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Reactance and norms in a highly collectivist and compliance-oriented society

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The purpose of this study is to test the theories of communication about health crises and theories of persuasive health communication that have been applied to COVID-19 in a different cultural context in order to understand these theories need to be adapted for a global pandemic. In order to explore this realm, the conceptual framework established by the theory of planned behavior is expanded by adding two components. The first component is to understand the role of compliance and the way it interacts with psychological reactance. The second component is to understand the role of collectivism in the way it interacts with the subjective norms component of the integrated model. By utilizing message cues, this study used an experimental design to empirically test whether using the norms and compliance cues affect behavioral intentions to follow government-enforced health policies to contain COVID-19. A between-subjects experiment was conducted with random assignment to one of three conditions: a health message with language of compliance, a health message with a norm cue, and a control health message without either of these treatments. In order to test the hypotheses of this study, two samples were recruited. One was from King Saud University (KSU) students and the other sample was from University of Missouri (Mizzou) students. The results of this study led to conclude that cultural differences do exist, but the tools to theorize about these differences need to be developed and refined.

KEYWORDS

cultural contexts, psychological reactance, social norm, health crises, subjective norms, follow health policies

Introduction

The COVID-19 pandemic presents the opportunity to test Western theories in a global context- allowing theoretical advancements to theories that have been developed in a geo-political context that looks very little like the rest of the world (Henrich et al., 2010). The primary objective of this study is to test theories of communication about health crises and theories of persuasive health communication in non-Western contexts. This study contributes to the already considerable literature on COVID-19 in three ways. First, this study argues that socio-cultural differences will moderate the influence of communication interventions designed to enhance compliance with protective behaviors. Accordingly, this study explores how people differ in their behavioral intentions toward compliance with protective behaviors according to social differences on two crucial variables: collectivism and compliance. Second, this study utilizes the theory of planned behavior, and I expected this model to work in a novel socio-political context (Saudi Arabia). However, the external validity of the theory of planned behavior can be enhanced by testing it in a context that differs substantially in social, religious, political, and media culture compared to the Western societies in which it has been developed. Third, this study explores psychological reactance to gain a more precise understanding how

psychological reactance is contingent on cultural features of the United States that are present in substantially lower levels in Saudi Arabia. Saudi Arabia is an important point of comparison in part because the psychological characteristics that are present among Saudis are also applicable to populations in many other non-Western countries.

Research on health and political communication related to COVID-19 remains dominated by Western perspectives despite the fact that COVID-19 is a global disease that must be defeated everywhere before we are free of the virus anywhere. Accordingly, communication research needs to reflect global reality. Our recommendations about effective pandemic communication must be socially and culturally nuanced. This study opens the scope of research to include regimes that are non-Western. Further, as a communication scholar, I am on a mission to keep looking at the impact of COVID-19 on communications studies. This study offers new insights into how to messages motivate compliance with public health measures and how the effects of these messages may mutate when applied to societies at varying levels of compliance and collectivism. Therefore, this study establishes new insight for communication scholars who are interested in understanding authority, legitimacy, and compliance.

The West is a global outlier in that many Western societies are relatively mature democracies. Much less is known about behavioral intentions toward strict measures in non-Western countries. Since people in those countries are often obliged to comply, we cannot consider their behavior the same in terms of belief in health policies. Many societies are more compliance, which changes the predictions we would make about psychological reactance.

The West is also a global outlier because it is highly individualistic (Henrich et al., 2010). The Saudi context allows us to examine the integrated model in a highly collectivist society. This collectivism changes some of the predictions that we would make about the theory of planned behavior.

All fields of study have been engaged to address the COVID-19 pandemic. Notably, this includes the medical field, which has released recommendations such as wearing a mask and social distancing, and produced a vaccine in a shockingly short time. As such, the medical side has played its role in mitigating the impacts of COVID-19. The challenge now rests with communication professionals. We have the solutions to COVID-19, adopting them is a global communication challenge. Communication scholars can assist by increasing the adoption of the solutions developed in other fields; i.e. by increasing compliance with social distancing, wearing a mask, washing hands, and getting the vaccine. Such interventions rely on communication to motivate behavioral intentions to follow preventive behaviors building during a COVID-19's time. In response to that challenge, this paper contributes to the literature on persuasion and health campaigns.

