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"I Respect Whatever Decision You Make!" How Autonomy Support and Exemplars in Short-Form Videos Influence Clinical Trial Recruitment

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ABSTRACT

This study was designed to test two message features (autonomy support and evidence type) found in clinical trial recruitment videos on social media. Using an online experiment in which 606 individuals watched short-form videos about clinical trials, we assessed the impact of varying autonomy support conditions (supportive vs. non-supportive) and incorporating exemplars of a previous clinical trial participant's experience (vs. base-rate information about participating). The findings show that communicating about clinical trials with an autonomy-supportive approach can reduce psychological reactance and improve perceived message effectiveness, attitudes toward clinical trial participation, intentions to engage with the content (i.e., "liking" and sharing the content), and intentions to participate in clinical trials. When combined with an exemplar, autonomy-supportive messaging can be especially effective at reducing psychological reactance and improving attitudes toward clinical trials. The findings are well-timed, as researchers are increasingly turning to social media to enhance clinical trial recruitment.

Introduction

Clinical trials are research studies that evaluate the effects of interventions on health and biomedical outcomes (National Library of Medicine, 2024). With the help of human volunteers (i.e., participants), clinical trials are essential for improving medical knowledge and are believed to be the "safest and fastest" approach to find new treatments and improve health (U.S. Food & Drug Administration, 2023). Despite the benefits, however, poor enrollment has historically hampered the success of clinical trials (National Cancer Institute, 2022), with only 5.1% of Americans ever having participated (Jiang & Hong, 2021). Several barriers to adequate, diverse clinical trial recruitment and enrollment exist, with one of the greatest being a lack of knowledge about clinical trials (Clark et al., 2019; Jiang & Hong, 2021; Yadav et al., 2022). As such barriers persist, researchers have sought to identify strategies to build awareness and improve interest and participation.

This study examines the effects of varying degrees of autonomy support (supportive vs. non-supportive), incorporating exemplars of a previous clinical trial participant's experience (vs. base-rate information about participating), and the interaction of autonomy support and exemplars in the context of clinical trial recruitment. We employ short-form social media videos about clinical trials as experimental stimuli and assess individuals' message perceptions, attitudes, and intentions to participate in clinical trials. Recently, the use of social media has been suggested to reach prospective participants and increase awareness of clinical trials (Darmawan et al., 2020; Jiang & Hong, 2021), and already, researchers have been trying to use short-form videos to improve recruitment (e.g., Baker et al., 2022).

Guided by self-determination theory (Deci & Ryan, 1985) and exemplification theory (Zillmann, 2002, 2006; Zillmann & Brosius, 2000), we predict videos about clinical trial participation will improve message perceptions, attitudes, and behavioral intentions when the videos use autonomy-supportive language and when they exemplify participation with participant experience. In addition, we predict autonomy support and exemplification will interact and influence video message viewers' responses, and video messages will be most effective when they are autonomy-supportive and include an exemplar. Along with the theoretical contributions, this study provides practical recommendations for researchers and health professionals looking to use short-form videos to recruit clinical trial participants.

Clinical trial recruitment via short-form social media

As clinical trial recruitment challenges persist, rather than relying solely on traditional recruitment methods (e.g., word of mouth, flyers, newspapers, television advertising), researchers have started to include social media, which allows for a convenient and cost-efficient method of reaching populations that would otherwise be hard to reach (Baker et al., 2022; Darmawan et al., 2020). A recent scoping review of clinical trial

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recruitment through social media concluded that it could increase participation and reduce participant costs (Darmawan et al., 2020). Video-based social media platforms are especially popular (Gottfried, 2024), and short-form videos can be especially effective because of their ability to allow users to talk directly to their audience. The relaxed nature of social media platforms can allow for authentic, intimate conversations (Montenegro, 2021), while their technological affordances help keep the videos engaging. A search for the keywords "clinical trials" on TikTok results in more than 5,000 videos as of September 2024, with some videos providing a look into participants' experiences and other videos showcasing researchers and health professionals talking about clinical trials (e.g., their importance, what trials involve, opportunities). As the usage of social media for clinical trial recruitment continues to increase (Baker et al., 2022), it is of value to investigate how such video messages can be more effectively designed to achieve their persuasion goals.

Autonomy support

Humans naturally seek control of their behaviors and align behaviors with personal interests and values. Autonomy "involves being volitional, acting from one's integrated sense of self, and endorsing one's actions" (Deci & Ryan, 2000, p. 242), and is therefore considered a basic psychological need affecting a human's well-being and behaviors (Deci & Ryan, 1985, 2000). When a person perceives control or autonomy over enacting a behavior, motivation to pursue the behavior is likely to be higher. This is explained by self-determination theory (SDT) which proposes behaviors can be motivated in either an autonomous or controlled manner (Deci & Ryan, 1985). Autonomous motivation is self-determined and the result of an individual perceiving a behavior as aligning with their interests and values, whereas controlled motivation is non-self-determined and results from an external factor, such as a requirement to complete the behavior (Deci & Ryan, 1985). Autonomous motivation tends to generate interest and behavior change more than controlled motivation and is thus important to consider when trying to motivate a purely optional behavior, such as being in a clinical trial as a healthy volunteer (Hagger & Protogerou, 2020; Ng et al., 2012; Ryan et al., 2008). While people with a diagnosed condition may be intrinsically motivated to participate due to the potential for improvement, healthy individuals lack similar motivation as there is no direct benefit. In addition, they may feel pressure and have lowered interest in participating upon hearing that participation is something they "should" be doing as a means of contributing to the greater good of science. Recently, however, research (e.g., Kirkpatrick & Lawrie, 2023; Legate & Weinstein, 2022) has illustrated that messages can be used to foster feelings of autonomy to motivate certain health-related behaviors. Thus, designing messages to foster autonomy support may also be beneficial in the context of clinical trial messaging aimed at increasing non-diagnosed, healthy clinical trial participants.

Given the importance of autonomy (self-determination theory; Deci & Ryan, 1985, 2000), humans have a strong reaction when they perceive their autonomy is at risk. This reaction is explained by psychological reactance theory (Brehm, 1966, 1972), which suggests that when people feel their freedom of choice is being restricted, they encounter a motivational state of arousal called psychological reactance. Psychological reactance prompts the individual to attempt to protect or restore their threatened freedoms and sense of autonomy (Brehm, 1966, 1972). Prior research has shown that psychological reactance is more likely to occur when messages are controlling (e.g., containing orders and words like "should," "have to," and "must") and refrain from offering choice (Altendorf et al., 2019; Miller et al., 2007; Shen, 2015). Messaging that conveys choice and is autonomy-supportive, on the other hand, can reduce freedom-threat perceptions (Miller et al., 2007; Moon et al., 2021; Vansteenkiste et al., 2006) and is less likely to be negatively evaluated (Dillard & Shen, 2005). In an examination of social media videos advocating for Papanicolaou tests (i.e., Pap smears), Kirkpatrick and Lawrie (2023) found that videos that were autonomy-supportive (vs. non-supportive) were perceived as less threatening to young women's freedom and improved perceived message effectiveness, in comparison to videos that presented the same information in a non-autonomy-supportive manner. Furthermore, prior research (Deci et al., 1994) has shown that contexts supportive of self-determination (including acknowledgment of feelings and low controllingness) promote integration (i.e., internalization in which a person aligns with the value of the activity and finds it useful or important for their personal goals) whereas non-supportive contexts promote introjection (i.e., a person takes in a value but does not identify with or accept it as his or her own). Therefore, autonomy-supportive language may lead people to think a message is persuasive as they judge the value presented in it to be useful and important. Given these findings and the fundamental human need to feel in control (Deci & Ryan, 2000), we predict autonomy-supportive clinical trial messaging should cause greater perceived message effectiveness and lower psychological reactance than a non-autonomy-supportive message:

H1: Videos that are autonomy-supportive (vs. non-supportive) will increase perceived message effectiveness.

