

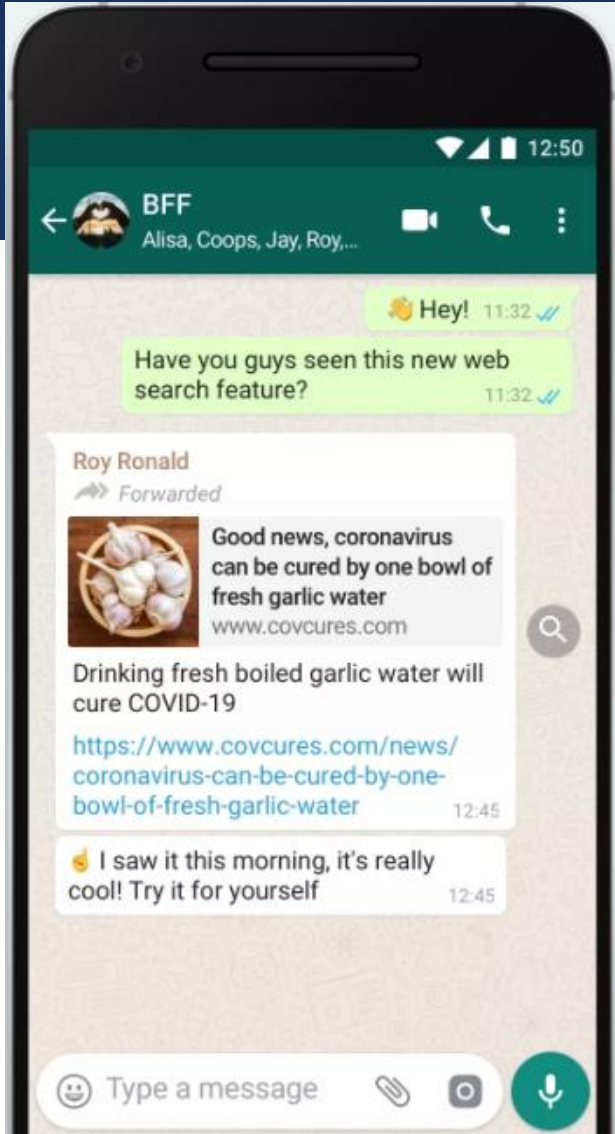
VACCINATION ACCEPTANCE
RESEARCH NETWORK

 SABIN VACCINE INSTITUTE

MAKING COVID-19 VACCINES **APPEALING**: PILOT MESSAGE TESTING IN INDIA

FEBRUARY 2022

BACKGROUND



- ❑ Wide-spread erosion of trust in public health systems
- ❑ Anti-vaccine rhetoric, misinformation & disinformation
- ❑ Often shared on various social media platforms
- ❑ Hesitancy varies by context, population, and time
- ❑ Public health messaging must be persuasive and effective to encourage vaccine uptake

SCOPING REVIEW & MTURK IN INDIA MESSAGE APPEALS SURVEY

WHICH MESSAGING APPROACHES ARE MOST PERSUASIVE?

Research question: How do different aspects of health communications impact vaccine attitudes or uptake?

Aim 1: Conduct a scoping review of peer-reviewed literature to map the evidence on the effectiveness of various aspects of health communications to affect vaccine attitudes and uptake.

Aim 2: Conduct an online survey using Amazon's mTurk crowdsourcing platform to assess clarity and appeal of six messages encouraging COVID-19 vaccination

SCOPING REVIEW

RESEARCH QUESTION

- Which elements of health communication have shown promise in positively influencing vaccine attitudes and uptake?

SCOPING REVIEW METHODS

Search strategy:

- Scoping review to describe existing peer-reviewed evidence base to inform future work
- Search terms for three concepts: health communication, vaccine acceptance/hesitancy, specific vaccines
- English articles, 2001-2021, MEDLINE/PubMed

Inclusion/exclusion criteria:

- Interventional, observational, and qualitative studies
- Original quantitative or qualitative data on the effectiveness of a message approach
- Outcomes either vaccine attitudes or vaccine uptake (not knowledge)
- No restrictions by study population or setting (e.g., clinic, school, online/social media, etc.)