Compliance

Compliance is another factor that characterizes the Saudi context. Its definition varies as change exhibits itself in the conceptualization of the idea over time (Feldman and Stenner, 1997). For purposes of this study, "Compliance as a general set of attitudes includes a preference for conformity, willingness to coercively enforce behavioral standards, punitiveness toward perceived enemies, and a strong

concern with hierarchy" (Costello et al., 2020). Exposure to threatening circumstances perceived as a response to insecurity and inadequate safety may cause increases in individuals' levels of acceptance compliance (Feldman and Stenner, 1997). Moreover, Jugert and Duckitt (2009) suggested that one's level of collective security motivation offers an estimate of responsiveness to threats of social confusion and injury, which causes a personal appeal for social control, and a desire for stability. As such, collective security motivation may illustrate the demands for commitment, social control, and firmness observed in people with high levels of compliance. As a result, it is expected that the outbreak of COVID-19, by provoking anxiety and fear, could lead to an outgrowth in compliance. Under these circumstances, people experience high levels of uncertainty, fear, and ambiguity around this pandemic and its effects throughout society (Hirsh et al., 2012).

The concept of compliance has proved to have a complicated relationship with the COVID-19 pandemic (Cepaluni et al., 2020). Different responses from different political regimes bore different results. Some territories high in compliance had a rapid response that allowed for an easier flattening of the curve with fewer deaths (Cepaluni et al., 2020; Prichard and Christman, 2020). Those that occupied the ideal position on the democracy scale responded poorly, leading to more deaths (Bochicchio et al., 2021). In this sense, regimes that have a high level of compliance showed more effectiveness than their democratic peers in COVID-19 pandemic management.

Planned behavior

Several theories have been suggested to explain various elements of human behavior. One of the most important of these theories this study utilizes is the theory of planned behavior (TPB) (Ajzen, 1985). It is a theory of human behavior that considers the effect of personal evaluations, perceived social pressure, and perceived control in forecasting the intention to do a particular activity (Ajzen, 1991). According to Young et al. (1991), Ajzen (1991), and Armitage and Conner (2001), TPB is an extension of the Theory of Reasoned Action (TRA) that includes a measure of perceived behavior and beliefs controls. Under the TPB, behaviors are usually controlled by voluntary mechanisms and are defined by behavior intentions (Young et al., 1991). Subsequently, behavior intention relies on social norms, attitudes, and perceived behavioral controls among humans (Rimer and Brewer, 2014; Young et al., 1991). In a brief, the TPB provides that motivations (intentions) and ability (perceived behavior control) are the most powerful predictors of human behavior (Ajzen, 1991) as opposed to background variables such as age and education, etc. but assumes that human qualities indirectly affect attitudes (Young et al., 1991). However, TPB provides that these three constructs (social norms, attitudes, and perceived behavioral controls) are the foundations constituent of human attitudes and hence serve as useful targets for intervention in behavioral changes. TBP can be used to understand human intentions, norms, and attitudes, which may allow us to predict and subsequently alter targeted behaviors in a population. In applying TPB model to predict human behaviors, Ajzen (2020) argues that behaviors must be understood with relation to the target, action, context in which it occurs, and the time frame. All of these elements have to correspond with the core of the TPB. This is called the compatibility (Ajzen, 1988).

People are more likely to use hand sanitizer if they believe it is simple (high perceived control), effective (positive attitude toward hand sanitizer), and that everyone else utilizes it (high perceived social pressure). People, on the other hand, maybe less inclined to keep 6 feet apart from others if they believe it is difficult to accomplish (poor perceived control), unproductive (negative attitude toward social distance), and that just a few other people do it (low perceived social pressure). Understanding how the three basic components of the TPB interact during the COVID-19 pandemic might provide significant information for public health organizations aiming to improve the number of individuals practicing preventive behaviors during this pandemic and in future infectious disease outbreaks. Ultimately, based on discussion above, several hypotheses are posited:

H1: Attitude toward health behaviors will be positively associated with intent to follow preventive health advice to prevent the prevalence of COVID-19.

H2: Subjective norm will be associated with more intent to follow preventive health advice to prevent the prevalence of COVID-19.

It is vital to note that the subjective norm element of the TPB is considered a social injunctive norm, as it addresses perceived social pressure from important individuals to engage in the behavior. Further, social injunctive norms represent perceptions of what important people accept or think one should do. However, these social injunctive norms encourage the behavior by demonstrating the possible social rewards and penalties for involvement or non-involvement in the behavior (White et al., 2009). In addition to subjective norms, some literature suggests people follow what they think others do, called descriptive norms. Descriptive norms indicate the perception of how others act. These norms identify the usual behavior and encourage it by offering insight into what practices may be efficient and appropriate (White et al., 2009). Injunctive and descriptive norms may usually work collaboratively, in which people assuming others will follow clearly placed guidelines. Mostly, descriptive and injunctive norms will benefit one another (Eriksson et al., 2015). So far, the descriptive and injunctive norms do not correspond to each other in certain cases. When it comes to COVID-19 prevention behaviors, this might include repetitive behaviors such as hand washing or the period that others commit to applying social distancing (Rudert and Janke, 2021). On the other hand, injunctive norms determine what should be done, beginning with implicit moral assumptions and progressing to explicitly announced rules. During the COVID-19 outbreak, two prominent examples of injunctive norms were hygiene and distance requirements imposed by the governments (Rudert and Janke, 2021). Currently, research studies are focusing on investigating the interrelationship between injunctive and descriptive norms and individuals' behavior during the COVID-19 pandemic, particularly their intent to comply. In addition, Irawan et al. (2021) claimed that descriptive norms positively impacted travel frequency during the COVID-19 pandemic. For example, individuals are unlikely to travel to meet their needs during the COVID-19 pandemic since they believe they are safe as other people react favorably to the virus. Additionally, previous studies found a relation between descriptive norms and compliance; the more individuals observe others following preventive behaviors, the more likely they are to commit to protective behaviors (Kuiper et al., 2020;