H2: Videos that are autonomy-supportive (vs. non-supportive) will lower psychological reactance.

As a form of aversive arousal, psychological reactance can lead to the rejection of messages and the behaviors they advocate for (Altendorf et al., 2019; Brehm, 1966, 1972; Miller et al., 2007). In Miller et al.'s (2007) study of health messaging, highly controlling messages increased perceptions of freedom threat, as well as anger levels and negative assessment of the message's fairness. Negative evaluations of a message decrease the likelihood of persuasive effects, and in the case of autonomy support, the more controlling a person views a message, the more probable it is that they will reject its recommendations (SDT; Brehm, 1966, 1972). The message recipient may even go so far as to perform a behavior that directly goes against what the message promotes (Altendorf et al., 2019; Grandpre et al., 2003; Rains, 2013). This negative reaction can be avoided,

though, by fostering autonomy support in the message. Recommendations from Deci and Ryan (2012) state that in order to effectively generate autonomy support, messages should refrain from pressuring the individual and, instead, present the recommended behavior as optional. Additionally, the message or communicator should not only make the individual feel as though they are the one making the choice but should also make it clear that whatever decision they make will be respected. Considering the individual's perspective and recognizing why they may not want to partake in the behavior (e.g., a prospective participant having worries about what the process is like) can also help with instilling a sense of autonomy (Deci & Ryan, 2012). In turn, favorable attitudes toward the recommended behavior are more likely, and motivation to engage with the messaging may be greater. In their examination of Pap test videos on social media, Kirkpatrick and Lawrie (2023) found that the autonomy-supportive videos resulted in better attitudes toward Pap tests and a greater likelihood of interacting with the videos (e.g., "liking" and sharing the videos they saw), which they explained was likely the result of the video content aligning with their innate desire for autonomy. Accordingly, we predict:

H3: Videos that are autonomy-supportive (vs. non-supportive) will increase engagement with the videos.

H4: Videos that are autonomy-supportive (vs. non-supportive) will increase favorable attitudes toward clinical trial participation.

In addition, we predict that the use of autonomy-supportive language will additionally increase intentions to enroll in clinical trial participation opportunities. Prior studies have begun to illustrate how autonomy support affects message adherence. For instance, in an exploration of whether or not autonomy-supportive communication could increase health professionals' flu vaccine uptake, Moon et al. (2021) found autonomy-supportive messages (e.g., "Consider having the flu jab") were more successful at improving vaccination intentions than messages that were controlling (e.g., "Make sure you have the flu jab"), especially for health professionals who had not been vaccinated during the prior flu season. Additionally, in a study of the stay-at-home messaging that was communicated throughout the COVID-19 pandemic, Legate and Weinstein (2022) found that the messages that were perceived as more autonomy-supportive led to greater autonomous motivation to abide by the stay-at-home orders advocated for in the message and that autonomous motivation predicted actual time spent staying at home. Finally, autonomous motivation has been found to be correlated with involvement in prosocial behaviors (Gagné, 2003). So, given the prosocial nature of clinical trial participation and the potential for autonomy-supportive message frames to promote autonomous motivation, autonomy-supportive clinical trial messages should be especially effective for increasing clinical trial participation intentions and behaviors.

H5a–b: Videos that are autonomy-supportive (vs. non-supportive) will increase a) intentions to participate and b) likelihood of sign-up behavior.

Evidence type

Health communication, including clinical trial recruiting, often uses evidence to persuade audiences to engage in certain behaviors (Zebregs et al., 2015). Base-rate information is a type of statistical evidence, while exemplars are a type of anecdotal or narrative evidence (Kim et al., 2012). Often, base-rate evidence includes percentages that quantify the people within a population who have a certain characteristic (e.g., "5% of Americans have participated in a clinical trial") (Bergan & Lee, 2019; Bigsby et al., 2019). Exemplars, on the other hand, are individual experiences that illustrate a broader concept or phenomenon (e.g., an anecdote of a clinical trial participant) (Zillmann, 2006). Exemplars of clinical trial participation have become more common as social media has emerged. Previous clinical trial participants exemplify the process by creating videos that share their experience (e.g., MonaetheCreator, 2024). Also, those who conduct trials have tried to exemplify the trial process (e.g., PCR Florida, 2024).

Experiences of previous clinical trial participants are thought to affect prospective participants' understanding (Ridgeway et al., 2017), and in response to the presence of exemplars on social media, research has started testing the outcomes of different exemplars in clinical trial recruitment messages. For instance, Lee et al. (2021) looked at the outcomes of creating clinical trial recruitment advertisements that either featured a previous clinical trial participant (exemplifying the experience) or the researcher conducting the trial. The inclusion of the previous participant increased perceived relevance of both the message and topic, as well as the perceptions of the message's credibility, clinical trial attitudes, and likelihood of being in a clinical trial. Two other studies investigating exemplification in clinical-trial messaging found that exemplars increased intention to participate (Hu et al., 2022) and attitudes toward messaging (Kirkpatrick et al., 2022). While these studies begin to illuminate the potential effectiveness of exemplars for clinical trial communication, research has yet to compare the effects of using varying types of evidence (exemplars vs. base-rate data) in the setting of clinical trial promotion on social media.

Base-rate information quantifies many cases to convey how common an outcome is (Zebregs et al., 2015). Thus, base-rate information quantifying how many clinical trial participants have a pleasant, safe experience may help improve beliefs and attitudes related to participation. Based on exemplification theory (Zillmann, 2002, 2006; Zillmann & Brosius, 2000), however, exemplar evidence may be more successful at influencing attitudes, perceptions, and behavior change (Zillmann & Brosius, 2000), especially in the health communication context (Zillmann, 2006). Centered around the idea that cognitive heuristics

(representativeness and availability) lead humans to generalize exemplars, exemplification theory states that when encountering an unfamiliar situation, people will predict the outcome based on the representative evidence they have. Often, prior exemplars serve as the best available representation of a situation and provide evidence of what they can expect because of their vividness (Kahneman & Tversky, 1972, 1973; Zillmann, 2006) and authenticity (Brosius & Bathelt, 1994). As exemplars include concrete details, characters, and experiences, they tend to be stored in one's memory and recalled via the availability heuristic, unlike statistical (base-rate) information, which is often more abstract and complex (Bigsby et al., 2019; Kahneman & Tversky, 1973; Zillmann, 2006). This ease with which exemplars can be recalled is why they are believed to disproportionately influence one's perceptions of a phenomenon (Bigsby et al., 2019; Zillmann, 2002). Due to their vividness, exemplars (vs. base-rate information) have a strong effect on judgments, probability assessments, and persuasion despite the validity of base-rate information typically being higher (e.g., see Bar-Hillel, 1980; Brosius & Bathelt, 1994; Lyon & Slovic, 1976). Furthermore, since people tend to have a difficult time comprehending percentages and probabilities (Brosius & Bathelt, 1994), exemplars are more easily understood, which can lead to greater liking and persuasive effect. Therefore, while both base-rate information and exemplars are forms of evidence (and thus, should be perceived as more effective than a lack of any type of evidence), we predict that clinical trial videos with exemplar evidence will result in the greatest perceived message effectiveness:

H6: Perceived message effectiveness will be greatest when the videos contain exemplar evidence, followed by base-rate evidence, and then no evidence (i.e., a control condition).

