



# The Effect of Altruism-based Risk Messaging on Public Adherence to Health Regulations during Future Pandemics – An Intervention-based Cross-Sectional Study

Christian Giller, MDM and Moran Bodas, MPH, PhD

Department of Emergency & Disaster Management, School of Public Health,  
Gray Faculty of Medical & Health Sciences, Tel-Aviv University

## Background:

Public adherence to health guidelines is essential for disease mitigation, especially when medical countermeasures are unavailable. Previous research suggests that compliance with protective measures like mask-wearing is influenced by how risk communication is framed.

Traditional messaging often focuses on **self-protection**, emphasizing personal risk and the need to protect oneself. However, recent studies suggest that **altruism-based messaging**—which frames protective behaviors as acts of social solidarity—may be more effective in promoting public adherence to health regulations.

This study aimed to investigate the effect of risk communication framing (self-protection versus altruism-based) on behavioral intentions to comply with health guidelines. We hypothesized that altruism-based messaging would lead to a greater increase in behavioral intention to follow health guidelines compared to self-protection messaging or a control condition.

## Methods:

This **longitudinal**, intervention-based study recruited **523 Israeli adults**, randomly assigned to one of three groups:

(1) Altruism-based messaging (emphasizing community protection), (2) Self-protection messaging (highlighting personal risk), and (3) Control group (no messaging).

Participants were presented with a hypothetical future pandemic scenario and completed behavioral intention and attitude questionnaires at **three time points**: Baseline, immediately after intervention, and two-week follow-up.

The data collection occurred over a six-week period in **Sep-Oct 2024**.

Statistical analyses included repeated-measures ANOVA to assess changes in behavioral intention and correlation tests to examine associations with attitudes and demographics.

This study was approved by the Ethical Committee of Tel Aviv University (approval No. 0006930-1).

## Results:

### Effects of risk messaging

The results demonstrated a **significant increase in behavioral intention** to comply with health guidelines immediately following exposure to risk messaging. This effect was **strongest in the altruism-based messaging group**, where participants showed a notable rise in their intention to wear masks and maintain social distancing ( $p < 0.01$ ).

Repeated measures ANOVA indicated a significant time effect ( $F = 9.76$ ,  $p = 0.020$ ) and an interaction effect for messaging style ( $F = 3.25$ ,  $p = 0.039$ ).

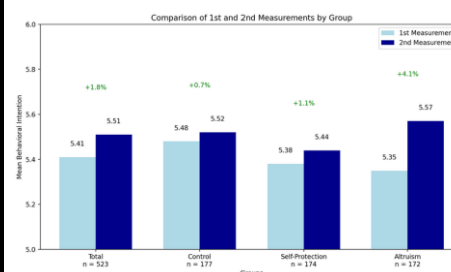
In contrast, while the self-protection group also experienced a slight increase in behavioral intention, the effect was less pronounced. The control group exhibited only minimal change.

### Long-term effects

Despite the initial increase in behavioral intention, follow-up assessments conducted two weeks later revealed a decline **across all groups**, with participants returning to their pre-intervention levels.

### Association between attitudes and compliance with health regulations

Correlation analyses showed a strong positive association between behavioral intention and positive attitudes toward health guidelines ( $r = .739$ ,  $p < .001$ ). Furthermore, participants who perceived mask-wearing as an **altruistic act** were significantly more likely to report higher behavioral intention.



Spearman correlation matrix

	Perception of mask wearing as an altruistic act
Behavioral intention 1 <sup>st</sup>	.315***
Behavioral intention 2 <sup>nd</sup>	.355***
Behavioral intention 3 <sup>rd</sup>	.297**
Adherence to health guidelines	.270**

\*\* $p < .01$  \*\*\* $p < .001$

## Discussion:

The findings provide compelling evidence that altruism-based messaging is a more effective strategy for increasing short-term compliance with health regulations compared to self-protection messaging. This aligns with previous research suggesting that public health campaigns emphasizing social norms and collective responsibility are more successful in driving pro-social health behaviors.

However, the observed decline in behavioral intention over time raises important questions about message durability. Psychological theories such as Terror Management Theory (TMT) suggest that repeated exposure to risk messaging may trigger mortality-related anxiety, leading individuals to disengage from protective behaviors over time. Public health officials may need to explore sustained reinforcement strategies, such as periodic message exposure or combining altruistic appeals with empowerment-based communication, to maintain long-term public adherence with health regulations.

## Conclusions:

**Altruism-based risk messaging effectively increases short-term compliance with health regulations**, reinforcing the role of social norms in pandemic response. However, maintaining adherence over time remains a challenge, requiring sustained engagement and periodic reinforcement.

To enhance future pandemic preparedness, public health campaigns should **leverage social norms and community-oriented messaging**, while also considering cultural factors and psychological barriers to sustained behavior change.

*This study was supported by TAU's Center for Combating Pandemic.*

\*\*\*



Contact: Moran Bodas  
[moranbod@tauex.tau.ac.il](mailto:moranbod@tauex.tau.ac.il)  
[moranbod.sites.tau.ac.il](http://moranbod.sites.tau.ac.il)