Rudert and Janke, 2021; Van Rooij et al., 2020). On the other hand, Reinders Folmer et al.'s (2020) findings revealed the factors that contributed to commitment during the COVID-19 pandemic. Their findings found that descriptive social norms had a lesser effect on commitment.

Additionally, norms are one of the dimensions on which this study focuses because norms can be different depending on cultural context and the population under inquiry (Yang, 2015). Thus, cultural differences need to be accounted for in the integrated model proposed here. First, because it is a global pandemic, solutions need to reach all types of societies. Yet most of the theoretical frameworks are derived from Western democracies. Second, Saudi culture is distinct from the Western societies that generated TBP on a variety of dimensions – perhaps most importantly on collectivism. These two reasons will be elaborated on in the following discussion.

My expectation is that the other elements of this theoretical model will be the same, however, it is possible that there are differences in the contexts that I do not anticipate, therefore, I ask the final research question:

RQ1: Will there be differences in any of the previous variables depending on the sample?

Saudi society as a collective society

Saudi Arabia presents an important test and a new cultural context in studying COVID where social relationships are highly regarded. Saudi society represents a new context because it tends to be more collectivist and has a “fairly homogeneous” culture (Idris, 2007). Americans tend to be both more individualistic and less collectivistic than other societies (Oyserman et al., 2002; Choi and Geistfeld, 2004), Saudis showed the opposite (Cassell and Blake, 2012). Collectivism is a cultural value for feeling duty to in-groups (Oyserman et al., 2002). Accordingly, Saudi Arabia's culture has political and social implications because the Muslim faith permeates all decisions and significantly influences policy legislation (Idris, 2007; Vassiliev, 2000).

Based on the above, social pressure (subjective norms) should be different in collectivist cultures, they should be stronger because there is a stronger desire to accommodate the desires of others in collectivist cultures. Thus, collectivism should moderate the effect of norms on behavioral intent and norms-focused messages should be more effective for people high in collectivism. Therefore, the following hypothesis is formulated:

H3: The effect of perceived norms will be larger in SA compared to the US.

H4: People in SA will report higher collectivism compared to people in the US.

H5: The effect of perceived norms will be larger for people higher in collectivism.

Additionally, to process the role of norms in influencing intentions of protective behaviors, we need to think about the ways that external stimuli such as message cues may impact these norms. Message cues can impact the adoption of healthy behaviors to contain the risks

(Champion and Skinner, 2008; Ranjit et al., 2017). Consequently, the change in a threat perception generated by such cues could lead people to adopt or disengage in a particular behavior (Ranjit et al., 2021). Given this expectation along with the fact that Saudi society is collectivist, norms will be more influential in SA, it is an important opportunity to influence behavior through messaging. Based on this discussion, several hypotheses are posited:

H6: People exposed to a message cuing subjective norms will be more likely to follow preventive health advice to prevent the prevalence of COVID-19, the effect will be through perceptions of subjective norms.

H7: The effect of norms cue will be larger for SA compared to the US.

Psychological reactance

Psychological Reactance Theory (PRT) is based on the primary assumption that individuals value the ability to choose among alternatives. According to Brehm (1966), this assumption results in individuals being motivated, whenever freedom is threatened or removed, to restore the freedom. Therefore, reactance occurs when individuals perceive that another person is trying to constrain their ability to choose among alternatives or inhibit their freedom. Tian et al. (2020) lists four elements essential to PRT: freedom, threat to freedom, reactance, and the restoration to freedom; as defined by (Brehm and Brehm, 2013).