By providing support for the claims made in messaging, evidence (base-rate or exemplars) can help reduce counterarguing among message recipients. Exemplars, however, may be especially effective. As exemplars have the ability to imply certain messages without stating them outright (e.g., implying clinical trials are safe and pleasant), they can make messages less triggering, which, in turn, reduces the likelihood of counterarguing (Green & Brock, 2000; Limon & Kazoleas, 2004) and psychological reactance (Gardner & Leshner, 2015). Accordingly, we predict:

H7: Psychological reactance will be lowest when the videos contain exemplar evidence, followed by base-rate evidence, and then no evidence (i.e., a control condition).

On short-form video social media platforms, users have the ability to express their liking of videos by double-tapping a post or pressing the "like" button. Users can also engage with a video by sending it to others or choosing to "follow" the account that posted the video. These measures of engagement (e.g., "likes") act as a form of feedback to both the creators of the content and the social media platforms' algorithms, which ultimately can lead to increased visibility for the videos. As videos with exemplar evidence result in more positive message evaluation and lowered psychological reactance, we also expect that individuals will be more likely to want to engage with social media videos that contain exemplars. The impact of evidence types on social media engagement intentions has not been studied; however, theoretically, as certain evidence types improve perceptions of message effectiveness, they should also increase user interest in positively engaging with the content. Therefore, we hypothesize:

H8: Engagement with the videos will be greatest when the videos contain exemplar evidence, followed by base-rate evidence, and then no evidence (i.e., a control condition).

Importantly, the effects on one's perceptions can then extend to also affect one's behaviors; beliefs influence attitudes, and attitudes play an important part in influencing behavioral intentions and eventual behavior (Fishbein & Ajzen, 2010; Zillmann, 2006). Messages with exemplars have resulted in greater attitudinal and behavioral intentions (Kim et al., 2012; Yoo, 2015). For example, Kim et al. (2012) found smokers who were exposed to a news story containing an exemplar of successful smoking cessation reported greater engagement with the story and, in turn, greater cessation intentions. Furthermore, in a meta-analysis of exemplification theory studies, Bigsby et al. (2019) found support for the use of exemplars rather than base-rate and non-exemplar messages. They explain that as exemplars affect understanding of risks, this can change one's beliefs and, in turn, change one's corresponding behaviors. Based on their findings, our predictions of how evidence type will affect message perceptions and the prior research that found the presence of a clinical trial exemplar improved attitudes toward clinical trials (e.g., Kirkpatrick et al., 2022; Lee et al., 2021) and clinical trial participation intentions (e.g., Hu et al., 2022; Lee et al., 2021), we predict:

H9: Attitudes toward clinical trial participation will be greatest when the videos contain exemplar evidence, followed by base-rate evidence, and then no evidence (i.e., a control condition).

H10a–b: a) Intention to participate and b) likelihood of sign-up behavior will be greatest when the videos contain exemplar evidence, followed by base-rate evidence, and then no evidence (i.e., a control condition).

Interaction of autonomy support and exemplification

Lastly, we hypothesize that the varied levels of autonomy support and exemplification will interact to influence how the messages are processed and the effect they have. Specifically, we predict that having both an exemplar and autonomy support in the message will improve perceptions and behaviors related to clinical trials. Given that exemplars should reduce the cognitive load for processing the message (Brosius & Bathelt, 1994) and autonomy-supportive messages

should produce less reactance (Brehm, 1966), an exemplar and autonomy-supportive framing should be the most effective combination. In addition, it's possible that the effects of one of the message features (e.g., the evidence type) will enhance the effects of the other measure feature (the level of autonomy support). Prior research has found that certain message features can increase elaboration, causing the content of the message to have greater effects. For instance, it has been discovered that communication sources influence audience elaboration and enhance the outcomes of the message's other features, such as the message framing (e.g., positive vs. negative) and the modality in which the information is presented (e.g., video vs. text) (Dockter et al., 2020; Jones et al., 2003). So, if the evidence presented in the messages helps improve the audience's interest and attention to the video, the level of autonomy support may be more likely to affect the audience. Altogether, we hypothesize:

H11a–f: Videos that are delivered in an autonomy-supportive manner and use exemplar evidence (compared to all other videos) will result in the a) greatest perceived message effectiveness, b) lowest psychological reactance, c) greatest engagement with the videos, d) most favorable attitudes toward clinical trial participation, e) highest intention to participate, and f) greatest likelihood of sign-up behavior.

Method

Experimental design and stimuli

The present study used a 2 (autonomy: supportive vs. non-supportive) x 3 (evidence type: exemplar vs. base-rate vs. control) between-subject factorial design online experiment aimed at adults residing in the United States.

The stimuli consisted of TikTok videos that were created to fit the conditions of the experiment. Three speakers acted as doctors and recorded one video for each of the six conditions, creating a total of 18 videos (three per condition). Three videos on different topics were included in each condition to avoid a single-message design, as recommended by Thorson et al. (2012). Each condition included videos promoting clinical trials for three general health concerns: sleep, stress, and caffeine. Each video in the experimental conditions included four common components: (1) a self-introduction, (2) the importance of clinical trial participation, (3) prior participants' experiences with clinical trials (presented in either the form of an exemplar or base-rate information), and (4) a recommendation to sign up for a clinical trial. However, videos in the control condition did not contain the third component (prior participants' experiences with clinical trials). For videos in the autonomy-supportive condition, a fifth component acknowledged prospective viewers' perspectives and feelings about engaging in clinical trials. Captions focused on the key messages. All other video features were consistent throughout the six experimental conditions, including clothing (lab coats), race (White), sex (female), setting (neutral office), TikTok logo, and caption style. The average video length was consistent within the experimental conditions (78 seconds) and the control conditions (54 seconds). All 18 transcripts and videos (Appendix A) were reviewed by the research team. The Institutional Review Board (IRB) at the University of Missouri approved the study (IRB review #: 400349).

