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Selfless or Selfish? The impact of message framing and egoistic motivation on narcissists’ compliance with preventive health behaviors during COVID-19

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ABSTRACT

COVID-19 is one of the greatest international health crises in recent years. Due to the highly contagious nature of the virus, the World Health Organization has recommended that people comply with a set of preventive measures to reduce the infection rate (e.g., social distancing, wearing a face mask, thorough personal hygiene). However, people typically differ in the extent to which they are willing to comply with such recommendations, as they imply certain personal restrictions. The present study aimed to investigate whether narcissism levels and message framing strategies affect individuals’ willingness to accept personal restrictions and, consequently, comply with a set of preventive health behaviors. Results reveal that people high in grandiose narcissism are less likely to accept personal restrictions and comply with preventive health behaviors, with negative (vs. positive) message framing constituting a more effective strategy for convincing such individuals to comply with said restrictions and behaviors. This effect can be explained through a more pronounced willingness of participants high in grandiose narcissism to accept personal restrictions to protect themselves (egoistic motivation) but not through a willingness to protect vulnerable people (altruistic motivation). Our findings suggest that individuals who remain uncooperative during pandemics could be more effectively addressed with adapted message framing strategies and incentives tailor-made for their distinct personalities.

Introduction

The coronavirus disease (COVID-19) gave rise to one of the greatest international health crises in recent years (Van Lange & Gelfand, 2020). Nearly 260 million people globally have been infected as of November 2021 (Worldometers, 2021). Due to its highly contagious nature, the World Health Organization (WHO) has recommended that people comply with certain preventive measures to reduce the infection rate. Top among WHO’s (2021) recommendations are social distancing (maintain at least 1-metre distance between yourself and others), wearing a mask (make wearing a mask a normal part of being around other people), and thorough hygiene (regularly and thoroughly clean your hands with an alcohol-based hand rub or wash them with soap and water); for a discussion of different hygiene norms across nations, see Eriksson et al. (2021).

Given that such recommendations involve a set of personal restrictions that impact people’s everyday lives, it is plausible that some people will be reluctant to follow the guidelines. Thus, it is critical to determine how compliance with health recommendations differs between individuals. Examining various personality traits is a promising avenue in finding out (1) who are the individuals failing to comply with health recommendations, and (2) what can be done to motivate them to cooperate under such circumstances.

Previous research has identified several individual differences associated with willingness to comply with health recommendations during the COVID-19 pandemic. For instance, identification with all humanity, which represents the degree of compassion and connectedness with others, was positively related to compliance with health guidelines (Barragan et al., 2021). In addition, a recent study including nearly 50,000 individuals from 67 countries found positive associations between national identification and participation in infection prevention behaviors such as improving physical hygiene (Van Bavel et al., in press). Aschwanden et al. (2021) found that neuroticism was positively related to concerns about the pandemic (e.g., about contracting the coronavirus or job loss in the community) and its predicted duration but negatively related to precautions taken to avoid infection (e.g., hand washing, using hand sanitizer, and maintaining social distance).

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Narcissism represents one personality trait that may be related to compliance with preventive measures. Individuals high in narcissism are known to engage in a range of risky and unethical behaviors across decision domains, often showing little to no concern for others (Hill, 2017). Therefore, due to their tendency to misconduct, they have been discussed as a salient health risk during the COVID-19 pandemic, assumed to hamper the effectiveness of certain preventive measures (e.g., Nowak et al., 2020; Venema & Patftheicher, 2021). In the current study, we investigate whether individuals high in grandiose narcissism are indeed less willing to comply with a set of health recommendations during the pandemic (i.e., social distancing, wearing a face mask, thorough personal hygiene) and whether this presumed pattern can be reversed through message framing strategies (positive vs. negative framing) and incentives (protecting themselves vs. vulnerable others). Consistent with recent conceptualizations, we define grandiose narcissism as a trait characterized by “exceptionally high levels of self-importance, entitlement, and social power” (Rentzsch & Gebauer, 2019, p. 1366), with this specific facet of narcissism being the most researched in personality and social psychology (Cai & Luo, 2018; Guedes, 2017; Rentzsch & Gebauer, 2019). In the remainder of this article, we use the term narcissism when referring to grandiose narcissism, unless indicated otherwise.