The central aspect in defining PRT lies in the freedom of individuals relating to the concrete behavioral realities. Within this context, Wicklund (1974) stipulates that the possession of knowledge and the ability to exercise free behavior are the prerequisites for an individual to have freedom. Thus, the individual perceives this freedom to a point when it is interrupted through any force, it constitutes a threat. The threats to freedom encompass the factors and forces that make it potentially difficult for the individuals to exercise their freedom. Persuasive communication that utilizes messages which are explicit in their persuasive intent are likely to be perceived as a threat to freedom. Shen (2015) argues that the social influence relating to passing of messages and persuasion to shape or change responses constitutes a threat to freedom as well as the exposure to information that makes it difficult to make decisions on preferences. Reactance is the motivational state that is experienced by an individual in cases where their freedom is threatened. The magnitude of psychological reactance increases in relation to the importance of the threatened freedom and the number of freedoms threatened (Kohn and Barnes, 1977). When the perceived freedom of an individual is threatened, people are motivated to regain the freedom while preventing further loss of the freedom and this represents the fourth element which is the restoration of freedom (Tian et al., 2020; Quick, 2013).

Message features and reactance

The message framing in persuasion utilizes a language that explicitly attempts to limit one's autonomy, leading to greater freedom

threat. According to Rains and Turner (2007), the high freedom threatening language will increase the reactance due to increased freedom threat. Moreover, the provision of choice in persuasion messages has been shown to reduce reactance (Quick, 2012). Hence, individuals need to feel their behavioral freedoms are under threat. Threats to revoke or restrict their perceived freedoms will boost the motivation to regain that freedom, or may cause people to seek to confirm their autonomy and control of their attitudes.

Psychological reactance may help explain resistance to preventive behavioral intentions toward COVID 19. Despite the effectiveness of the behavioral recommendations in containing the spread, a greater number of individuals exhibited non-adherence to the measures (Ball and Wozniak, 2021). This may be attributed to the restrictive measures inhibiting people's freedoms (Kang et al., 2021). As an attempt to restore their freedoms in individual and social life, people may consider opposing the restrictions and messaging toward COVID-19 (Ball and Wozniak, 2021). Thus as the freedom threat increased, the reactance increased which in turn leading to lower levels of commitment in practices conducive to maintaining health and preventing (Ball and Wozniak, 2021).

Psychological reactance and compliance

This study takes the theory of Psychological Reactance into account since it is important especially because (1) in Western democracies high in individualism, compliance mandates have a high probability of generating reactance but (2) in compliance-oriented societies people are socialized to follow these mandates with little resistance. However, compliance has not been theorized in the context of health campaigns. In compliance-oriented societies, people are socialized to follow the dictates of the government. This socialization should reduce psychological reactance because people in compliance-oriented societies have been socialized to accept freedom-threatening messages. Hence, the socio-cultural factors suggest that people are trained to comply with this threat message, so psychological reactance will either be low or will not result in a backfire/boomerang effect. On the contrary, in the context of Western democracies, psychological reactance theory assumes that people will respond negatively to freedom threats and the message will backfire. As a result, people high in compliance are expected to show a low-level reactance. Conversely, people low in compliance are expected to show a high-level reactance because of their perceived penchant to challenge authority (Kohn and Barnes, 1977).

Therefore, several hypotheses are proposed:

H8: A compliance cue will increase psychological reactance in the US and therefore reduce intent to follow preventive health advice to prevent the prevalence of COVID-19.

H9: A compliance cue will increase intent to follow preventive health advice to prevent the prevalence of COVID-19 in SA context.

H10: A compliance cue will not increase psychological reactance in SA context.

In the following figure, I review the hypothesized theoretical framework of this study (Figure 1):

Methods

This study examines how using a message cue manipulated to induce greater subjective norm and psychological reactance will interact with the cultural value of collectivism and the psychological orientation of compliance to influence behavioral intentions to follow government-enforced health policies to contain COVID-19. In addition, this study examines the effect of attitudes, perceived threat, and outcome expectations on behavioral intentions to follow government-enforced health policies to contain COVID-19. A between subjects experiment was conducted with random assignment to one of three conditions: a health message with compliance language, a health message with a norm cue, and a control health message without either of these treatments.

To test the hypotheses raised previously, this experiment examines the influence of message cues on behavioral intentions. In particular, this study aims to empirically test whether using these norms and compliance cues affect behavioral intentions to follow government-enforced health policies to contain COVID-19 by increasing subjective norm or psychological reactance toward compliance with protective behaviors. In order to accomplish this, three experimental conditions were developed, including norms cue, compliance cue, and a control condition.

Sample

In order to test the hypotheses of this study, two samples were recruited. One was from King Saud University (KSU) students and the other sample was from University of Missouri (Mizzou) students. Both samples allow the theorized tests. Western individuals are higher in individualism and lower in compliance, thus, Mizzou students should possess these characteristics. On the other hand, collective individuals in non-Western societies are higher in collectivism and higher in compliance, therefore, KSU students are likely to significantly differ from Mizzou students on these dimensions. There were 168 participants from KSU in the initial sample. Following data cleaning, 139 responses were obtained. This sample had an average age of 20.92 ($SD = 2.26$), with more females ($n = 84, 60.4\%$) than males ($n = 55, 39.6\%$). Concerning the US

Sample, we obtained 151 participants from Mizzou students. Following data cleaning, 142 responses were obtained. This sample had an average age of 18.42 ($SD = 3.34$), with more females ($n = 78, 54.9\%$) than males ($n = 61, 43.0\%$), with 2.1% preferring not to say ($n = 3$).