Procedure and participants

A Qualtrics panel was used to identify, recruit, and compensate the study's respondents. After providing consent and passing the screeners (age, U.S. location, and ability to view/hear videos), respondents answered questions assessing their need for autonomy, preexisting attitudes toward clinical participation, and prior experience with vertical short-form social media. Next, respondents were randomly dispersed to one of the six conditions, where they viewed three videos on different clinical trial topics within the condition. The order of how the three videos were presented was fully randomized to control the order effect. After each of the three videos, respondents completed manipulation check questions and rated perceived message effectiveness and psychological reactance. After having watched all three videos, the respondents completed the questions that measured their attitudes toward clinical trial participation and intentions to sign up for clinical trials. Next, a fabricated scenario asked if respondents would be willing to join a clinical trial participant list and be contacted by researchers about future opportunities immediately after the survey. Lastly, respondents saw a debriefing statement.

In total, 606 responses were received and analyzed. The participants' average age was 47 years ($SD = 17$), and the biological sex distribution was nearly equal, with 49% male ($n = 297$) and 50% female ($n = 307$); two respondents chose not to disclose their biological sex. The majority of respondents identified as White (72.4%, $n = 439$), followed by Black or African American (17.7%, $n = 107$), while all other racial groups accounted for less than 5% each.

Independent variables

Autonomy support

Autonomy referred to the feeling of control over one's own choices and behaviors, including two levels: supportive and non-supportive. Following the guidelines of Deci et al. (1994), autonomy was manipulated by varying two components: (1) acknowledgment of viewers' feelings and perspectives, and (2) the wording of the recommendation to sign up for a clinical trial (whether the recommendation offered choices and respected individuals' freedom to choose). Specifically, the autonomy-supportive videos acknowledged viewers' perspectives and feelings in regard to why they may not want to be in a trial (e.g., "I understand that participating in a clinical trial may not be comfortable for you.") and offered choices while respecting viewers' freedom to decide (e.g., "I respect whichever option you choose.") using low-controlling language such as "can" and "might." In contrast, the non-supportive videos omitted the acknowledgment component and did

not offer choices or respect viewers' freedom to decide (e.g., "It's really not an option, considering how important this is."). Instead, these videos used high-controlling language like "ought to" and "must."

A manipulation check confirmed the manipulation. Following each video, respondents rated their perceived threat to freedom on a four-item, five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*) adapted from Dillard and Shen (2005), including items such as, "The message tries to manipulate me." An independent samples t-test showed that the manipulation worked, with respondents who viewed autonomy-supportive videos ($M = 1.75$, $SD = 0.81$, $n = 303$) reporting a significantly lower perceived threat to freedom than respondents who viewed non-supportive videos ($M = 2.9$, $SD = 1.02$, $n = 303$, $p < .001$).

Evidence type

Evidence type referred to the format of evidence used to support a claim about the likelihood of a specific effect for a broader population (Hoeken & Hustinx, 2009), including three categories: exemplar, base-rate, and control (no evidence). In the exemplar condition, the doctor shared an example of a former clinical trial participant to demonstrate the positives of participation (e.g., "[. . .] he had a good experience" and "[. . .] to keep him safe"). In the base-rate condition, the doctor shared statistical probabilities (e.g., "more than 12,000 people [. . .] had a good experience" and "90% felt that clinical trials are generally safe"). Statistics used in the base-rate condition were derived from data reported by Anderson et al. (2018) and Tantoy et al. (2021). No information about participants' experiences was included for videos in the control condition.

Covariates

Preexisting attitudes toward clinical trial participation

To assess preexisting attitudes toward clinical trial participation, respondents rated their perceptions of clinical trial participation on a five-item, five-point semantic differential scale (Kang & Lee, 2018), using items such as bad/good and negative/positive. A higher score indicated a more favorable attitude (averaged scale: $M = 3.93$, $SD = 0.85$, Cronbach's $\alpha = .88$).

Need for autonomy

Need for autonomy gauges preferences for freedom to choose one's own path versus external guidance about health decisions (Bol et al., 2019). Using a four-item Likert scale (1 = *very unlikely*, 5 = *very likely*, respondents rated items like: "When advised that setting goals is a good way to motivate yourself to change your health behaviors, how likely are you to set your own goals?" A higher score showed greater need for autonomy (averaged scale: $M = 4.23$, $SD = 0.71$, Cronbach's $\alpha = .76$).

Prior experience with short-form video

Respondents indicated their level of experience using vertical short-form social media platforms (e.g., Facebook Stories, Instagram Reels, TikTok, and YouTube Shorts) on a scale from 1 (*very little*) to 5 (*a great deal*) (Lee et al., 2024) ($M = 3.56$, $SD = 1.32$).

Dependent variables

Perceived message effectiveness

Perceived message effectiveness assessed respondents' ratings of the stimuli's persuasive effects using a five-item, five-point scale (1 = *strongly disagree*; 5 = *strongly agree*) adapted from Lee et al. (2013). Example items included, "The content of this video is convincing" (Cronbach's α= across the conditions: .95–.98).

Psychological reactance

Following Dillard and Shen's (2005) reactance research, the study conceptualized reactance as an amalgam of cognition (i.e., counterarguing) and affect (i.e., anger); accordingly, it was measured as the average of counterarguing and anger. Counterarguing was assessed with a three-item scale from Clayton et al. (2020), including items like, "While watching the video, did you criticize it in your head?" Anger was assessed with a three-item scale from Dillard and Shen (2005), such as, "The video made me feel irritated." Both were five-point Likert scales, ranging from 1 (*not at all*) to 5 (*a great deal*). (Cronbach's α across the conditions: .88–.94).

Intention to engage with the videos

Intention to engage referred to respondents' likelihood to "like," "share," or follow the account that posted the video. This was measured using a three-item, five-point Likert scale (1 = *very unlikely*, 5 = *very likely*) adapted from Dockter et al. (2020), with items such as: "How likely is it that you would 'like' (i.e., tap the heart or thumbs-up icon) this video if you saw it on social media?" (Cronbach's α across the conditions: .93–.95).

Attitudes toward clinical trial participation

Attitudes toward clinical trial participation were measured after exposure to the videos using the same scale as for preexisting attitudes (Cronbach's α across the conditions: .88–.94).

Intention to participate

Intention to participate referred to respondents' willingness to be in a clinical trial. This was measured using a two-item, five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*) adapted from Chen et al. (2022). An example scale item was: "I will join a clinical trial if the opportunity comes up." (Cronbach's α across the conditions: .93–.98).

Sign-up behavior

Sign-up behavior was assessed by asking the respondents whether they would be willing to be taken to a sign-up page where they could share their e-mail address, which would mean being contacted for future trial opportunities. If a respondent clicked "Yes," that meant they were willing to proceed (indicating sign-up behavior). These participants were not actually taken to a sign-up page. They were taken to a page that explained the true purpose of

the question and given information about where to locate real clinical trial opportunities. Although this question did not track respondents' actions beyond clicking "Yes," choosing to advance to the sign-up page could serve as a reasonable indicator of actual sign-up behavior (Hu et al., 2024).

