

# Combating Misinformation with Behavioral Science

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## On decisions



Think  
Automatically

We tend to  
think fast and rely on  
**mental shortcuts**



Think  
Socially

We cooperate, as long as  
others do the same,  
and **rely on** social networks  
and **norms**



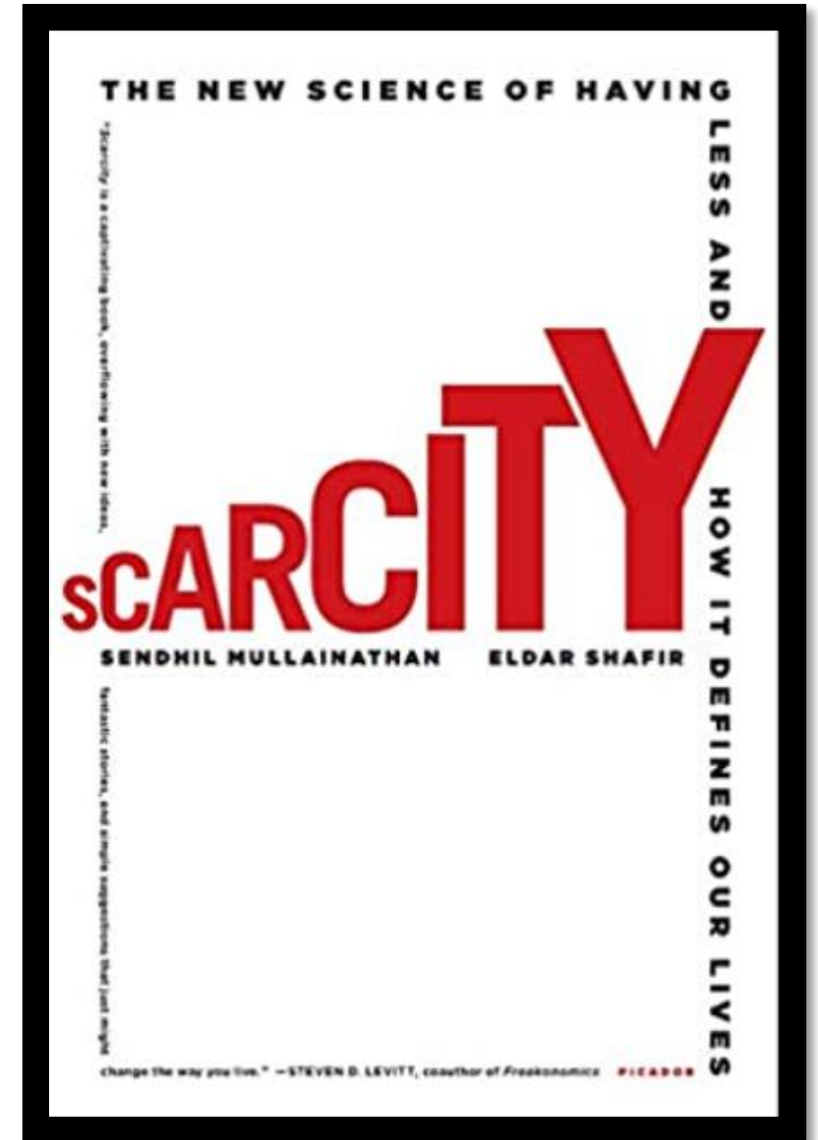
Think <sup>with</sup>  
Mental Models

We do not invent new  
concepts, but rather use  
**mental models** drawn **from**  
society and a **shared history**

# Understanding the context of policy, poverty and scarcity

**Psychology of Poverty** and individual decision making → **scarcity** affects **long-term planning**, **aspirations** and **focus**

**Scarcity** and the policy professional context → **inertia**, **confirmation bias** and **group dynamics**



# Who we are

A development-focused,  
applied behavioral science  
unit in the World Bank.

Integrate behavioral sciences  
to development policy and  
generate capacity in World  
Bank operations,  
governments and partners at  
scale.



On a good day, we support a portfolio of  
50+ projects, many multi-country

We provide advice and support to help policymakers define and diagnose policy problems from a behavioral perspective.

We design and evaluate behaviorally-informed solutions to improve development outcomes.

With our global network of partners, we expand the capacity and use of behavioral insights in policy at scale.



# What we do

eMBeD works in a variety of modalities depending on the needs of the team and client:

## 1. LEARNING AND OUTREACH:

Aimed at creating awareness of behavioral interventions and building capacity to apply behavioral science in practice. They can take the form of workshops, brief presentations, or embedded participation in events such as retreats or learning days.

## 2. ADVISORY AND ANALYTICAL SERVICES:

Aimed at providing guidance for project design and range from behavioral diagnostic mappings, intervention design, to guidance notes.

## 3. DATA COLLECTION AND METHODOLOGICAL RESEARCH:

Aimed at advising, designing, and/or implementing data collection efforts to capture behaviors and design methodological approaches to measure psychological constructs in development settings.

## 4. PROGRAM IMPLEMENTATION AND EVALUATION:

Aimed at supporting teams with the design, implementation, and evaluation of behavioral interventions.