Results

This section will discuss the results of analyses related to the core areas of this study. Table 1 presents the estimates of a multiple regression model to predict intent to engage in healthy COVID19 behaviors. Model 1 includes results from both sample (KSU students and Mizzou students). The overall model is significant $F(11, 267) = 61.74, p < 0.001$, the Adjusted R^2 indicates that the model's variables explain 70.6% of variations in intent to engage in COVID 19 healthy behaviors. Table 1 presents the standardized coefficient of each variable. Several predictors were significant at an alpha level of 0.05. A collinearity test was also performed to check for multiple correlations among the variables. Attitude, and subjective norm – perceptions (SND) had the highest variance inflation factor (VIF) scores were, ranging from 2.34 to 2.68. However, these values are still within the 4.0 threshold.

The first hypothesis, H_1 , predicted that attitude toward health behaviors would be associated with greater intent to follow preventive health advice to prevent the prevalence of COVID-19. As shown in Table 1, attitude significantly indicated behavioral intention. A one-unit increase in the attitude scale increases the intent to engage in health behavior by 0.14 ($se = 0.06$).

Hypothesis H_2 assumed that subjective norm (perceptions) is a positive predictor of intent to follow preventive health advice to prevent the prevalence of COVID-19. The regression (Table 1) showed a significant association between subjective norm (perceptions) and behavioral intention. The effect is that every unit increase in the subjective norm scale (perceptions) increases behavioral intent by 0.21 ($se = 0.05$), keeping other factors controlled. Model 1 in Table 1 indicates that intent to comply with subjective norm (desire) has a negative relationship while descriptive norm has a positive relationship with behavioral intent. Nonetheless, these relationships did not attain a statistical significance level.

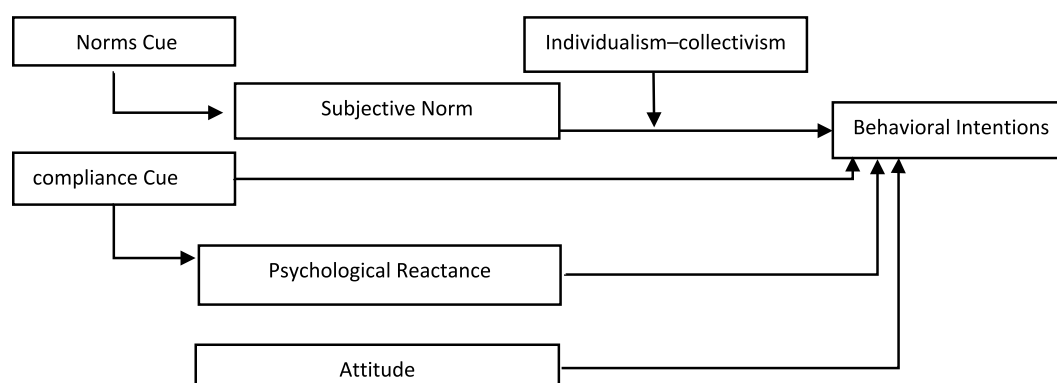


FIGURE 1
Hypothesized framework.

TABLE 1 Results for regression models predicting intent to engage in health COVID19 behavior.

	Model 1	Model 2 (USA)	Model 3 (SA)	Model 4 (Moderator)
Attitude	0.118*	0.044	0.177*	−0.023
Subjective norm_perceptions	0.187***	0.170***	0.152#	−0.045**
Subjective norm_desire	−0.010	0.025	−0.013	−0.039**
Descriptive norm	0.008	0.003	0.057	0.037
Country_SA	0.297***	-	-	
Adjusted R ²	0.706	0.72	0.410	
F	61.742	36.508	10.508	
df	11, 267	10, 130	10, 127	

Standardized coefficients reported, # $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Model 1, samples from the USA and Saudi Arabia; Model 2, samples from the USA; Model 3, samples from Saudi Arabia; Model 4, interaction effect of country (Saudi Arabia* Independent variable).

Finally, the regression model also identifies the country as a significant predictor of intent to follow preventive health advice to prevent the prevalence of COVID-19. After accounting for the effect of other variables, participants from Saudi Arabia have 1.01 higher behavioral intent than the reference country (United States). This effect can also be observed in the average score of behavioral intention in both countries. United State participants have a mean of 4.15 ($sd = 1.71$), and Saudi Arabia has an average of 5.87 ($sd = 1.19$). Having demonstrated that country plays a significant role in intention to engage in health COVID19 behavior, model 2 and 3 present the regression estimates of samples from the United States and Saudi Arabia, respectively.