Data analysis

A series of 2 (autonomy: supportive vs. non-supportive) x 3 (evidence type: exemplar vs. base-rate vs. control) between subjects ANCOVAs were conducted to examine the effects on each continuous outcome variable. For sign-up behavior, a binary variable, binary logistic regressions were performed. Preexisting attitudes toward clinical trial participation, need for autonomy, and prior experience with short-form videos were controlled to minimize alternative explanations and accurately assess the influence of the independent variables.

Results

The main effects of autonomy and evidence type, as well as the interacting effects, are presented below. Table 1 shows the descriptive statistics for all outcome variables across the different message conditions. Table 2 presents the inferential statistics.[1]

Main effect of autonomy

H1–H5 predicted that videos that were autonomy-supportive (vs. non-supportive) videos would cause increased perceived message effectiveness (H1), lowered psychological reactance (H2), increased engagement (H3), more favorable attitudes toward clinical trial participation (H4), higher intention to participate (H5a), and a greater likelihood of sign-up behavior (H5b). The results indicated that autonomy-supportive videos significantly enhanced perceived message effectiveness (M_{adj} = 3.83, SE = .04) compared to non-supportive videos (M_{adj} = 3.28, SE = .04), $F(1,597) = 87.59$, $p < .001$, partial $\eta^2 = .13$. They also produced significantly lower psychological reactance (M_{adj} = 1.74, SE = .06) than non-supportive videos (M_{adj} = 2.49, SE = .06), $F(1,597) = 91.12$, $p < .001$, partial $\eta^2 = .13$. Additionally, autonomy-supportive videos generated significantly more engagement (M_{adj} = 3.15, SE = .06) than non-supportive ones (M_{adj} = 2.53, SE = .06), $F(1,597) = 53.87$, $p < .001$, partial $\eta^2 = .08$. Finally, they generated significantly more favorable attitudes toward clinical trial participation (M_{adj} = 4.26, SE = .04) versus non-supportive videos (M_{adj} = 4.02, SE = .04), $F(1,597) = 17.89$, $p < .001$, partial $\eta^2 = .03$, and significantly increased intention to participate in a clinical trial (M_{adj} = 3.50, SE = .05) compared to non-supportive videos (M_{adj} = 3.35, SE = .05), $F(1,597) = 3.91$, $p = .048$, partial $\eta^2 = .01$. However, there was no significant difference in the likelihood of sign-up behavior between autonomy-supportive and

Table 1. Descriptive statistics for all outcome variables by message condition ($N = 606$).

Outcome Variable	Autonomy Supportive						Non-Supportive					
	Exemplar ($n = 102$)		Base-rate ($n = 102$)		Control ($n = 99$)		Exemplar ($n = 101$)		Base-rate ($n = 100$)		Control ($n = 102$)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
A) PME	3.99	0.66	3.86	0.84	3.68	0.89	3.35	1.00	3.39	0.83	3.04	0.88
B) PRT	1.48	0.72	1.81	1.04	1.84	1.10	2.47	1.24	2.23	1.03	2.83	1.12
C) ENGAGE	3.39	0.97	3.08	1.23	3.00	1.22	2.63	1.17	2.61	1.12	2.33	1.12
D) ATT	4.49	0.68	4.29	0.91	4.06	1.03	3.94	0.93	3.96	0.99	4.10	0.83
E) INT	3.71	0.91	3.56	1.19	3.24	1.22	3.36	1.13	3.40	1.02	3.27	0.99
F) Sign-Up (%)	Percentage of "Yes" Responses											
	47.06%		44.12%		29.29%		40.59%		36%		37.25%	

PME = Perceived message effectiveness. PRT = Psychological reactance. ENGAGE = Intention to engage with the videos. ATT = Attitude toward clinical trial participation. INT = Intention to join clinical trials.

Table 2. Summary of ANCOVA and Logistic regression results.

Predictors	PME		PRT		ENGAGE		ATT		INT		S-Up
	F	η^2	*F*	η^2	*F*	η^2	*F*	η^2	*F*	η^2	*Exp(B)*
IVs											
Auto	87.59***	.13	91.12***	.13	53.87***	.08	17.89***	.03	3.91*	.01	0.92
EvType	8.75***	.03	6.29**	.02	4.61*	.02	0.53	.002	4.21*	.01	1.57*
Auto x EvType	1.50	.01	6.07**	.02	1.39	.01	5.76**	.02	0.92	.003	–
Covariates											
PreATT	227.60***	.28	101.12***	.15	95.06***	.14	425.25***	.42	166.39***	.22	1.77***
NFAuto	3.51	.01	1.30	.002	3.77	.01	1.42	.002	0.01	.00	0.88
ExpSFV	0.002	.00	9.18**	.02	8.69**	.01	0.69	.001	14.13***	.02	1.12

PME = Perceived message effectiveness. PRT = Psychological reactance. ENGAGE = Intention to engage with the videos. ATT = Attitude toward clinical trial participation. INT = Intention to join clinical trials. S-UP = Sign-up behavior. Auto = Autonomy. EvType = Evidence Type. PreATT = Preexisting attitudes toward clinical trial participation. NFAuto = Need for autonomy. Prior experience with short-form videos = ExpSFV.

ANCOVA results are reported for PME, PRT, ENGAGE, ATT, and INT. Binary logistic regression results are reported for S-Up. In the logistic regression, autonomy (supportive vs. non-supportive) and evidence type (exemplar vs. Base-rate vs. control) were dummy coded, with the non-supportive and control conditions serving as reference groups, respectively. The Exp(B) value for evidence type represents the exemplar condition. The interaction term was excluded from the logistic regression to maintain model simplicity, as it was not significant.

***$p < .001$. **$p < .01$. *$p < .05$.

non-supportive videos ($p = .61$). Therefore, **H1, 2, 3, 4, and 5a** were supported, but **H5b** was not.

Main effect of evidence type

H6–H10 posited that videos with exemplar evidence (vs. base-rate evidence and no evidence) would lead to the greatest perceived message effectiveness (H6), lowest psychological reactance (H7), greatest engagement (H8), most favorable attitudes toward clinical trial participation (H9), highest intention to participate (H10a), and a greatest likelihood of sign-up behavior (H10b). The results showed that exemplar evidence did not significantly differ from base-rate evidence regarding its effects on perceived message effectiveness ($p = .95$), psychological reactance ($p = .97$), engagement ($p = .18$), favorable attitudes ($p = .58$), intentions to participate ($p = .78$), and sign-up behavior ($p = .49$). Therefore, **H6–10** were not significant.

That said, it is noteworthy that exemplar evidence significantly outperformed the control condition in generating greater perceived message effectiveness (exemplar: $M_{adj} = 3.64$, $SE = .05$; control: $M_{adj} = 3.38$, $SE = .05$, $p < .001$), lower psychological reactance (exemplar: $M_{adj} = 2.01$, $SE = .07$; control: $M_{adj} = 2.31$, $SE = .07$, $p = .002$), increased engagement (exemplar: $M_{adj} = 2.99$, $SE = .07$; control: $M_{adj} = 2.68$, $SE = .07$, $p = .003$), higher intention to participate (exemplar: $M_{adj} = 3.51$, $SE = .07$; control: $M_{adj} = 3.27$, $SE = .07$, $p = .01$), and a greater likelihood of sign-up behavior (exemplar: 43.8%; control: 33.3%, Exp(B) = 1.57, $p = .03$). Nevertheless, the exemplar condition did not elicit more favorable attitudes toward participation compared to the control condition ($p = .31$).