# What we do



**Climate & Energy**



**Effective  
Organizations**



**Financial Inclusion &  
Taxation**



**Gender Equality**



**Health & Well-being**



**Learning & Beliefs**



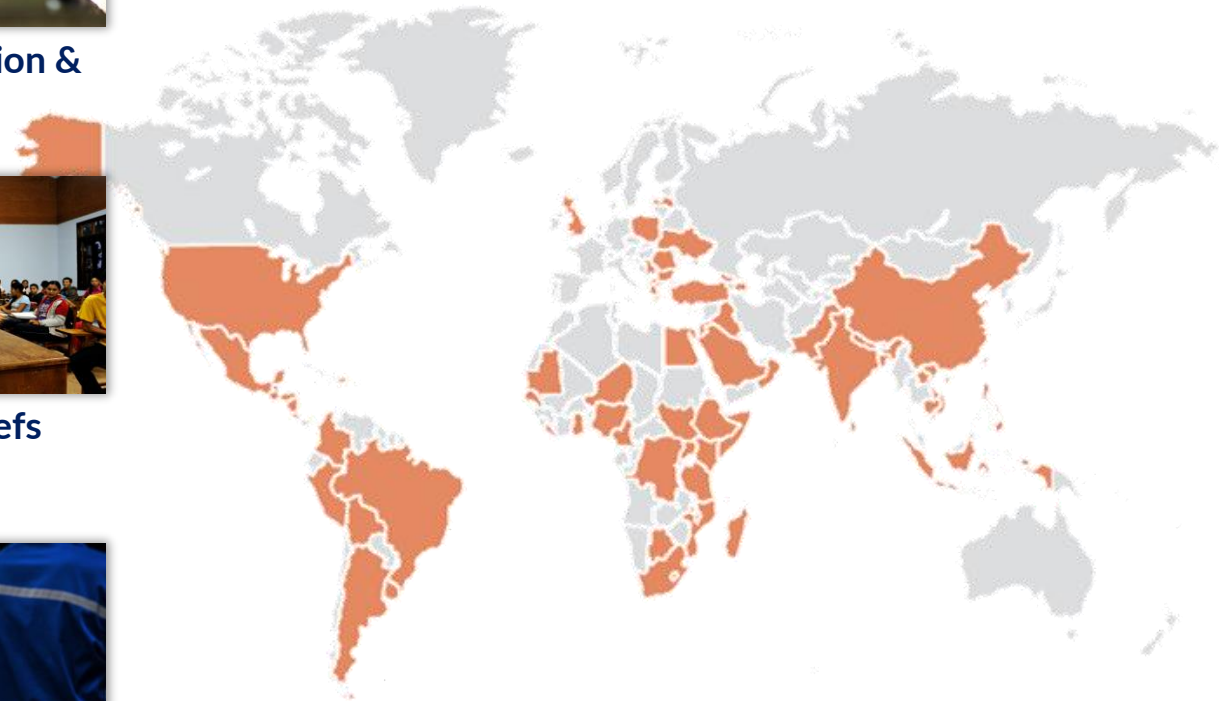
**Mindstats &  
Measurement**



**Social Cohesion**



**Jobs**



# Institutionalizing behavioral science in public policy

**Technical advice and support to 23 government** agencies and behavioral units worldwide. Strong emphasis on capacity building and policy application of BeSci.

## Africa

**South Africa:** Western Cape Gov't

**Tanzania:** Revenue Administration & Ministry of Finance

**Kenya:** Revenue Administration

**Mauritius:** Revenue Administration

## Middle East & Northern Africa

**Egypt:** Finance Min - Policy Lab\*

**Jordan:** Health Min

**Kuwait:** Planning\* Min

**Morocco:** Finance\*, Interior, Health Mins

**Saudi Arabia:** Health\* Min, Royal Court\*

## Asia

**Indonesia:** Finance Min

**Malaysia:** Finance Min & Revenue Board

**Pakistan:** Federal Board of Revenue;  
Provincial Revenue Authorities

## Latin America

**Argentina:** Consejo Económico y Social\*

**Colombia:** National Planning Dept.

**Peru:** Education Min - MineduLab\*

## Eastern Europe

**Kosovo:** Tax Administration

**Georgia:** Revenue Service

**Turkey:** Economy & Trade Min\*, Izmir Municipality

\* Behavioral Science Units

## The Behavioral Professional

IMPROVING DECISION-MAKING AND  
PERFORMANCE IN THE PUBLIC SECTOR

JOANA S. LOURENÇO, RENOS VAKIS, AND LAURA ZORATTO



**eMBed**  
Mind, Behavior, and  
Development Unit

# Combating COVID-19 Misinformation with *Find the Fake*



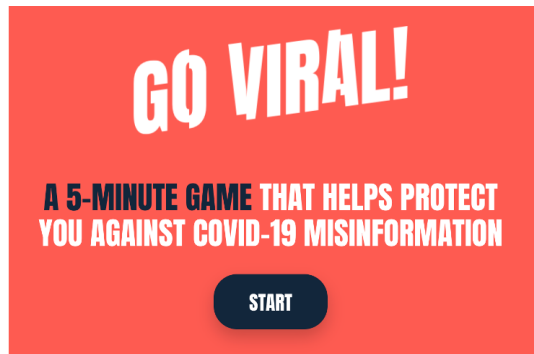


# Intervention toolkit to address mis/disinformation

## Pre-bunk Teach common misinformation techniques

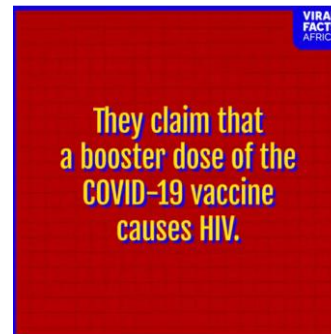
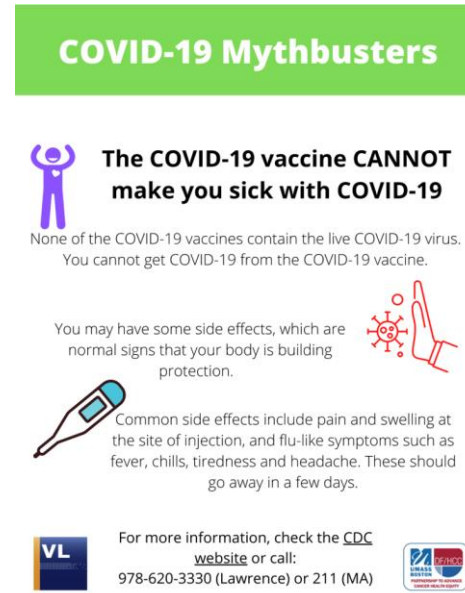