The present research contributes to the growing body of knowledge aimed at understanding how the rate of infections during pandemics can be controlled and effectively reduced (Ackerman et al., 2020). Specifically, our findings indicate that the level of public cooperation, which is critical to meet such protective purposes, can be meaningfully increased by developing customized interventions and communication campaigns.

Theoretical Background

Facets of Narcissism

Narcissism is a trait that manifests in the form of superiority and selfish acts in the social sphere. Although narcissism was traditionally thought to reflect high self-esteem, this positive relationship is weak (Hyatt et al., 2018). In fact, research indicates that self-esteem and narcissism are two distinct constructs, given that the link between the two does not become stronger as self-esteem increases (Crowe et al., 2018). Furthermore, recent conceptualizations view narcissism as a construct comprising facets of agentic extraversion, antagonism, and narcissistic neuroticism (Crowe et al., 2019; Miller et al., 2021). As a polyhedric construct, narcissism can be divided into vulnerable or grandiose at the individual level. Grandiose narcissism can be further divided into communal or agentic narcissism, with its agentic offshoot taking rivalrous or admiration forms (Sedikides, 2021). Of central importance to the current investigation, self-motives of grandiosity can be realized both in an agentic domain (e.g., being the best-looking employee) and in a communal domain (e.g., being the most helpful colleague, Gebauer et al., 2012), a topic we address in the following sections.

Individuals High in Narcissism are Not Prosocial...

High levels of narcissism are often related to agentic traits (e.g., competence, assertiveness, decisiveness) that help attain one’s goals, but not to communal traits, such as agreeableness, morality, and trustworthiness (Campbell et al. 2002). Individuals high in narcissism tend to have little interest in affiliation, communal values, and prosocial behaviors (Gsek et al., 2008). Prosocial behaviors are defined as a range of positive actions that benefit others rather than the person performing such behaviors (Folwarczny & Otterbring, 2021; Gidlöf et al., 2021). Prosocial behaviors include sharing, giving, helping, comforting others, and cooperating for a common goal (Batson & Powell, 2003; Otterbring & Folwarczny, 2022). Individuals high in narcissism generally display a low tendency to engage in such behaviors (Konrath & Tian, 2018). Instead, they are more inclined than individuals low in narcissism to engage in unethical behaviors such as deception and lying (Dumas et al., 2017), domestic violence (Craig, 2003), sexual coercion and aggression (Blinkhorn et al., 2015; Moulso et al., 2012), general delinquent offenses (Hepper et al., 2014), and a range of other counterproductive behaviors in the workplace, including but not restricted to theft, sabotage, wasting time or materials, and unethical leadership (Hornett & Frederick, 2005; Lowe-Calverley et al., 2017; Penney & Spector, 2002). Narcissism has also been linked to perceptions of invulnerability, optimism, and impulsivity (e.g., Barry et al., 2009; Vazire & Funder, 2006), with these characteristics, in turn, associated with a range of risky behaviors (e.g., fast driving, unprotected sex, heavy drinking; Aalma et al., 2006). As such, individuals high in narcissism appear to engage in actions that provide them with immediate gratification, despite that these actions frequently have costly long-term consequences.

As compliance with health recommendations requires short-term individual sacrifices (e.g., self-isolation) to secure long-term positive personal and collective outcomes (e.g., stopping the spread of infectious diseases), we propose that individuals scoring high (vs. low) in narcissism are generally (1) less willing to accept such restrictions, and (2) less likely to comply with public health recommendations.

... Unless They Feel Threatened Themselves

Whereas prosocial behavior is often regarded as an altruistic act, there can also be egocentric motivations behind seemingly prosocial behaviors, such as an expectancy to receive something in return after having done someone a favor (Batson & Powell 2003; Gildini & Goldstein, 2004). Given that individuals high in narcissism express less empathy towards others and feel their own lives are more important than those of other people, they should be more likely to engage in prosocial behaviors if driven by egocentric motivation. As a result, they may be motivated solely by the risks associated with the COVID-19 pandemic if they perceive it as affecting their own health rather than that of other people. Indeed, previous research has shown that individuals high in narcissism can act prosocially, but only to the extent that it serves their self-interests. For example, Brunell et al. (2014) found that people high in narcissism were motivated to engage in volunteerism through self-serving goals related to career advancement, social recognition, and self-protection.