SCOPING REVIEW

KEY RESULTS 1/3

We defined three primary attributes of vaccination communications: appeal, approach, and messenger

Appeal: core of the message to attract recipients' interest and attention and impart information

- E.g., disease focused, gain/loss frame

Approach: delivery mechanism by which to convey a specific message

- E.g., story-telling, tailoring, misinformation correction

Messenger: person or media that conveys the message

- E.g., health care professionals, community leaders, teachers, peers

SCOPING REVIEW

KEY RESULTS 2/3

- 617 articles found by scoping review
- 43 included in final analysis
 - Appeal (n=13), approach (n=13), messenger (n=17)
 - HPV (56%), influenza (16%), MMR (12%), etc.
 - USA (74%), other HIC (21%), LMIC (5%)
 - RCT (40%), quasi-exp (21%), qual (7%), survey (33%)
 - Online (46%), in-person (44%)
- Studies varied widely in design, target population, geography, physical location (online, clinic, school, etc.)
- Many interventions tested - including varied combinations of appeal, approach, messenger strategies
- Largely in high-income settings, focused on a limited number of vaccines, especially HPV, influenza, MMR
- Although not formally measured, high variation in study quality
- Few studies assessed vaccine uptake or vaccination rates
- Effectiveness of interventions varied substantially by context

SCOPING REVIEW

KEY RESULTS 3/3

Appeal:

- Appeals mostly health outcome focused, but also studies with gain/loss frame or adverse events focus
- Health outcome appeals effective for some (college students, sex workers) but not consistent for others (parents, pregnant)
- Gain/loss frame may be more useful among individuals with riskier behaviors (context of HPV vaccine)

Approach:

- Mixed results on misinformation correction, which reduced intention to vaccinate (e.g., vaccine-autism myth debunking) in one setting but improved attitudes through debunking or use of fact-checking labels for online content in other settings
- Storytelling on social media generated high engagement, but few studies have rigorously evaluated the impact of this approach
- Tailoring messages showed positive results in several populations (adolescents, vaccine hesitant parents, and minority groups)

Messenger:

- Well-established findings that health care providers are trusted messengers often able to improve attitudes and intentions
- High-quality presumptive communication and persistence strategies important for provider recommendations
- Mixed results for other messengers, such as teachers (who were reported to be well trusted) or experts in media

CONCLUSION

- Variations in study design, location, intervention, and quality precluded meaningful comparisons or strong conclusions
- Therefore, although individual studies provide some interesting insights, there is limited evidence to guide design and implementation of communication strategies broadly or for specific settings
- New studies are needed to rigorously evaluate impact of appeal, approach, messenger aspects of communication strategies on vaccination uptake in different settings
 - Appropriately designed and implemented randomized controlled trials, qualitative studies, program evaluations
 - Outcome measurement of attitudes, intentions, and, critically, vaccine uptake / vaccination rates
 - Consideration of both in-person and online interventions and settings and their interlinkages
 - Focus on other vaccines (beyond HPV and influenza) and LMIC settings

MTURK IN INDIA MESSAGE APPEALS SURVEY

RESEARCH QUESTION

- How do six ads to encourage COVID-19 vaccination differ in clarity and appeal among an online population in India?

MESSAGE TESTING STUDY

MESSAGE DEVELOPMENT

Scoping review results informed the development of simple messages to encourage COVID-19 vaccination

- Six messages for three key types of vaccine appeals identified in the literature:
 - Health outcomes
 - Social norms
 - Economic benefits of vaccination
- Each of these appeals is displayed with an image of a different messenger:
 - Health provider
 - Peer/friend

WHICH AD WOULD YOU PREFER?

1: HO-HCP

More than 5 million people have died from COVID-19.

The COVID-19 vaccine is safe and effective at protecting you from getting COVID.

It is the best way to protect yourself and those you love.



3: ECON-HCP

People that get severe COVID-19 take an average of 6 weeks to recover. This recovery means time away from your friends, family and work.