Pre-bunking with **Infographic**

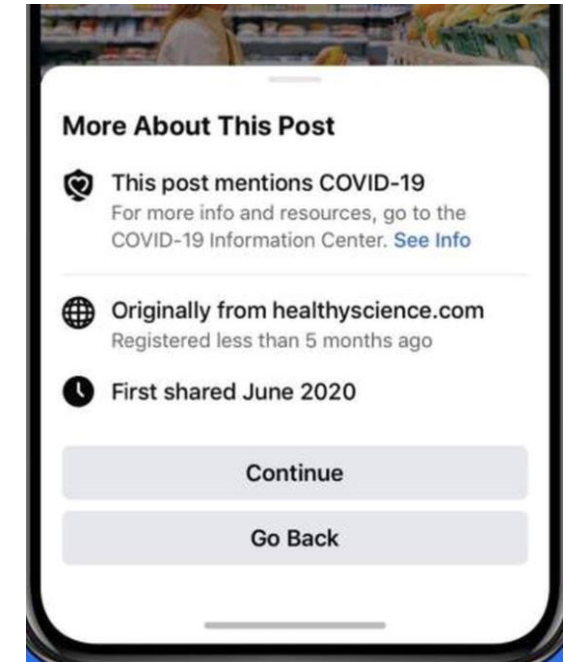


Pre-bunking with **games**

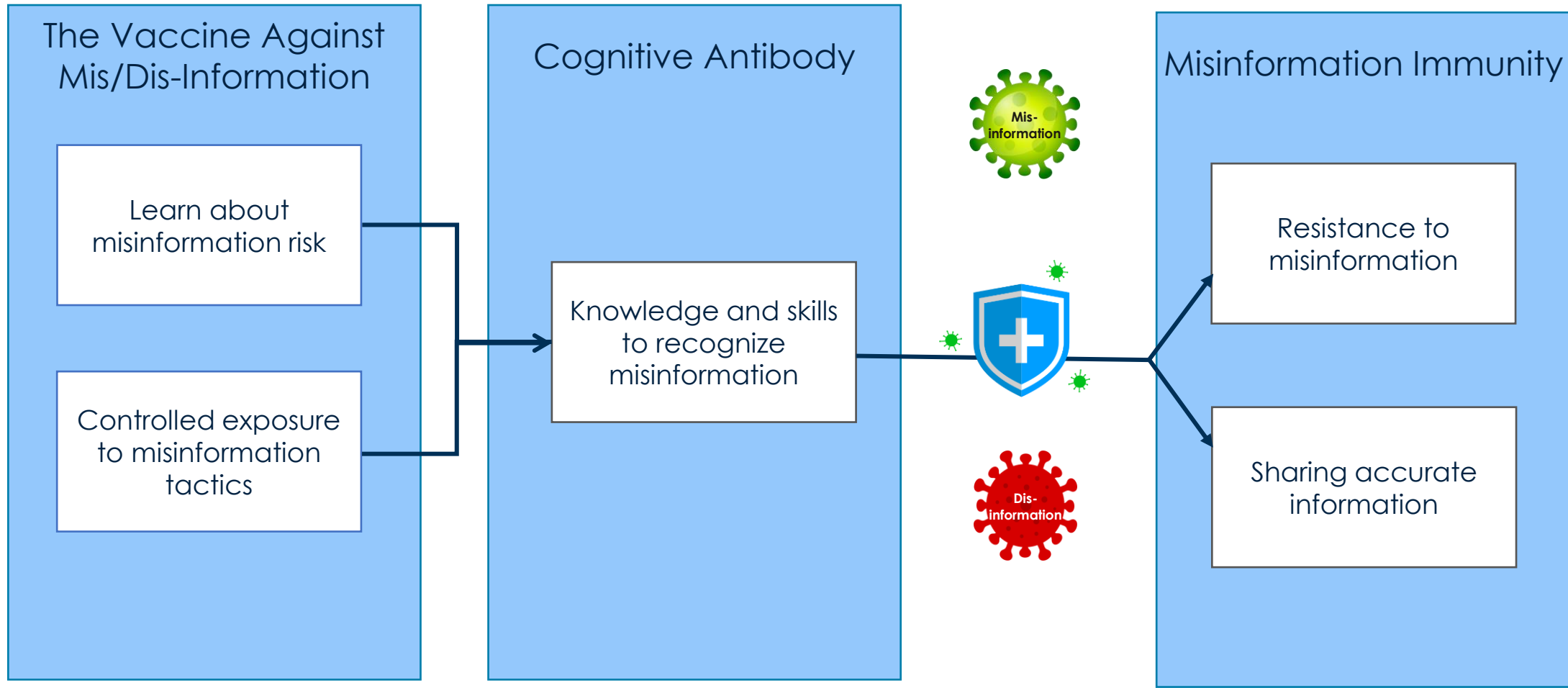
## De-bunk Use fact-checkers to directly address misinformation



## Reminders Ask people to check misinformation before sharing



# How “vaccinating” against mis/dis-information works



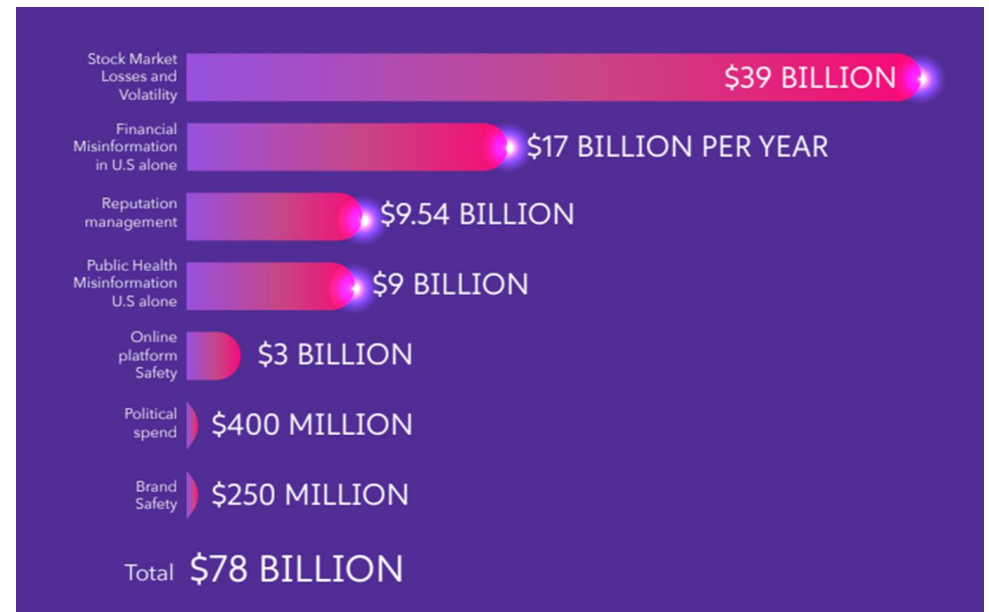
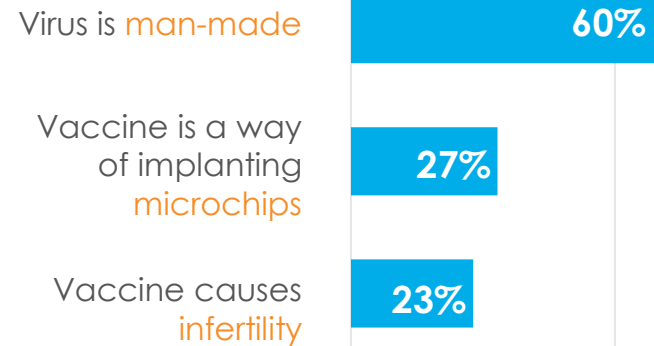
# Background: Spread of Misinformation in Jordan