Similarly, base-rate evidence outperformed the control condition in terms of perceived message effectiveness (base-rate: $M_{adj} = 3.64$, $SE = .05$; control: $M_{adj} = 3.38$, $SE = .05$, $p < .001$), lower psychological reactance (base-rate: $M_{adj} = 2.01$, $SE = .07$; control: $M_{adj} = 2.31$, $SE = .07$, $p = .002$), and higher intention to participate (base-rate: $M_{adj} = 3.49$, $SE = .07$; control: $M_{adj} = 3.27$, $SE = .07$, $p = .02$). However, base-rate (vs. control) did not produce increased engagement ($p = .09$), more favorable attitude ($p = .63$), or a greater likelihood of sign-up behavior ($p = .15$).

Therefore, videos that present any type of evidence yielded greater message effectiveness, lower psychological reactance, and higher intention to participate in trials compared to videos with no evidence in the control condition.

Interaction between autonomy and evidence type

H11a–f hypothesized videos that are delivered in an autonomy-supportive manner *and* use exemplar evidence would result in greatest perceived message effectiveness (H11a), lowest psychological reactance (H11b), greatest engagement (H11c), most favorable attitudes toward participation in clinical trials (H11d), highest intention to participate (H11e), and greatest likelihood of sign-up behavior (H11f). There was a statistically significant interaction for psychological reactance (**H11b**), $F(2,597) = 6.07$, $p = .002$, partial $\eta^2 = .02$. Specifically, in the autonomy-supportive condition, videos using exemplar evidence ($M_{adj} = 1.56$, $SE = .10$) produced significantly lower psychological reactance than those using base-rate evidence ($M_{adj} = 1.83$, $SE = .10$, $p = .04$). Additionally, base-rate videos did not differ significantly from control videos ($M_{adj} = 1.82$, $SE = .10$, $p = .93$) regarding psychological reactance. Conversely, in the non-supportive condition, videos using base-rate evidence ($M_{adj} = 2.20$, $SE = .10$) elicited lower psychological reactance than both those using exemplar evidence ($M_{adj} = 2.47$, $SE = .10$, $p = .05$) and those without any evidence (i.e., control) ($M_{adj} = 2.80$, $SE = .10$, $p < .001$). Figure 1 shows the interaction between autonomy level and evidence type on psychological reactance.

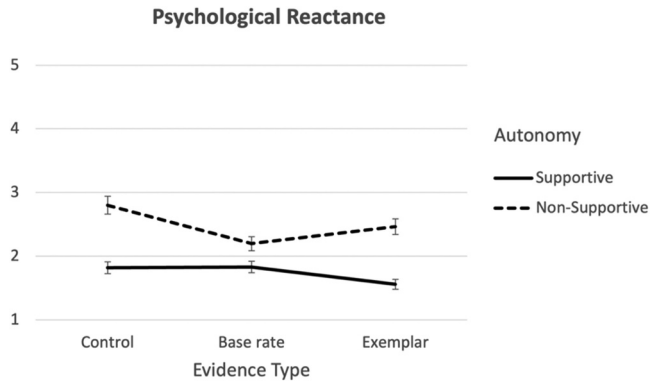

Figure 1. Interaction between autonomy level and evidence type on psychological reactance. *Note.* $N = 606$. Error bars = 95% CI.

There was also a statistically significant interaction for favorable attitudes toward clinical trial participation (**H11d**), $F(2,597) = 5.76$, $p = .003$, partial $\eta^2 = .02$. Specifically, in the autonomy-supportive condition, videos using exemplar evidence ($M_{adj} = 4.40$, $SE = .07$) produced greater favorable attitudes toward clinical trial participation than those using base-rate evidence ($M_{adj} = 4.27$, $SE = .07$, $p = .18$) and the control condition ($M_{adj} = 4.10$, $SE = .07$, $p = .002$). In contrast, in the non-supportive condition, control videos ($M_{adj} = 4.11$, $SE = .07$) elicited greater favorable attitudes than those using base-rate evidence ($M_{adj} = 4.01$, $SE = .10$, $p = .28$) or exemplar evidence ($M_{adj} = 3.95$, $SE = .07$, $p = .10$). Figure 2 shows the interaction between autonomy level and evidence type on attitude.

The interaction of autonomy and evidence type was not significant for perceived message effectiveness ($F(2,597) = 1.50$, $p = .23$), engagement ($F(2,597) = 1.39$, $p = .25$), intention to participate ($F(2,597) = .92$, $p = .40$), and likelihood of sign-up behavior ($p = .31$). Therefore, **H11b** and **H11d** were supported, but **H11a, H11c, H11e**, and **H11f** were not.

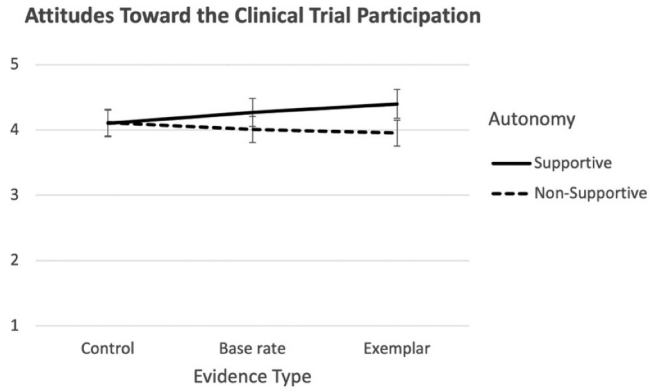

Figure 2. Interaction between autonomy level and evidence type on attitudes toward clinical trial participation. $N = 606$. Error bars = 95% CI.

Discussion

This study examines how autonomy and evidence type affect people's attitudes, perceptions, engagement, intentions, and actual sign-up behavior for clinical trial participation. For the level of autonomy support, the findings showed that respondents found autonomy-supportive videos to be more effective, less psychological reactance-provoking, and more worthy of engagement, and they led to more favorable attitudes about and intention to participate in clinical trials compared to non-supportive videos. Although respondents showed no significant differences in their reactions to the two evidence types (exemplar and base-rate), their responses to the videos without any evidence (control) were significantly less positive. Specifically, they found these videos less effective, experienced more psychological reactance, engaged less, indicated a lower likelihood of participating, and had lower sign-up rates.

Turning to interaction effects, when autonomy-supportive language was used with exemplar evidence, respondents reported the lowest psychological reactance and the best attitudes toward clinical trial participation. It is valuable to recognize that exemplar evidence amplified the differences between autonomy-supportive and non-supportive messages. That is, exemplar evidence made autonomy-supportive messages even less likely to trigger reactance and more effective in generating greater favorable attitudes toward clinical trial participation. In contrast, non-supportive messages, when paired with exemplar evidence, resulted in even higher reactance and fewer favorable attitudes compared to those using base-rate evidence. This indicates that exemplars shouldn't be used to mitigate the negative effects of controlling, non-supportive language.