Previous research has documented individuals high in narcissism to experience heightened physiological stress (e.g., elevated levels of cortisol) and stronger negative emotions in the face of adversity (Cheng et al., 2013), with such results also applying to the current COVID-19 context (Hadin et al., 2021). Elevated levels of stress and negative emotions during times of prolonged uncertainty (e.g., wars, financial crises, pandemics) are linked to an increased reliance on negative information to make decisions (Van Bavel et al., 2020) and to a preference for more normative, compliance-linked behaviors (Smith et al., 2007). Given that negative framing of information highlights the dire consequences one would experience from a failure to follow the recommended behavior (Eguren et al., 2021; Loebnitz et al., 2022), we propose that negative framing, as opposed to positive framing, can more effectively persuade individuals high in narcissism to comply with public health recommendations. In other words, we propose that when information about COVID-19 is framed negatively (vs. positively), individuals high in narcissism are more likely to comply with health recommendations, with this linkage being driven by an increased willingness to accept personal restrictions for their own protection, but not for the protection of other vulnerable people.

Figure 1 depicts our hypothesized moderated mediation model, with the straight lines representing our predicted relationships (based on an egocentric motivation account) and the dotted lines representing an alternative account (based on altruistic motivation).
Method

The study was part of a larger research project investigating effective strategies for public health communication during the COVID-19 pandemic (cf. Otterbring et al., 2021b,c) and abides by international standards for responsible conduct of research involving human subjects. We performed an a priori stochastic power simulation in R (Bolker, 2008), revealing that approximately 200 participants were required to detect a medium-sized main effect equivalent to $d = 0.50$ with a power of .90 (1 - $\beta$), given a conventional alpha level of .05. Moderation analyses typically require a larger sample size, but given our conservative approach, assuming a relatively low probability of Type II errors, quadrupling the sample size required to detect a main effect should be sufficient (cf. Perugini et al., 2018; Simonsohn, 2015). Thus, we recruited 800 participants from the online panel Prolific.

Participants were prescreened for English language fluency and were mostly from Europe (over 85% of the sample). For consistency, we originally intended to use the same exclusion criteria as those described in detail in Otterbring et al. (2021b). Based on these criteria, we excluded participants who (1) failed an attention check, (2) completed the survey in 4 minutes or less, and (3) had missing values, resulting in a sample of 743 participants. However, because an anonymous reviewer requested us to control for participants’ gender in all analyses given documented gender differences in COVID-19 attitudes and behavior (Galasso et al., 2020), we excluded five additional participants, as their indicated gender (“other”) was too infrequently represented in our data for meaningful analyses. Thus, our final sample consisted of 738 participants (51.59% female; $M_{\text{age}} = 30.10$ years, $SD = 10.37$). The nature and significance of our results remain unchanged by omitting gender as a covariate, thus indicating robustness of our findings. Data are publicly available through the Open Science Framework (OSF) at https://osf.io/jtke4/.

After participants provided their informed consent, they were randomly assigned to either a positive framing condition, which highlighted possible gains from a program aimed at combating a disease (people that can be saved), or a negative framing condition, which highlighted possible losses (people that can die), with the information provided being objectively identical across conditions (cf. Tversky & Kahneman, 1981). The disease type was also varied across conditions to be either hypothetical (the Asian Disease) or real (COVID-19). As such, we used both the classic scenario by Tversky and Kahneman (1981) about an outbreak of a fictitious disease (i.e., the Asian Disease) and a modified scenario, which exposed participants to a current outbreak of a real disease (i.e., COVID-19). We included both disease scenarios and hence used disease type (real, hypothetical) as a covariate in the analyses (for more details about the precise manipulation, see the Supplemental Material).