Misinformation can cost about

# US\$ 78 Billion

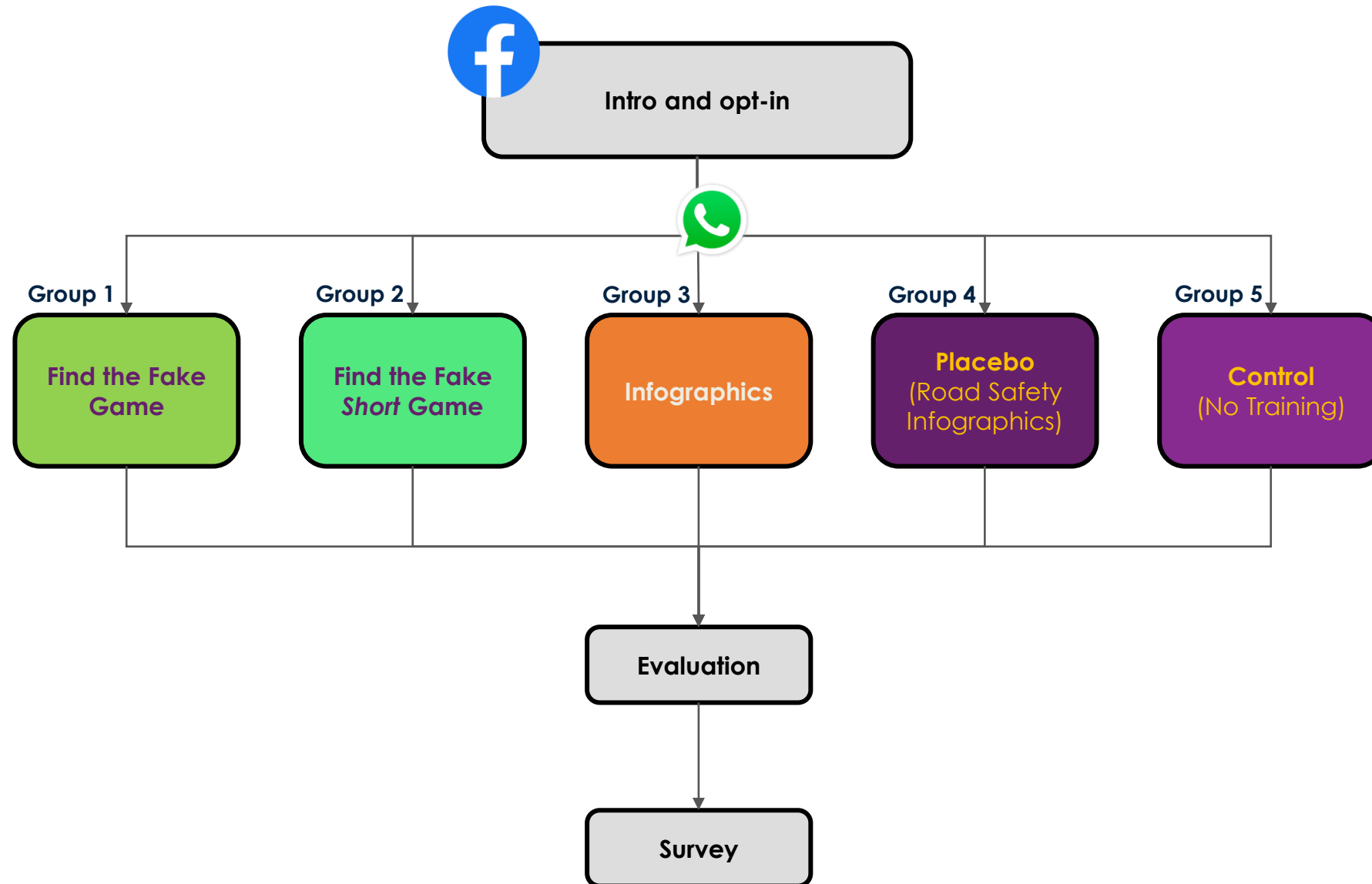
## Misinformation beliefs in Jordan

*Sallam et al. (2021)*



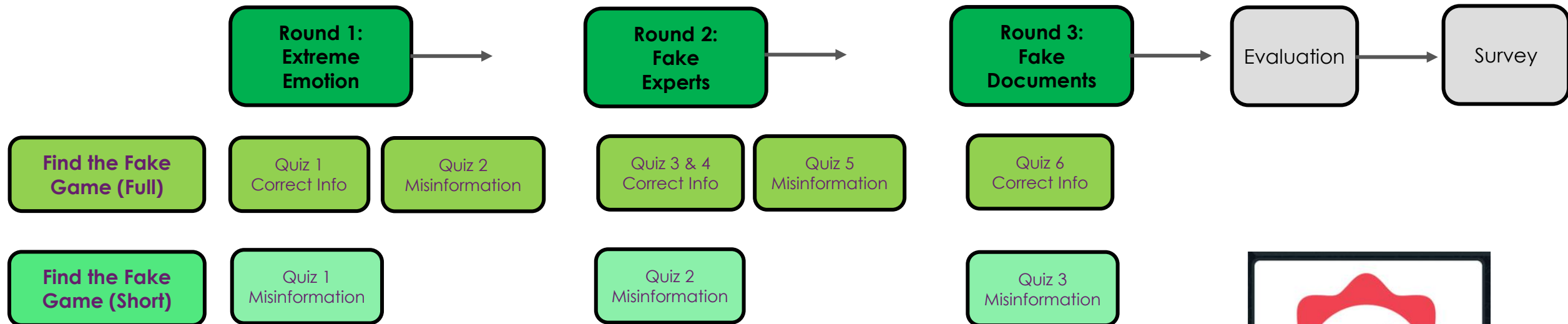
Cavazos, 2019

# Intervention Overview



# Game Intervention – Two Versions Tested

Groups 1 & 2: Find the Fake Game (Full vs. short version)



Read the messages from Amari below.

Amari: How can you vote for Ade?

Amari: He is a DISGRACE and a danger to our children!! Ade can barely keep his own business open, he could NEVER run a government!