The effects of the videos' levels of autonomy support were in alignment with our predictions. Given human beings' desire for autonomy (Deci & Ryan, 1985) and the relationship between psychological reactance and message rejection (Altendorf et al., 2019; Brehm, 1966, 1972; Miller et al., 2007), we had suspected that the messages that were autonomy-supportive would be perceived as more effective and result in lower levels of psychological reaction. Furthermore, in accordance with prior research (e.g., Kirkpatrick & Lawrie, 2023; Legate & Weinstein, 2022) showing perceived autonomy to influence attitudes and behavioral intentions, we expected it would be the case that videos that discussed clinical trial participation in an autonomy-supportive manner would result in more favorable attitudes toward clinical trial participation and greater intentions to participate in future trials. The support for these hypotheses shows the value of social media users communicating about clinical trials in an autonomy-supportive manner. People have to participate in order for clinical trials to succeed. However, it's important that communicators don't portray participation as a mandatory behavior, given that prospective participants will likely be more motivated to participate if they perceive it as something that they have been given the choice to do.

Unfortunately, however, while the autonomy-supportive videos improved attitudes and intentions to participate, they did not increase how many people were willing to complete the clinical trial sign-up behavior that was presented to them in the study. It's conceivable that while the autonomy support helped improve interest in participation, it was not enough to nullify other existing barriers related to clinical trial participation. A multitude of barriers exist (Kim et al., 2015), making participation quite complex. Messages might also need to address other factors that may be causing an intention-behavior gap. It's also possible that the participants in the study had an optimistic bias, such that they were hopeful of their intentions to participate in the future, but when the opportunity presented itself, they lost motivation. Multiple factors affect one's behavior, and it can be common for people to intend to do something but not follow through (Fishbein & Ajzen, 2010; Sheeran & Webb, 2016). While the effects of autonomy support did not carry over to the sign-up behavior, the effects on attitude and behavior intentions are still noteworthy, especially if future research can help address other factors affecting the intention-behavior gap.

Furthermore, the influence of autonomy support on participants' intentions to engage with the videos is important for the context of online clinical trial recruitment, given the impact of social media algorithms in the sharing of content. As liking, commenting, and sharing are all social media engagement behaviors that communicate the importance of a video and lead the algorithms to show the videos to more people, the use of autonomy-supportive communication may also be helpful for the spread of such content on social media, ultimately leading more people to see the information.

As for evidence type, this study hypothesized that clinical trial videos would be most effective when they used exemplars rather than base-rate information to support the idea that

participation is a safe, positive experience. This was not the case, as respondents showed no significant differences in their reactions to the two evidence types (exemplar and base-rate), which goes against exemplification theory predictions (Brosius & Bathelt, 1994). It's possible that the quality of the exemplar was not strong enough to compel the audience, in part because someone was speaking on behalf of the exemplar rather than hearing directly from the exemplar themself. Prior research (e.g., Bergan & Lee, 2019; Hinsz et al., 1988) has suggested that anecdotal evidence quality influences its effectiveness. Perhaps it would be more compelling and convincing if the exemplar was in the form of the prior participant sharing their story directly in a testimonial fashion rather than being relayed by the researcher. Rather than having the exemplar in the typical testimonial format, we tested the strategy of having the researcher share the exemplar because, from a practical standpoint, this is something that researchers on social media can easily do without needing to incorporate an additional person in their video. However, the viewers of the videos may have perceived that the story of the prior participant was only being included to persuade them. Another possible explanation could be that the public has become more familiar with basic statistics, like the percentages used in this study, due to their more frequent presence in the media (e.g., news articles and election polls). Additionally, presenting these statistics in a short-form video format rather than in text may make them even easier to understand. As a result, the superiority of exemplars, such as ease of comprehension and processing (Brosius & Bathelt, 1994), may not be as salient as it was before. We recommend future research include audience numeracy levels to further explore this potential explanation.

While there was not a difference in the effects of the type of evidence (exemplar vs. base-rate), the findings do show the value of having evidence in one of these forms. Psychological reactance was greater, and persuasion (engagement intentions, participation intentions, and sign-up rates) was lower when the videos lacked any sort of evidence that clinical trial participation was safe and worthwhile. As human attention spans are shortening, short social media videos are more likely to hold attention (Dodds, 2024). However, the present findings show that social media users should not be too brief when talking about clinical trials to their audiences.

Despite the lack of a main effect for the evidence type, the interaction results of this study show that the evidence type may indeed have an important contribution when combined with other message characteristics, such as autonomy-supportive language. In support of our hypothesis, the videos that paired autonomy-supportive language with an exemplar led to the lowest psychological reactance and most favorable attitudes toward clinical trial participation. While autonomy-supportive messages, by their nature, should be less likely to cause psychological reactance, it appears that the inclusion of an exemplar with autonomy-supportive language can reduce the likelihood of reactance even further. Therefore, it may be especially beneficial to use exemplars and communicate in an autonomy-supportive manner when talking about a topic that may evoke reactance in an audience. Clinical trials may fit into this category as they are experimental and typically more beneficial to the body of science than to the individual participant (in the case of healthy volunteers). The interaction between autonomy support and evidence type was also strong enough to improve attitudes toward clinical trials, such that the combination of an exemplar and autonomy support was most effective.

Also, while the combination of an exemplar with autonomy-supportive language led to the lowest psychological reactance, the pairing of an exemplar with non-supportive language increased reactance. This is interesting theoretically as it appears that the exemplar may have amplified the effects of certain message features – leading the non-supportive language to have greater effects. Prior studies investigating how message features affect elaboration have found that features of a message (e.g., a source) can help improve the processing of the message content, causing certain components of the message (e.g., how the message is framed) to be more influential (Jones et al., 2003). Therefore, in the present study, it may be the case that the exemplar evidence increased elaboration for the remainder of the message (the supportive or non-supportive recommendations related to clinical trial participation), causing this part of the message to be more influential. It follows logically that the vividness of the exemplars would heighten interest and attention in the message overall. Whereas, if the audience has already disengaged from the message because of the base-rate evidence, the remainder of the message (the autonomy-supportive or non-supportive language) would have less of an impact.

Furthermore, as exemplars can elicit emotional responses (Andersen et al., 2017), it could be the case that when paired with non-supportive language, the emotional state of the audience further heightens the feelings of coercion or threat, thereby increasing psychological reactance. The Social Amplification of Risk Framework (SARF; Kasperson et al., 1988, 2022), which suggests that emotionally charged messages and trust in messengers can each amplify risk, may be a useful framework to consider in future research, especially in the case of including exemplar accounts that are more emotional. In future research, measures of source credibility (e.g., trust) would be valuable as a means of seeing how varying levels of autonomy support affect trust and, in turn, evaluation of risk. Also, as risk perception research (e.g., Kahlor et al., 2003; Trumbo, 2002) suggests that audiences sometimes rely on heuristics when evaluating risks, it's possible that the pairing of an exemplar with the non-supportive language is especially salient and memorable, which could lead to greater psychological reactance and an overestimation of risks associated with clinical trials. Heuristic processing is especially likely with low issue involvement (Kahlor et al., 2003), so relying on heuristics may be especially likely in the case of healthy individuals who lack motivation or interest in clinical trial participation. We suggest future research consider how risk amplification frameworks might help further illuminate message processing and effects within this context. Altogether, the interaction results illustrate the importance of considering the combined effect of certain message features.