Model 2 in Table 1 presents the regression model's estimates using sample from the United States only. The adjusted R^2 is 0.72. This propounds that the variables included in the model explain 72% of the variations on behavioral intent. The overall model attains a statistically significant level $F(10, 130) = 36.51, p < 0.001$.

Model 3 in Table 1 presents the regression model's estimates using samples from Saudi Arabia only. The adjusted R^2 is 0.41. This suggests that the variables included in the model explain 41% of the variations on behavioral intent. The overall model attains a statistically significant level $F(10, 127) = 10.51, p < 0.001$.

Considering all of that, the first research question asks: will there be differences in any of the previous variables depending on the sample. Since Model 1 highlights "country" as a significant predictor of behavioral intention to engage in health COVID-19 policies, Model 2 shows the regression weights for US samples, Model 3 presents the regression weights for Saudi Arabia samples, and the Model 4 reports the coefficient for the interaction term for each independent variable (identified in the row label) and a dummy-variable for country (0 = US, 1 = Saudi Arabia) on behavioral intention. The interaction effect between the country and the predictors shows the two countries' influence and how they behave toward COVID-19 preventative measures.

Only the effects of attitude and descriptive norms were not significantly influenced by country.

The effect of subjective norm (perceptions) effect on intent to engage in healthy COVID-19 is positive in both samples but significantly weaker in Saudi Arabia compared to the United States ($B = 0.33, se = 0.12, p < 0.01$). The effect of desire to comply with subjective norms is also smaller in Saudi Arabia ($B = 0.34, se = 0.13, p < 0.01$) than in the United States. Model 2 and Model 3 indicate that subjective norm (desire) has a negative effect on intent to engage in healthy COVID-19 in Saudi Arabia, but it is positive in the USA, though neither effect was statistically significant.

In hypothesis 3, I tested the moderating effect of the country in predicting behavioral intention using subjective norms as the primary predictor. I assumed that the impact of subjective norm (perception) will be more prominent in Saudi Arabia than in the United States. The effect of the subjective norms depends on the cultural context such that the effect was weaker in the KSU sample ($B = -0.34, se = 0.13, p < 0.01$). For students at Mizzou, the estimated effect of subjective norm was 0.43 ($se = 0.11, p < 0.001$), whereas for students at KSU, the estimate effect of subjective norm was 0.08 ($se = 0.08, p < 0.100$). This result does not supports this hypothesis as presented in Table 1. Therefore, it is concluded that subjective norm (perception) has a more significant effect on behavioral intention in the United States than in Saudi Arabia.

Hypothesis 4 predicted that people in Saudi Arabia would report higher collectivism than people in the US. Using independent samples t -test statistics, I obtained a significant difference in the rating of collectivism in the two countries ($t = 6.987, p < 0.001$). Participants from Saudi Arabia have rated their collectivism by almost one ranking higher than those from the US, with a mean difference of 0.76 ($se = 0.11$). Hence, the result supports my assumption.

Hypothesis 5 assumed that "the effect of subjective norms on intention to engage in healthy COVID-19 behaviors will be larger for people higher in collectivism." As shown in Table 1, the effect of the subjective norms on intent to engage in healthy COVID-19 behaviors is influenced by the collectivism factor. This effect is such that, for students with collectivism score of 3.67 or lower, the estimated effect of subjective norm was 0.73 ($se = 0.065, p < 0.001$), students with collectivism score of 4.5, the estimated effect of subjective norm was 0.63 ($se = 0.053, p < 0.001$) and students with collectivism score of 5.5 or higher, the estimated effect of subjective norm was 0.50 ($se = 0.072, p < 0.001$). The analysis shows that the effect of perceived norm on behavioral intention becomes smaller as the collectivism score increases, which contradict my hypothesis 5.

In hypothesis 6, I assumed that people exposed to norm cue message are more likely to follow preventive health advice to curb the prevalence of COVID-19 through the effect of perceptions of subjective norms (SND). I tested the direct impact of norm cue messages on subjective norms (SND) perceptions using a regression model. Although the relationship was positive, the influence of norm cue on perceptions of subjective norms (SND) did not achieve conventional levels of statistical significance. Further investigation indicates that after accounting for other theoretical factors, the association between norm cue and the behavioral intention was not distinguishable from zero. Hypothesis 6 was not supported. The analysis revealed that though the norm cue successfully communicated the information, it did not change people's perceptions of what people at their university want them to do.