**Do you think Amari is spreading misinformation?**

Reply with a number, emoji or **word in bold** from the menu to submit your answer:

- 1 ☒ Yes
- 2 ☒ No

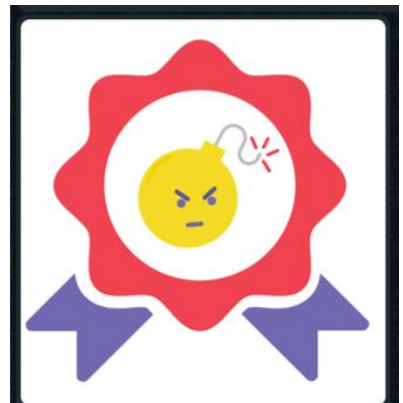
10:38 AM

**Correct, great job!**

Amari didn't provide any evidence for his statement about Ade's business

He also used **extreme emotional language** like calling Ade a disgrace, which is a common method of manipulating people and spreading disinformation

10:38 AM



Extreme emotions tend to grab people's attention and make them more likely to share a message

You also get the Extreme Emotion Badge for detecting this misinformation correctly!

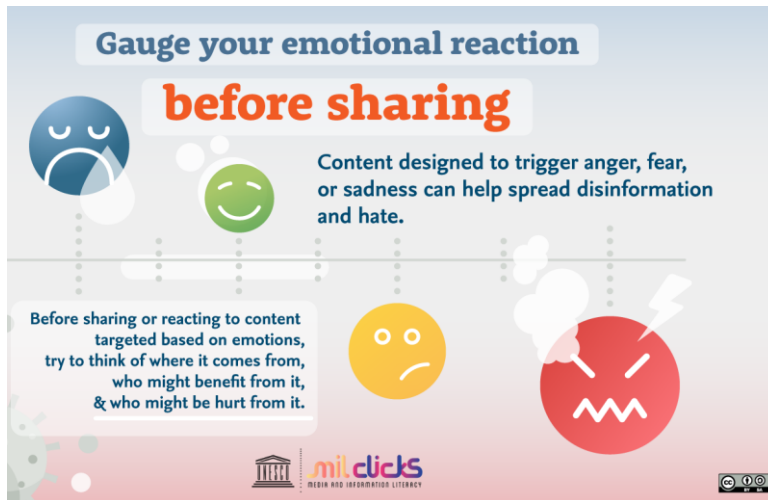


# Infographic Intervention

## Group 3: Infographics



We showed participants the following three **infographics**, mirroring the game content.

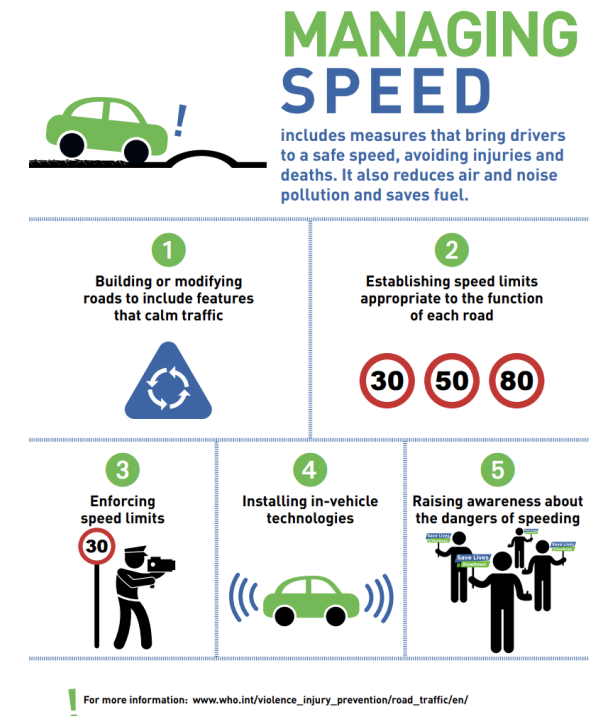
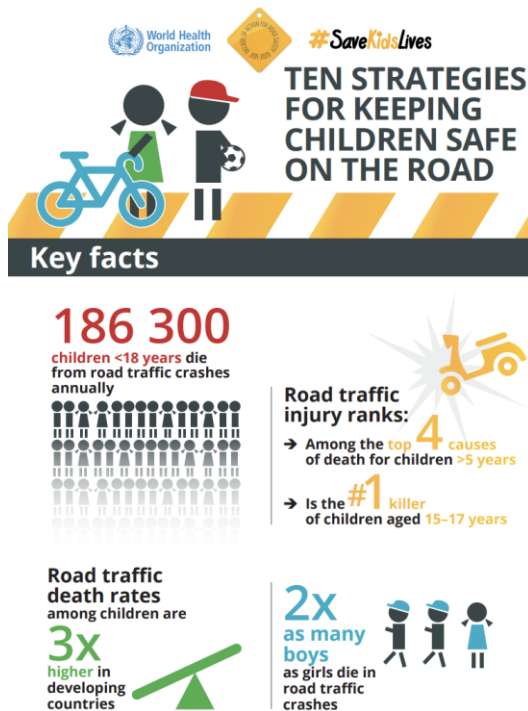


# Placebo Intervention

## Group 4: Placebo



We showed participants the following three *road safety* infographics.



# Implementation and Sample

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**Launched:** October 27 - November 23, 2022 with recruitment through FB ads

**Sample:**

6,317 contacts started

2,865 completed surveys

63% male

53% aged 18-29

30% with tertiary education



# Evaluation: Measuring accuracy and sharing behavior

To **evaluate our interventions**, we assessed **accuracy** in detecting misinformation tactics and **likelihood of sharing** misleading headlines.



## Accuracy of detecting misinformation

Read the headline below

**Security Guard at Vaccine Supplier: 'All COVID Vaccinated People at Risk of Heart Failure'**

Does this headline use any misinformation techniques?

Reply with a number or **words in bold** from the menu below:

- 1 **Definitely is** misinformation
- 2 **Probably is** misinformation
- 3 **Probably not** misinformation
- 4 **Definitely not** misinformation



## Sharing misinformation

Read the headline below.

**COVID-19 vaccines cause shocking, untreatable changes to human DNA**

How likely are you to share this headline with others?