By getting the COVID-19 vaccine, you will be less likely to contract a severe case of COVID.

This means you can earn money to provide for yourself and your family.



5: NORM-HCP

More than half of the world's population, including myself, have gotten the COVID-19 vaccine. And I recommend it to everyone.

The vaccine will protect you and your community from severe COVID.

Getting vaccinated is the best thing we can do to protect ourselves and our community.



2: HO-PEER

I have gotten the COVID-19 vaccine and so have many of my friends and family.

Actually, the majority of people that have been offered the vaccine have gotten it.

Getting vaccinated is the best thing we can do to protect ourselves and our community



4: ECON-PEER

We have all felt the stresses and challenges of not being able to work and provide for our families because of the pandemic.

By getting the COVID-19 vaccine we can return to work safely and rebuild our economy.



6: NORM-PEER

I have gotten the COVID-19 vaccine and so have many of my friends and family.

Actually, the majority of people that have been offered the vaccine have gotten it.

Getting vaccinated is the best thing we can do to protect ourselves and our community



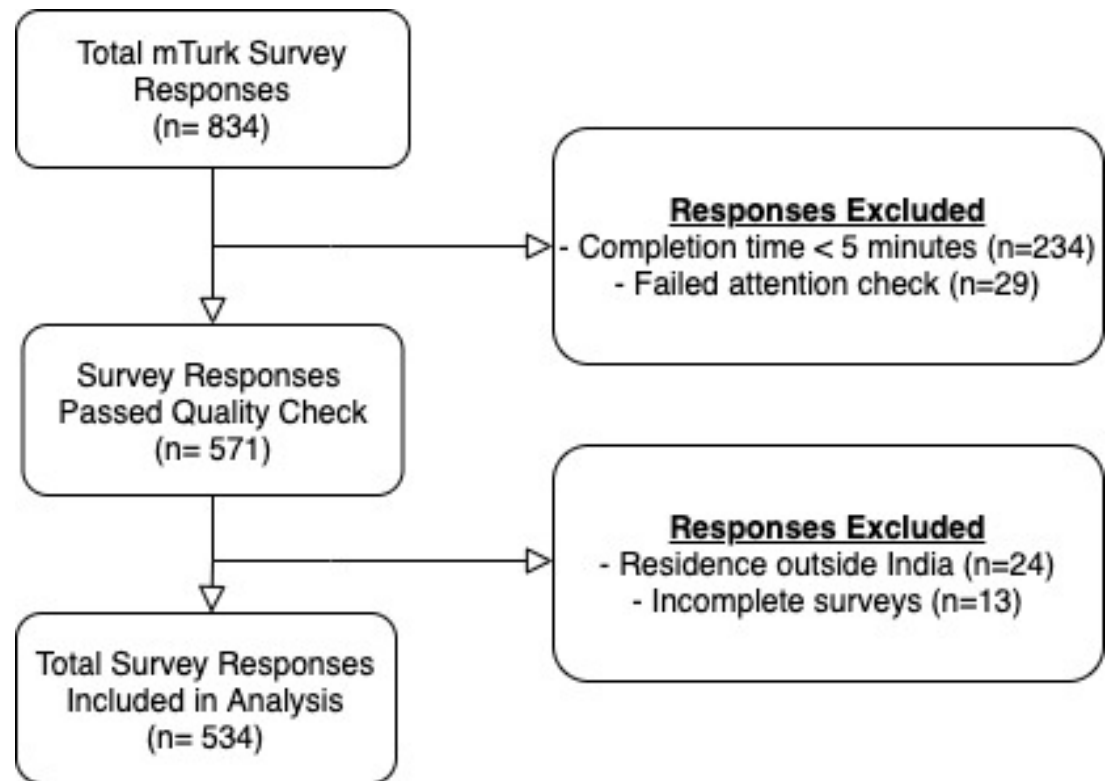
STUDY DESIGN

- **Study design:** Online survey distributed through Amazon's mTurk crowdsourcing platform
- **Location:** India
- **Vaccine Messages:** Each respondent viewed and evaluated all six unique vaccine messages
- **Ad Questionnaire:** After each message, participants answered questions on message interest, motivation, etc.:
 - Ad was relevant to me
 - Ad was designed for people like me
 - I agree with the message provided in the ad
 - Ad would prompt me to tell someone about the COVID-19 vaccine
 - Ad motivates me to receive COVID-19 vaccination
 - Ad motivates me to get the COVID-19 vaccine for my child under 18 years of age