I further tested the interaction effect of norm cue and country on the subjective norm (perception). The effect of norms cue is not dependent on the cultural context. Although the effect was stronger among KSU samples ($B = 0.57$, $se = 0.34$, $p < 0.1$). The estimated effect of norm cue was 0.26 ($se = 0.24$, $p < 0.3$) for Mizzou students, and the estimated effect of norm cue was 0.84 ($se = 0.24$, $p < 0.0001$) for students at KSU. The relationship did not meet conventional levels of statistical significance but was approaching the 0.05 threshold. In other words, the result suggest that norm cue is effective for predicting intent to engage in healthy COVID-19 behaviors in Saudi Arabia but not effective in the US.

The moderating effect of the country on norm cue in predicting behavioral intention is similar to that of the subjective norm. The impact of norm cue on behavioral intention was higher in Saudi Arabia by 0.289 ($se = 0.372$) than those in the United States. However, this interaction effect did not achieve statistical significance. Hence, I conclude that there is insufficient evidence to support hypothesis 7 that assumed that the effect of norms cue will be larger for SA compared to the US.

Hypothesis 8 presumed that compliance cue would increase psychological reactance in the US and reduce intent to follow preventive health advice to prevent the prevalence of COVID-19. Psychological reactance is measured using three instruments – Perceived freedom of threat (PFT), reactance (anger), and Counter-argument. First, I tested the statistical relationship between compliance cue and psychological reactance. Anger and counter arguing were not affected by the compliance cue. However, perceived freedom threat was influenced by the compliance cue. The relationship is such that those who received the compliance cue expressed 0.491 ($se = 0.242$, $p < 0.05$) greater freedom threat.

Since perceived freedom threat was the only facet of psychological reactance affected by the compliance cue, it was used to examine the effect of psychological reactance further. To test whether the compliance prime indirectly reduced intent to engage in healthy behaviors by increasing freedom threat, the product of effects was calculated in 5000 bootstrapped resamples using the Process macro for SPSS (Hayes, 2022). The confidence interval of this product term did not include zero (LLCI = -0.358 , ULCI = -0.002). Thus, the hypothesis was supported; the compliance cue reduced intent to engage in healthy behaviors by increasing perceptions of freedom threat. No direct effect was observed between compliance cue and intention to engage in healthy COVID-19 measures. However, compliance cue influence perceived freedom of threat ($B = 0.59$, $se = 0.315$, $p < 0.1$) which inturn negatively influence behavioral intent ($B = -0.36$, $se = 0.05$, $p < 0.0001$). The analysis supports hypothesis 13 that compliance cue will increase psychological reactance, reducing intent to follow preventive health advice to prevent the prevalence of COVID-19.

To check the potential moderating influence of the country in the result of hypothesis 8, I included country as a moderator. The effect of the compliance cue did not depend on the country. Although the effect of compliance cue is lower in KSU sample compared to the Mizzou sample, as indicated by a negative coefficient for the interaction term ($B = -0.25$, $se = 0.37$, $p < 0.5$), the interaction did not achieve statistical significance.

The effect of cultural context did not matter in both perceived freedom of threat and compliance cue. I conclude that compliance cue increased freedom threat and freedom threat reduces intention to

comply with preventive COVID-19 advice in both Saudi Arabia and the United States. The result of the interaction effects does not support hypotheses 9 and 10; in which hypotheses 9 assumed that a compliance cue will increase intent to follow preventive health advice to prevent the prevalence of COVID-19 in SA context while hypotheses 10 assumed that a compliance cue will not increase psychological reactance in SA context.

Discussion

This study contributes to three primary areas; the influence of socio-cultural differences on communication interventions designed to enhance compliance with protective behaviors, testing the external validity of the theory of planned behavior in a context that differs substantially in social, religious, political, and media culture compared to the Western societies in which it has been developed, and understanding how psychological reactance is contingent on cultural features of the United States that are present in substantially lower levels in Saudi Arabia.

I argued that psychological reactance is content-dependent in that the people in Saudi Arabia would not demonstrate the same negative reaction to freedom threat compared to people in the United States. Contrary to this expectation, the compliance cue caused psychological reactance in both samples (Yousaf et al., 2022). The effect of the compliance cue on behavioral intent was mediated by psychological reactance such that people who received the compliance cue perceived more freedom threat and subsequently were less willing to comply with healthy COVID-19 behaviors. This suggests that psychological reactance is a much stronger theory than I expected. The expectation that the predictions of psychological reactance would be confined to Western democracies was invalidated. The results of this study instead suggest that the desire to regain freedom from coercive messages is culturally independent and, given the stark differences in compliance between the United States and Saudi Arabia, the predictions of psychological reactance might even be universal.

The expansiveness of psychological reactance is the first theoretical implication of this study. This finding also has practical implications. There are many societies where compliance strategies are adopted to create compliance. However, though these societies may be able to force compliance on some by using state power, other citizens may seek to evade the rules where possible to regain their freedom. Furthermore, one of the arguments that I make is that COVID-19 is a global pandemic. Given the finding that psychological reactance was not moderated by cultural context, it could be risky to rely on compliance strategies because it reduces people's willingness to comply in a variety of socio-political contexts.