Following the exposure to one of the framing scenarios, participants were informed that the respective program required public cooperation to work as intended. Participants then indicated how willing they would be to comply with a set of preventive health behaviors in terms of their willingness to 1) isolate from others, 2) wear a face mask, and 3) frequently wash their hands (1 = not at all willing, 5 = extremely willing; Taylor et al., 2009). These items were combined to form a composite index of compliance with preventive health behaviors ($\alpha = .66$). Two additional items measured participants’ willingness to accept personal restrictions to fight the described disease, varying the likely beneficiary of the restrictions: (1) themselves, and (2) vulnerable people (1 = definitely not accept, 7 = definitely accept; Zettler et al., 2015). These items measured two disparate motivations for performing a behavior (egocentric vs. altruistic) and, as per our theorizing, were treated separately in the analyses. Such single-item measures are valid if they, as in the current case, represent clear and unambiguous constructs (Bergkvist & Rossiter, 2007; Gardner et al., 1998; Otterbring et al., 2021a). Trait narcissism was measured using 11 selected items from the NPI-16 instrument (Ames et al., 2006; for a motivation of the specific items used, see Otterbring et al., 2021c). Participants were shown pairs of statements and were instructed to select the one that was most representative of who they are as individuals. One statement in each pair reflects high degrees of narcissism (coded as 1), whereas the other reflects low degrees of narcissism (coded as 0). The scores were summarized per participant to achieve a total scale score, with higher values reflecting more pronounced narcissism levels. The reliability of these items ($\alpha = .63$) is comparable to the existing reliability estimates for the entire NPI-16 instrument (cf. Ames et al., 2006).

Results

To test the moderating role of narcissism into the effect of message framing (positive vs. negative) on participants’ willingness to accept personal restrictions to protect (1) themselves, and (2) vulnerable people, as well as (3) their willingness to comply with preventive health behaviors, we first conducted three simple moderation analyses on each of these variables. Next, we proceeded with two moderated mediation analyses to examine our prediction that the impact of message framing on participants’ willingness to comply with preventive health behaviors will be moderated by their narcissism levels and mediated by their willingness to accept personal restrictions to protect themselves (due to egocentric motivation). In contrast, this interplay should not emerge for the willingness to accept personal restrictions to protect vulnerable people (and hence not apply due to altruistic motivation).

For the first simple moderation analysis (Model 1; Hayes, 2017), framing (positive = 0; negative = 1) served as the predictor, narcissism (continuous) served as the moderator, and participants’ willingness to accept personal restrictions to protect themselves (continuous) acted as the outcome variable. Disease type (0 = Asian Disease; 1 = COVID-19) and participant gender (1 = Male; 2 = Female) served as covariates. This
Fig. 2. Framing effects on participants’ willingness to (A) accept personal restrictions to reduce risk of infection for themselves, (B) accept personal restrictions to reduce risk of infection for vulnerable others, and (C) comply with preventive health behaviors, depending on narcissism.

analysis explained approximately 5 percent of the variance in our outcome variable ($R^2 = .054$). Although framing had no significant impact on our outcome variable ($b = .03$, $t = .43$, $p = .664$), narcissism had ($b = -.05$, $t = -2.85$, $p = .005$), with participants high in narcissism being less willing to accept personal restrictions to protect themselves. Disease type as a covariate was nonsignificant ($b = .08$, $t = 1.15$, $p = .252$), whereas gender was significant ($b = .34$, $t = 4.57$, $p < .001$), such that female participants reported greater willingness to accept personal restrictions to protect themselves than their male counterparts. However, the effect of framing was moderated by participants’ narcissism levels ($b = .10$, $t = 2.73$, $p = .006$). A floodlight analysis (Spiller et al., 2013) revealed that the moderator value at which the interaction becomes statistically significant, known as the Johnson-Neyman point, occurs at a mean-centered value of 1.45 on narcissism (corresponding to a sum score of 3.57 on our narcissism measure; $t = 1.96$, $p = .05$). This means that participants whose mean-centered value of narcissism was equal to or above 1.45 (approximately 23% of participants), were significantly more willing to accept personal restrictions to protect themselves when exposed to negative rather than positive framing; see Figure 2A.

Performing the same analysis on participants’ willingness to accept personal restrictions to protect vulnerable people as an alternative outcome variable ($R^2 = .049$) revealed a similar pattern of main effects. There was no significant impact of framing ($b = -.07$, $t = -1.31$, $p = .189$) and a significant impact of narcissism ($b = -.04$, $t = -2.95$, $p = .003$), with participants high in narcissism being less willing to accept personal restrictions to protect vulnerable people. Disease type as a covariate was again nonsignificant ($b = .03$, $t = -.52$, $p = .607$), whereas gender was significant ($b = .28$, $t = 4.81$, $p < .001$). Importantly, and contrary to the first analysis, the interaction between framing and narcissism was nonsignificant ($b = -.002$, $t = .06$, $p = .948$); see Figure 2B.