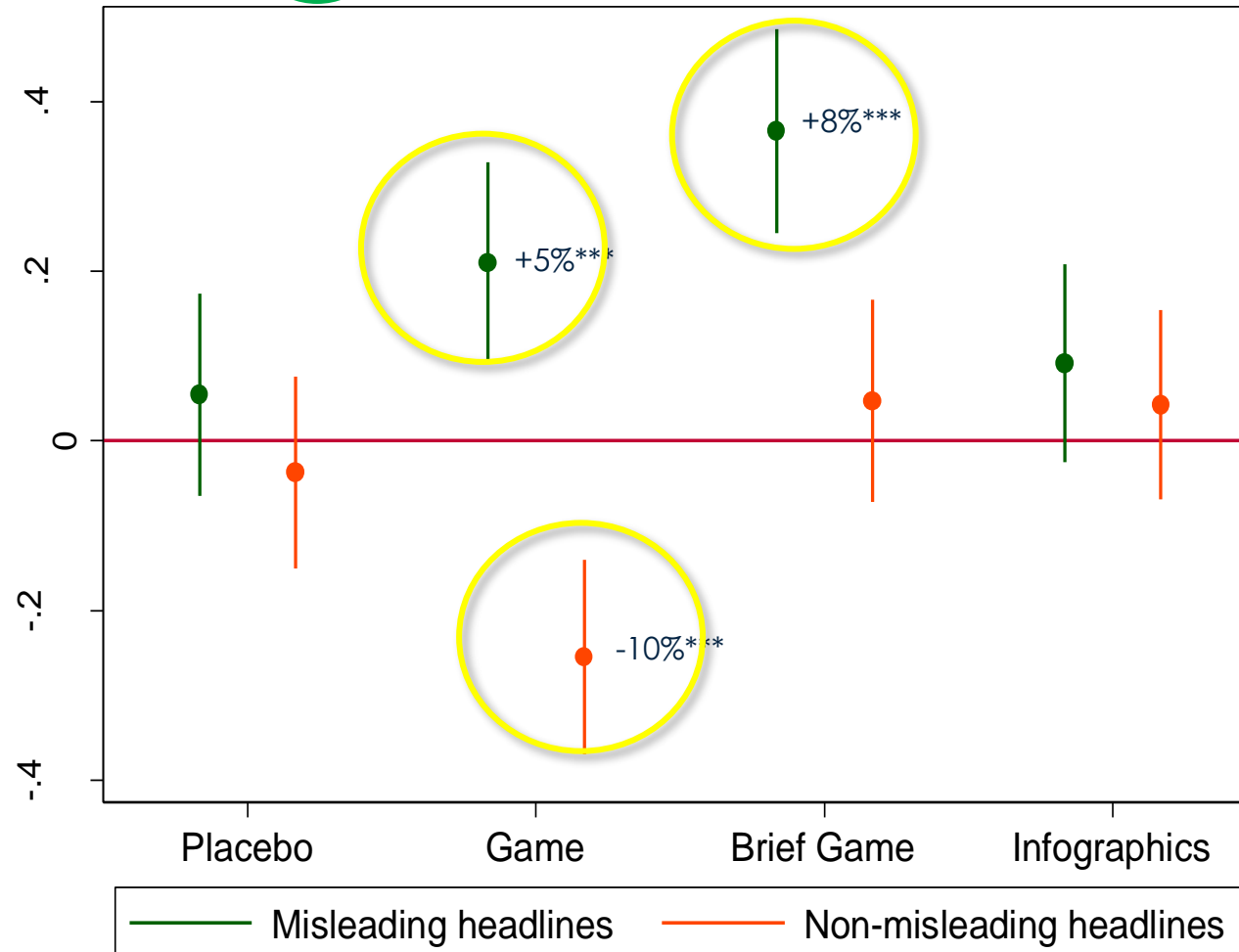
Reply with a number or **words in bold** from the menu below:

- 1 **Very unlikely** to share
- 2 **Unlikely** to share
- 3 **Likely** to share
- 4 **Very likely** to share

# Overall, those who completed the game performed better

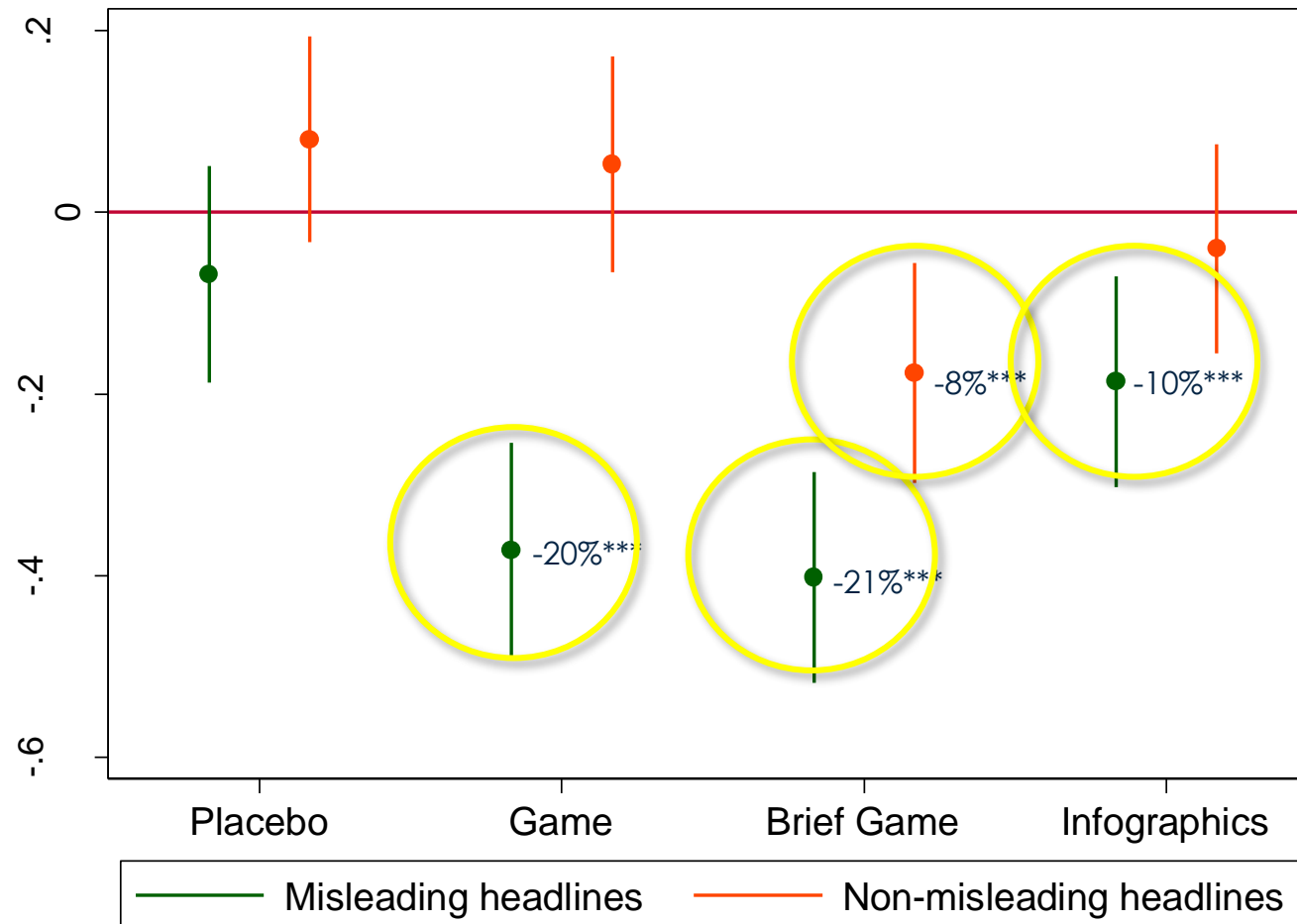
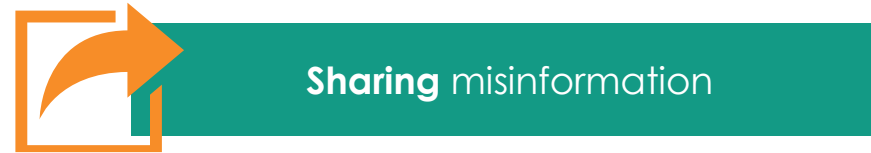