VACCINE HESITANCY DEFINITION

- **Vaccine Hesitancy:** Three questions were used to assess participant vaccine hesitancy
 - Have you ever delayed or decided not to get a recommended vaccine for reasons other than illness or allergy?
 - How concerned are you that a COVID-19 vaccine might not be safe?
 - How concerned are you that a COVID-19 vaccine might not prevent the disease?
- We categorized participants as lower hesitancy (0-1 “yes” responses) or higher hesitancy (2-3 “yes” responses)

PARTICIPANT FLOWCHART & CHARACTERISTICS

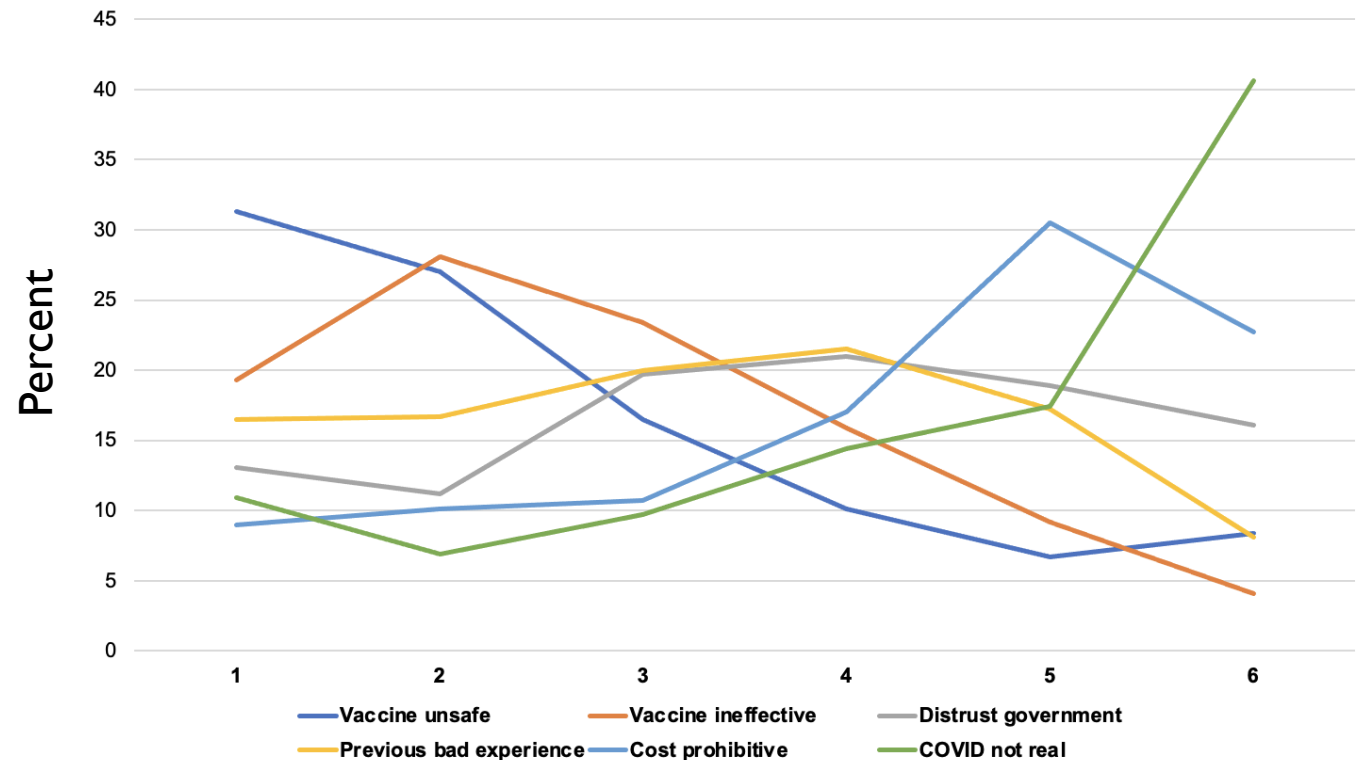


Characteristic*	No. (%)
Age	
18-24	26 (4.9)
24-39	448 (83.9)
40-64	56 (10.5)