Practical implications

This study provides valuable insights for clinical trial recruitment through short-form video platforms. When communicating about clinical trials, health professionals should consider pairing autonomy-supportive language with examples of former participants' positive experiences. This approach can reduce reactance, boost audience engagement, and improve attitudes toward clinical trial participation. However, when non-supportive or more controlling language is required for clarity (e.g., "You *must* attend all five, two-hour sessions on three consecutive Tuesdays"), we suggest using base-rate evidence in the communication to reduce psychological reactance and maintain more favorable attitudes.

While the findings of this study support our recommendation of pairing autonomy-supportive language with exemplars, it is important to do so carefully and consider the potential ethical implications of this approach. Researchers should refrain from sharing details without one's consent. Furthermore, being selective about which experiences to share (e.g., omitting less favorable experiences) could lead to ethical concerns. Lastly, while autonomy-supportive language helps promote one's freedom to choose, pairing such language with an emotional exemplar could inadvertently exert pressure. To help navigate the ethical considerations, we recommend incorporating input from patient advocates during message development.

Limitations and future research

The first limitation concerns the length of the stimuli – there is a roughly 20-second difference between the experimental conditions (78 seconds) and the control condition (54 seconds), as we omitted the entire evidence section in the control. Some studies attempt to fill this time gap by adding unrelated information in the control condition, but to avoid introducing potential confounding factors caused by the additional information, we opted for the absence-of-evidence approach. This way, the only remaining confounding factor is the 20 seconds. Thus, we advise caution when interpreting the superiority of evidence use (either exemplar or base-rate) compared to the control condition. However, the primary focus of this study – examining the influence of autonomy (supportive vs. non-supportive) and evidence type (exemplar vs. base rate) – is not affected by this limitation. Our study did not measure the respondents' identification with the doctors in the videos or their perceptions of similarity to them. It could be of interest to future research to include a measure of perceived similarity to see if perceptions of similarity between the participants and the doctors in the videos influence the effects. Perceived similarity can affect a message recipient's identification with a source and evaluation of the message (Andsager et al., 2006). Additionally, post hoc power analyses with G*Power showed sufficient power for most outcomes, except for intention to join clinical trials. Therefore, results related to this outcome should be interpreted with caution. Moreover, as with most controlled experimental studies, a certain level of artificiality is inevitable since respondents were paid to view our videos, and their attention and engagement may differ from real-world conditions. Future research could collaborate with medical organizations (e.g., Mayo Clinic, Pfizer) to examine full sign-up behavior and address artificiality using field experiments. Social media presents the opportunity to reach a vast audience of potential clinical trial participants. Using such a platform requires careful consideration, though. Researchers, doctors, and other professionals who are utilizing social media to promote clinical trials should aim to create messages that generate autonomous motivation. The presence of evidence is important for reducing reactance to the message and improving attitudes toward clinical trials. However, the specific format in which the evidence is presented (exemplar vs. base-rate information) is of lesser significance.

Note

1. We also tested a separate model that included additional control variables, such as attitude toward medical research, political ideology, and education. However, these did not meaningfully alter our results, so we left them out to maintain model simplicity. Notably, attitude toward medical research had a significant independent effect on all outcome variables, which may be valuable for future survey studies exploring its predictive role in health communication. For access to the measures, results, or data from this unused model, please contact the corresponding author.

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Appendix. Message transcripts for the stress topic

		Evidence Type		
Component	Autonomy	Exemplar	Base-rate	Control
Introduction	*Supportive*	Hi everyone, for those of you who don't know me, I'm Dr. Wilson. I'm here today to talk about the importance of clinical trials. [Caption: It's Dr. Wilson talking about clinical trials.]		
Importance of clinical trial participation		Clinical trials help us learn about how to prevent and treat illnesses. But this progress only happens if people decide to join clinical trials. While we need participants with certain diseases and health conditions, we also need healthy people to join, too. [Caption: Clinical trials are only successful if we have participants. You can participate!]		
Prior participants' experiences with clinical trials		I have a patient who joined a clinical trial about chronic stress, even though he wasn't having problems with stress, and he had a good experience. He felt like his needs were taken into account. The people who worked there took care to keep him safe. Based on his experience, he told me that he'd be willing to participate in another trial. [Caption: My patient just participated in a clinical trial about chronic stress. He had a great experience and would participate again.]	A recent study of more than 12,000 people who had volunteered in clinical trials about chronic stress shows that they had a good experience. That number includes healthy volunteers who don't have stress issues. 90% felt that clinical trials are generally safe. 93% said they'd be willing to participate in another clinical trial in the future. [Caption: 12000 people volunteered for clinical trials about chronic stress and had a good experience. 90% felt that clinical trials are generally safe and 93% would participate again!]	x
Acknowledgment of participants' perspectives and feelings		I understand that being in a clinical trial might not be something you're comfortable with. You might feel unsure about it all or not know what to expect the process to be like. [Caption: You might not be comfortable with participating in a clinical trial – that's okay!]		
Recommendations		As a researcher, my advice is for you to consider signing up for a clinical trial one day to help others. But I also believe that this is your choice. I just think it would be great for you to think about this and what is right for you. I respect whichever option you choose. [Caption: I hope you'll participate. It's your choice to make!]		
Introduction	*Non-Supportive*	Hi everyone, for those of you who don't know me, I'm Dr. Wilson. I'm here today to talk about the importance of clinical trials. [Caption: It's Dr. Wilson talking about clinical trials.]		
Importance of clinical trial participation		Clinical trials help us learn about how to prevent and treat illnesses. But this progress only happens if people decide to join clinical trials. While we need participants with certain diseases and health conditions, we also need healthy people to join, too. [Caption: Clinical trials are only successful if we have participants. You can participate!]		
Prior participants' experiences with clinical trials		I have a patient who joined a clinical trial about chronic stress, even though he wasn't having problems with stress, and he had a good experience. He felt like his needs were taken into account. The people who worked there took care to keep him safe. Based on his experience, he told me that he'd be willing to participate in another trial. [Caption: My patient just participated in a clinical trial about chronic stress. He had a great experience and would participate again.]	A recent study of more than 12,000 people who had volunteered in clinical trials about chronic stress shows that they had a good experience. That number includes healthy volunteers who don't have stress issues. 90% felt that clinical trials are generally safe. 93% said they'd be willing to participate in another clinical trial in the future. [Caption: 12000 people volunteered for clinical trials about chronic stress and had a good experience. 90% felt that clinical trials are generally safe and 93% would participate again!]	x
Acknowledgment of participants' perspectives and feelings		x		
Recommendations		As a researcher, I am telling you now that you have to do your part and be in a clinical trial. This really is something you should be making sure you do to help other people. If you haven't ever been in one, now's the time. It's really not an option, considering how important this is. [Caption: You HAVE to do your part and be in a clinical trial. Now is the time!]		