Accuracy of detecting misinformation



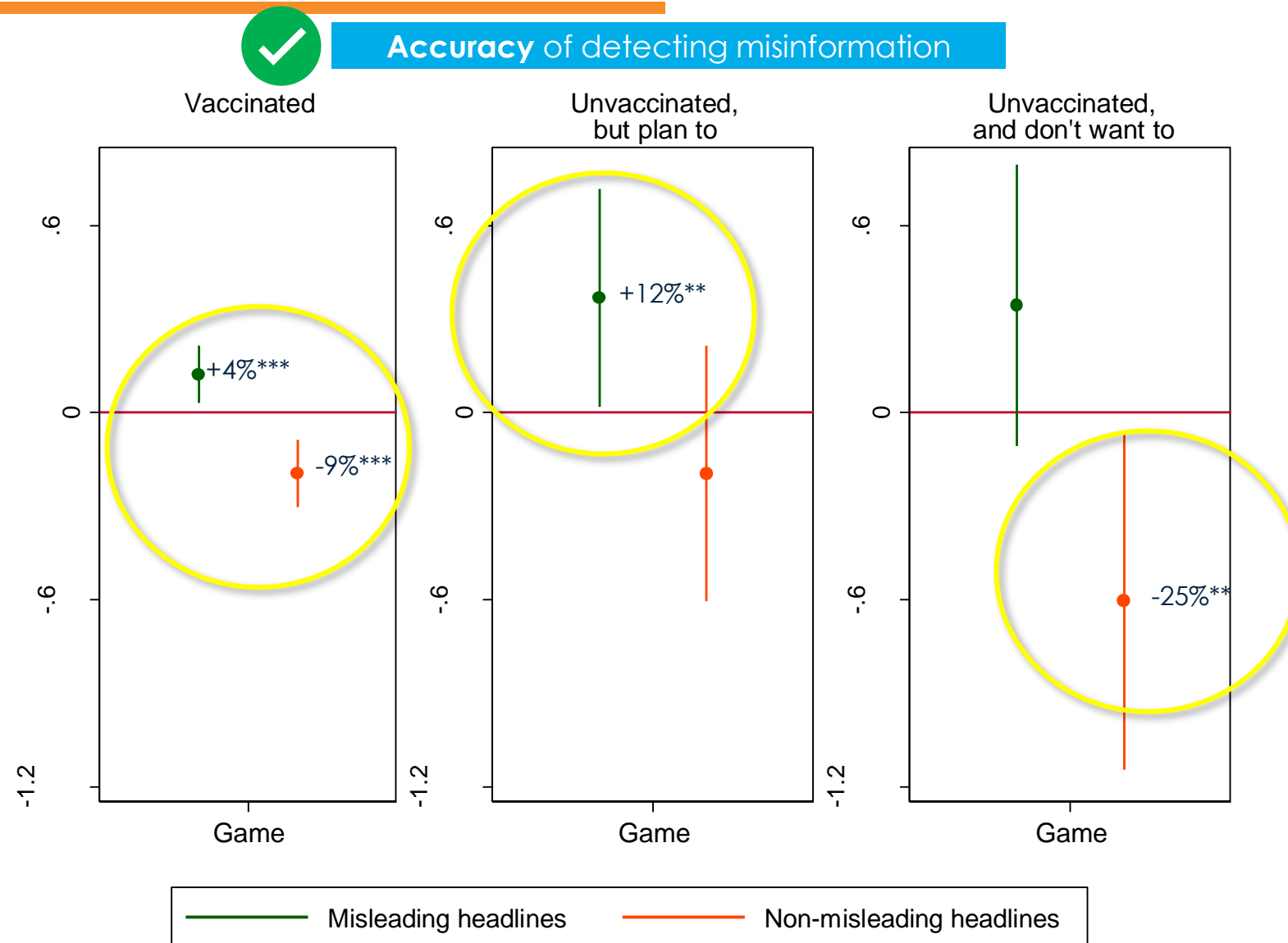


# Overall, those who completed the game performed better



\* Statistically significant,  $n = 2,851$

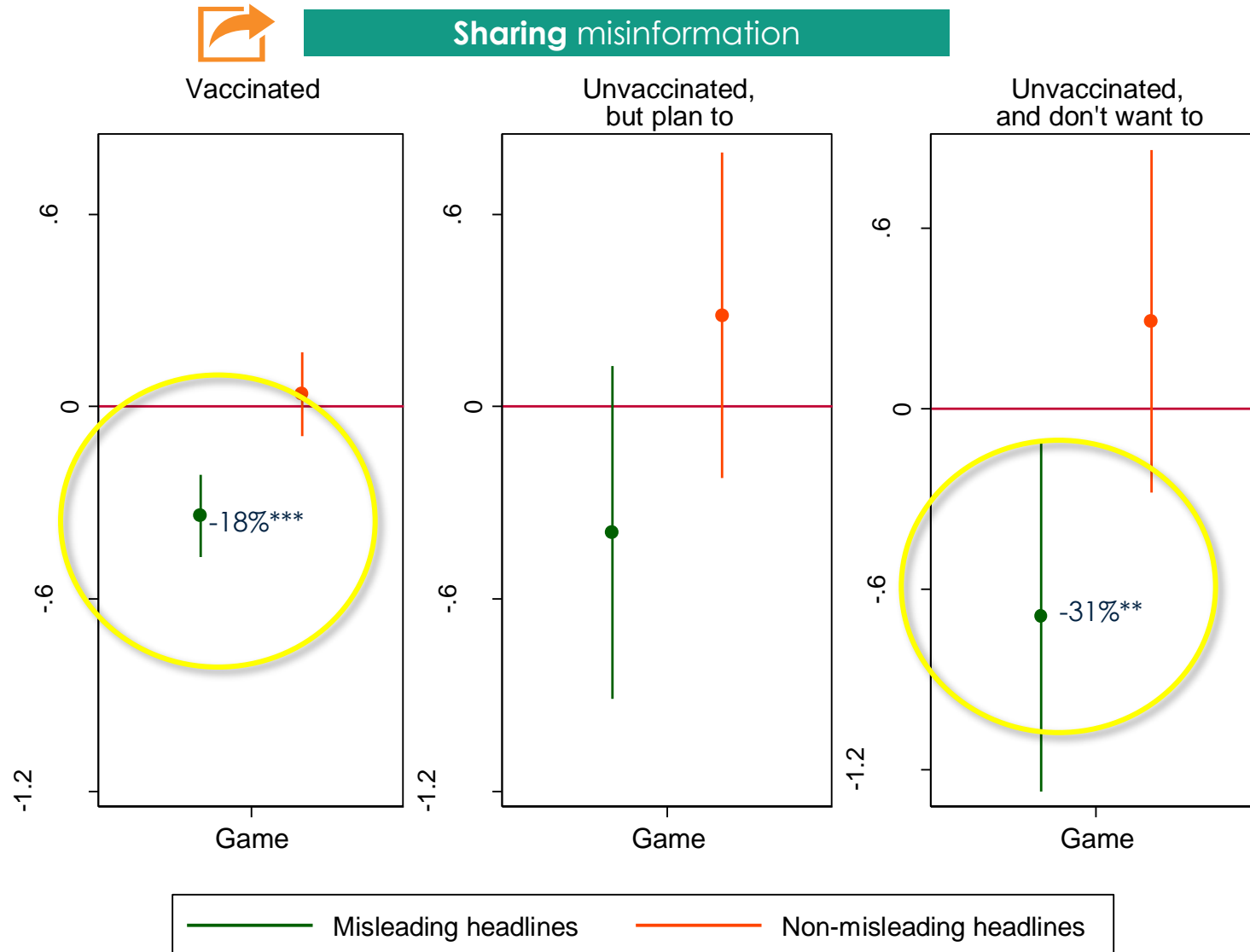
# The game treatment may also have greater impact on misinformation detection among unvaccinated respondents



Note: A small number of the unvaccinated participants ( $n = 267$ ) participated in the study.

\* Statistically significant,  $n = 2,687$

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# Findings Summary – Games are effective and engaging, weaker impacts from infographics

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- 1 The games significantly boosted **detection of misleading headlines** by **over 5%**
- 2 The games reduced **intention to share misleading content** by **over 20%**
- 3 However, the **brief game** **increases overall skepticism**
- 4 The **full game** has even **greater impact** on improving misinformation detection and reducing misinformation sharing among **the unvaccinated** than the vaccinated
- 5 Infographics did **not** impact accuracy and while significant, they had a weaker effect on sharing intentions