65+	4 (0.7)
Gender	
Female	171 (32.1)
Male	362 (67.9)
Education	
Secondary	13 (2.5)
Bachelor's degree	417 (78.7)
Graduate degree	100 (18.9)

VACCINE ATTITUDES

Characteristic*	No. (%)
Vaccine Hesitancy	
Lower Hesitancy	175 (32.8)
Higher Hesitancy	359 (67.2)
Ever delayed recommended vaccine	
No	379 (72.3)
Yes	145 (27.7)
Concerned COVID-19 vaccine might not prevent the disease	
Extremely/Moderately	218 (40.8)
Slightly/Not at all	316 (59.2)
Concerned COVID-19 vaccine might not be safe	
Extremely/Moderately	175 (32.8)
Slightly/Not at all	359 (67.2)

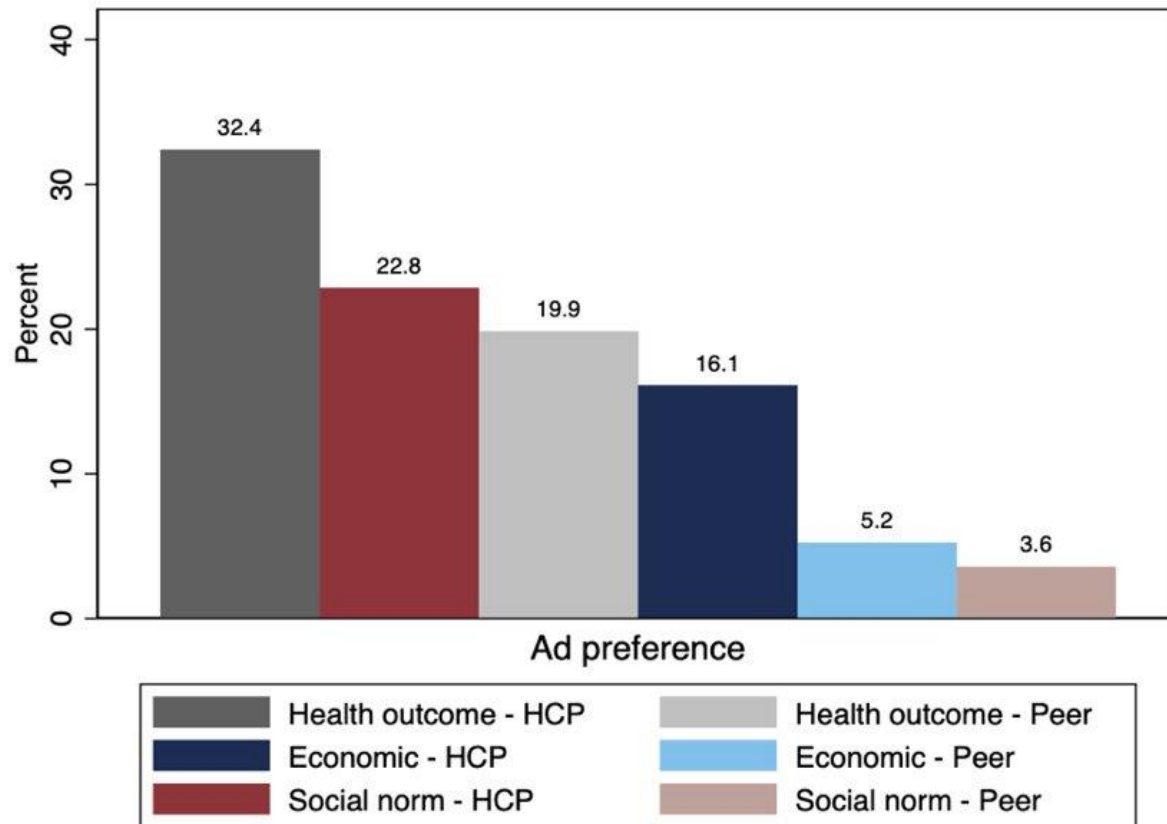
Participant ranking of COVID-19 vaccine concerns (1 highest, 6 lowest)