A third simple moderation analysis on the willingness to comply with preventive health behaviors ($R^2 = .061$) revealed no significant impact of framing on this variable ($b = -.01$, $t = -.13$, $p = .898$), but again a significant impact of narcissism ($b = -.02$, $t = -2.16$, $p = .031$), with participants high in narcissism being less willing to comply. Disease type as a covariate was nonsignificant ($b = .07$, $t = 1.68$, $p = .093$), whereas gender was again significant ($b = .22$, $t = 5.20$, $p < .001$). Crucially and consistent with the first analysis, the framing effect was moderated by participants’ narcissism levels ($b = .07$, $t = 3.12$, $p = .002$). A floodlight analysis revealed that the Johnson-Neyman points occur at mean-centered values of -1.47 and 1.74 on narcissism, respectively (corresponding to sum scores of .65 and 3.86 on our NPI-16 measure; $t = 1.96$, $p = .05$). This means that participants whose mean-centered value of narcissism was equal to or below -1.47 (almost 24% of participants) were significantly more willing to comply with preventive health behaviors when exposed to positive rather than negative framing. On the other hand, participants whose mean-centered value of narcissism was equal to or above 1.74 (roughly 23% of participants) were significantly more willing to comply with preventive health behaviors when exposed to negative rather than positive framing; see Figure 2C.

Finally, we conducted two moderated mediation analyses (Model 8, Hayes 2017) to test our proposed mediation pathway, whereby willingness to accept personal restrictions to protect themselves (but not vulnerable people) mediates the effect of negative (vs. positive) framing on participants’ willingness to comply with preventive health behaviors among participants high (but not low) in narcissism. Indeed, supporting our theorizing, the results from the first analysis ($R^2 = .299$) revealed that the index of moderated mediation was statistically significant ($b = .03$; 95% CI = [.008, .055]), with the indirect effect of the link between negative (vs. positive) framing on compliance with preventive health behaviors through participants’ acceptance of personal restrictions to protect themselves being significant and positive among participants high in narcissism ($b = .06$; 95% CI = [.0003, .137]), and directionally reversed among participants low in narcissism ($b = -.05$; 95% CI = [-.113, .000]). In contrast, the results from the second analysis ($R^2 = .154$) revealed that the index of moderated mediation was nonsignificant ($b = -.0004$; 95% CI = [-.016, .015]), meaning that willingness to accept personal restrictions to protect vulnerable people does not mediate the interaction effect between framing and narcissism on participants’ willingness to comply with preventive health behaviors.

Table 1 presents the grand means and standard deviations for our focal variables as well as the partial correlations between these variables after controlling for participants’ gender (male, female) and the disease type (real, hypothetical) used in the framing scenario.

**Discussion**

The present research investigated whether negative (vs. positive) message framing was more effective in prompting individuals high (vs. low) in narcissism to accept personal restrictions to protect themselves (vs. vulnerable people) and to comply with infection-preventing behaviors. Participants high (vs. low) in narcissism were found to be less likely to accept personal restrictions to reduce the risk of infection both for themselves and for vulnerable people, and at the same time, less inclined to comply with preventive health behaviors. In line with our theorizing, the message framing effect on participants’ willingness to accept personal restrictions and to comply with preventive health behaviors was moderated by narcissism. This means that negative (vs. positive) framing produced a higher willingness to accept restrictions aimed at protecting themselves, with downstream effects on compliance with preventive health behaviors among individuals who scored high, but not low, on grandiose narcissism. Importantly, these results emerged only through acceptance of restrictions meant to protect themselves (supporting an egoistic motivation account), but not through acceptance of restrictions meant to protect vulnerable people (leaving an altruistic motivation account unsupported). As such, negatively framed messages during the COVID-19 pandemic may be more effective than positively framed alternatives to make individuals high (vs. low) in narcissism comply with preventive health measures, but only if the message context for this important target group clearly communicates egoistic rather than altruistic benefits.