# Conclusions

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- 1 **Interactive inoculation games** effective tool to be integrated into anti-misinformation efforts, potentially more effective than infographics alone.
- 2 **Vulnerable populations** could be targeted with outreach. They could benefit most from boosting anti-misinformation skills.



# Extending Applications and Scaling Implementation – smoking behaviors



# Background

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- 23% of students 13-15 smoke tobacco in Jordan
- 6 in 10 youth smokers want to quit smoking
- Misconceptions about tobacco, and especially alternatives to cigarettes, may contribute to high levels of use

# Common smoking-related Misinformation online

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Tobacco can be **healthy**

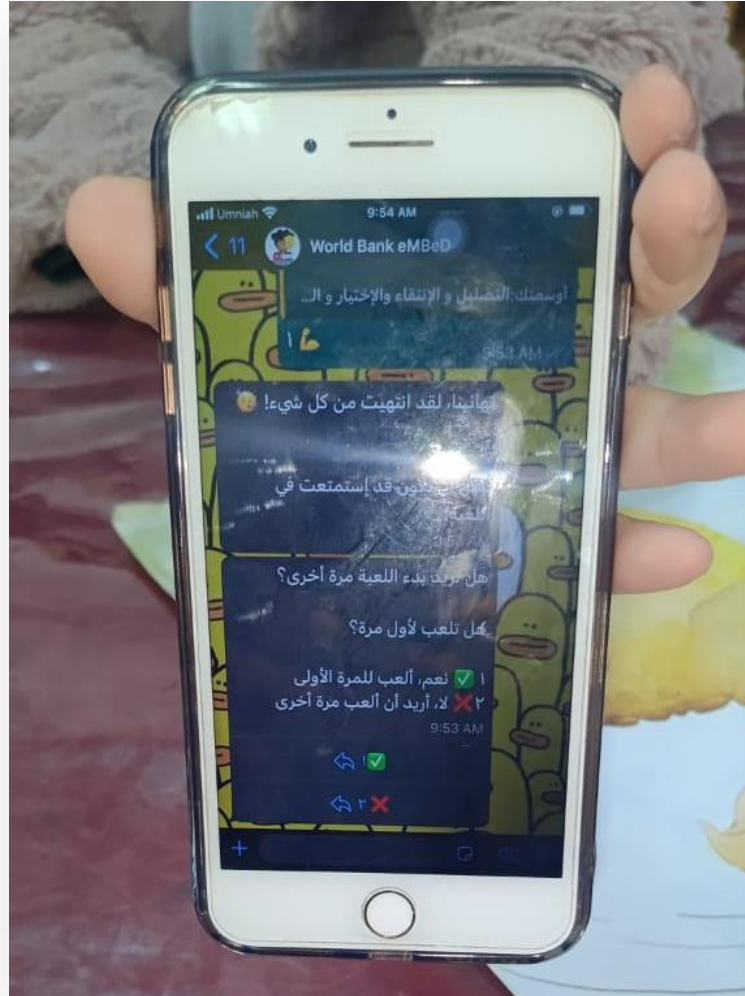
Using tobacco is **no riskier** than other common activities

Harms of tobacco use **can be managed** by various fixes

Some forms of tobacco are **not harmful** after all

Evidence supporting the harmfulness of a tobacco product is **faulty**

# Implementation ongoing – stay tuned!



# Stay Connected

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