends about. If you want we can contact your friends about the helpline and mental health services."

Randomize sender to 1 framing
(framing remains constant across all parts below)

Framing 1: We may tell her that the project offered to pay you to help us check if your friends are interested in this helpline, and you mentioned she is one of the people you know.

Framing 2: We may tell her the project offered to compensate you to help us check if your friends are interested in this helpline, and you indicated she or people she knows might benefit from the information.

Framing 3: We may tell her you wanted us to check if your friends are interested in this helpline, and you mentioned she is one of the people you know.

Framing 4: We may tell her you wanted us to check if your friends are interested in this helpline, and you indicated she or people she knows might benefit from the information.

"Which friends do you think we should contact?"

Receive \$0.35 more for every friend who they agree to.

Part 3: Shut down selective sending based on framing

"For the helpline in particular we are trying to raise awareness as broadly as possible. We'd like to ask if you would let us contact your other friends, [list friends who were not selected for the helpline already], and if you agree to this then we would transfer you \$1.4 more, to thank you for your help."

THEN,

"There are different ways that people on the research team were trained to introduce the helpline. For each of the following introductions can you tell me if it would be ok to say if we call your friends about the helpline? If you are willing for us to introduce the helpline in the other ways it will help our protocols move more smoothly, so we will add \$1.4 to your compensation. "

Experiment 2: Impact of introduction on recipient take-up of helpline

$$p_r = \alpha_0 + \alpha_1 \text{DiscloseXNontarget}_r + \alpha_2 \text{DiscloseXTarget}_r + \alpha_3 \text{NonDiscloseXTarget}_r + \phi \quad (1)$$

$$p_r = \beta_0 + \beta_1 \text{Disclose}_r + \beta_2 \text{Target}_r + \delta \text{DiscloseXTarget}_r + \phi \quad (2)$$

ϕ includes all sender and recipient covariates, fixed effects, and error term

	(1) Willing to accept call from helpline (0/1)	(2) Willing to accept call from helpline (0/1)
Disclosed Compensation, <i>non-targeted</i>	0.049 (0.052)	
	0.053 (0.049)	
Disclosed Compensation framing, <i>pooled</i>		0.048 (0.051)
Targeted framing, <i>pooled</i>		0.053 (0.048)
Compensation X Targeted framing		-0.141** (0.071)
Reference category mean:		
Non-Disclosed compensation, <i>non-targeted</i>	0.685	0.685
Double selection	Yes	Yes
N	652	652