During pandemics, people high (vs. low) in narcissism constitute a particularly vulnerable group as they are generally more reluctant to comply with health guidelines (Nowak et al., 2020; Zajenkowski et al.,
Recent studies have found collective narcissism—a belief in the underappreciated supremacy of a person’s own group—to be negatively associated with social solidarity, manifested in a lower interest to help those in need amidst the COVID-19 pandemic (Federico et al., 2020). Given that individuals high in narcissism were less willing to take actions to prevent the spread of infectious diseases when health messages were framed positively (vs. negatively), it is vital to consider ways by which communication can be made more effective for them. Although the pandemic has brought mass media attention to preprints as sources of information, despite these submissions being unreviewed (Fleerackers et al., 2021), people at least deem certain information sources (e.g., governmental websites) as more credible than others (e.g., commercial websites) when reading about preventive health recommendations (Tang & Zou, 2021). Thus, governmental agencies bear some responsibility for public health messages that—as our findings suggest—should be framed negatively and incorporate egoistic incentives to work among individuals high in narcissism.

Recent research on psychological targeting, where communication is tailored for inferred psychological traits of individuals based on their digital behavioral footprints (e.g., Facebook likes, social media language), shows that this communication strategy may be incredibly potent in altering behaviors in the desired direction (Matz et al., 2017). Therefore, governmental agencies may consider adopting such communication efforts accounting for individuals’ narcissism levels inferred from their web behavior. These strategies may be more efficient than omnipresent, one-size-fits-all campaigns. Such tailored messages are already becoming popular in medicine for usage in mobile apps (Holmen et al., 2017).

Limitation and Future Research

One potential drawback of the present research is the narcissism measure used. NPI-16, despite having acceptable internal, discriminant, and predictive validity, captures only one facet of narcissism (Ames et al., 2006). Yet, narcissism is a multifaceted construct, with people high in grandiose narcissism showing different coping strategies and mental health outcomes than those high in vulnerable narcissism (Hill, 2017). Although a thorough discussion of the different facets of narcissism was beyond the scope of the current research, future studies should investigate whether the results reported herein apply to other narcissism dimensions.

Our research design was inspired by and is consistent with Tversky and Kahneman’s (1981) original framing studies, which compared responses resulting from positive or negative framing without a control condition. However, the inclusion of a (no-framing) control condition would have enabled us to speak about the directionality of our obtained results with more confidence, as emerging either due to increases in the negative framing condition or decreases in the positive framing condition (or a combination of these sources) for people scoring high (vs. low) in narcissism. Nevertheless, given the contextual sensitivity of our research, with several reports and articles indicating that people’s attitudes and behaviors have changed significantly on a number of COVID-19 measures since the onset of the pandemic (e.g., Han et al., 2021; Institute of Global Health Innovation, 2021), a study similar to ours conducted now, with a control condition added, may not necessarily replicate our focal effects, given that the current study was conducted at the earlier stages of this public health crisis (i.e., in April 2020).

Despite our findings, the reason that positively framed messages were less effective than negatively framed messages among participants high but not low in narcissism regarding adherence to preventive measures remains unknown. One plausible explanation is that individuals high in narcissism frequently score high on trait anger, expressed as angry feelings toward others (Maciàntowicz & Zajenkowski, 2020), and thus may not respond well to positively framed messages, as these messages emphasize other-centered benefits. Another possible explanation is that individuals high in narcissism have a greater aversion to complex information and hence prefer simple and clear information more than those low in narcissism (Giambatista et al., 2017). Wallace et al. (2009) tested whether people high rather than low in narcissism were more likely to abandon a task that provided an opportunity for self-enhancement whenever an easier alternative was available. Indeed, the authors confirmed this prediction, implying that narcissism may be linked to complexity avoidance. As such, future research may investigate whether narcissism is associated with perceived choice complexity in decision domains like those used in the current study.

Conclusion

Whereas the initial academic papers on the COVID-19 pandemic largely focused on the causes of the disease, the current article contributes to the literature by acknowledging the importance of preventive measures through tailor-made message framing (Adhikari et al., 2020). Our findings suggest that narcissists may be more willing to comply with preventive health behaviors recommended to curb the spread of the pandemic once a message is framed negatively (vs. positively), but only if it clearly highlights the egoistic rather than altruistic benefits of such actions, focusing on a self-centered (vs. other-centered) motivation to act. Policymakers should consider these results when tailoring their health communication directed at narcissists.

Declaration of Competing Interest

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