PARTICIPANT AD PREFERENCES

	HO/HCP	HO / Peer	Econ / HCP	Econ / Peer	Norm / HCP	Norm / Peer
I agree with the message in the ad						
Strongly agree/agree	515 (96.4)	519 (97.2)	492 (92.1)	507 (94.9)	521 (97.6)	521 (97.6)
Strongly disagree/disagree	19 (3.6)	15 (2.8)	42 (7.9)	27 (5.1)	13 (2.4)	13 (2.4)
Ad was designed for people like me						
Strongly agree/agree	497 (93.1)	500 (93.6)	466 (87.3)	483 (90.4)	497 (93.1)	504 (94.4)
Strongly disagree/disagree	37 (6.9)	34 (6.4)	68 (12.7)	51 (9.6)	37 (6.9)	30 (5.6)
Ad was relevant to me						
Strongly agree/agree	511 (95.7)	504 (94.4)	478 (89.5)	489 (91.6)	501 (93.8)	511 (95.7)
Strongly disagree/disagree	23 (4.3)	30 (5.6)	56 (10.5)	45 (8.4)	33 (6.2)	23 (4.3)
Ad would prompt me to tell someone about the COVID-19 vaccination						
Strongly agree/agree	506 (94.8)	513 (96.1)	488 (91.4)	495 (92.7)	494 (92.5)	516 (96.6)
Strongly disagree/disagree	28 (5.2)	21 (3.9)	46 (8.6)	39 (7.3)	40 (7.5)	18 (3.4)
Ad motivates me to get the COVID-19 vaccine						
Strongly agree/agree	522 (97.8)	515 (96.4)	492 (92.1)	502 (94.0)	503 (94.2)	518 (97.0)
Strongly disagree/disagree	12 (2.2)	19 (3.6)	42 (7.9)	32 (6.0)	31 (5.8)	16 (3.0)
Ad motivates me to get my child the COVID-19 vaccine						
Strongly agree/agree	416 (88.1)	415 (87.9)	383 (81.5)	385 (82.1)	400 (84.9)	407 (86.2)
Strongly disagree/disagree	56 (11.9)	57 (12.1)	87 (18.5)	84 (17.9)	71 (15.1)	65 (13.8)

OVERALL AD PREFERENCE



- Overall ad preference range:
 - 3.6% (n=19) social norm/peer ad
 - 32.4% (n=173) health outcome/HCP ad
- Half preferred health outcome ad (n=279, 52.3%)
 - Delivered by HCP (n=173, 62.0%) or peer (n=106, 38.0%)
- Over two-thirds of participants (n=381, 71.4%) had preference for HCP over peer ads (n=153, 28.7%)
- Vaccine hesitancy not related to preference (p=0.513):
HCP vs. peer ads (p=0.522); message type (p=0.284).

SUMMARY

- Our study population was homogeneous, skewed to ages 24-39, male, highly-educated individuals
- Very high levels of agreement with various aspects of ads across the six message constructions
- Majority of participants preferred ads delivered by HCPs, health outcome message
- Next highest preferences were social norm and economic appeals delivered by HCPs
- **Next steps:**
 - Adapt messages for testing in-person in different settings and populations
 - Evaluate messages through high-quality randomized study designs and qualitative research
 - Develop standardized approaches and resources for message development and testing by local leaders

THANK YOU!

JHU: Daniel Erchick, Kristian Balgobin, Alexandra Michel, Rebecca Shore, Gretchen Schulz, Rupali Limaye (PI)
Funding: Sabin Vaccine Institute