A second contribution of this study relates to the norm cue. This second contribution comes from the tests of norm cue in both hypotheses 6 and 7. It is intriguing to find that the norms strategies did not affect the intention to comply. Interestingly, participants recognized that the researcher was telling them to believe that other students at their university wanted them to comply with the healthy behaviors. However, they simply rejected these messages, choosing to trust their pre-existing norm perceptions over the messages delivered in the study. This study suggests that social norm manipulations may not be able to break through peoples' actual perceptions of what members of their community think. This study proposes that

norm-focused messaging cues may not be a profitable investment to enhance behavioral intention. People commonly have a presumed opinion of what people want them to do. Influencing such opinions might be somewhat unachievable. This has theoretical implications in terms of people's perceptions of social norms – perhaps they are not really subject to communication influence. Also, they have public health implications because if norms-based messages are designed to get people to adopt healthy behaviors, they might not be able to convince them.

Third, both for country and collectivism, subjective norms were more influential for people lower in collectivism (higher in individualism) and people in the Mizzou sample. This third contribution comes from the tests of both country and collectivism in hypotheses 4 and 5. This should change the way we think about subjective norms and collectivism. That is because people in collectivist cultures such as Saudi Arabia are more likely to behave in a way that benefits the greater good whether there is social pressure or not, so they do not need the extra influence of subjective norms to motivate them to comply. This may be attributed to the nature of the Saudi community as it is a religious community. The notion of what is good for the collective is established by the religious community and the religious authority, so public opinion or peer pressure plays a smaller role in influencing people's perceptions of the collective good. Moreover, religious belief is an integrated structure; it includes not only performing ritual worship, but also engaging in other individuals' activities as well as their attitudes and behaviors (Gao et al., 2023; Gayatri et al., 2011; Muhamad and Mizerski, 2010).

In other words, religiosity directly influences people's subjective norms, and COVID-19 preventive behavioral intentions are indirectly influenced by subjective norms (Kesgin et al., 2022). Consequently, Reisinger and Moufakkir (2015) argue that there is a need to realize Islamic contexts in order to be aware of their deep and comprehensive influence. Hence, considering religious impacts in current models and frameworks is seen as a vital direction for researchers to effectively understand behavior.

Instead, subjective norms are more important in highly individualistic cultures because the “what do people think of me” reflection creates an individualistic incentive (wanting to be liked) to comply. In collectivist societies such as Saudi Arabia, the need for this individualistic incentive is not as great, so subjective norms are less influential.

Fourth, cultural differences (collectivism and compliance), are one of the elements present in this study's integrated model. This fourth contribution comes from the tests of cultural differences in hypotheses 5 and 9. The assumption was that there will be many differences caused by cultural differences, however, most observed differences did not correspond to the hypotheses derived from work surrounding compliance and collectivism. However, most of the differences were in other parts of the TPB and were not explained by either compliance or collectivism.

Furthermore, the effect of subjective norm (perceptions) effect on intent to engage in healthy COVID-19 is positive in both samples but significantly weaker in Saudi Arabia compared to the United States as indicated in the results of the second hypothesis.

Again, this may be related to trust in government. Citizens in non-Western countries are raised to trust the government as part of an intellectual ideology. Thus, they outsource many critical tasks to the government; instead of self-efficacy, they find that the government's

efficacy is more paramount. Such belief in the government's efficiency will result in people who endeavor to organize their actions, aid in the reduction of confusion in a dynamic environment, and promote social cohesion (Warren et al., 2021). Therefore, citizens accosted with a trust decision, including a particular proposal, would concentrate on a limited number of behavior and characteristics (Levi, 2003). This is a facet of more compliance societies that may interact with the TPB, but not once that was engaged by my operational definition of compliance in this study. Thus, future work comparing TPB in Western democracies vs. more compliant political cultures should better theorize the many ways the centralization of authority influences the decision-making of citizens.

Of all parts of the model, only the effects of attitude and descriptive norms were not significantly influenced by country. This suggests that, though most elements of each theory were generally supported in each country, the key predictions were better supported in the United States. It is likely that there are some socio-cultural factors that can be theorized to explain why the TPB was a weaker model in Saudi Arabia. Further, consider the difference in R², which is only 41% in SA and 72% in the US. Consequently, the models performed much better in the US than in SA. This could be due to the increased compliance in SA. Moreover, as they live in centralized societies, they delegate difficult decision-making and worrying to the government and religious authorities. In this vein, for example, people in the US may spend significant time worrying about whether it is safe to stop wearing masks or start going to restaurants again, whereas people in SA delegate that responsibility to the governmental and religious authorities. In essence, a healthy portion of the variance in SA is explained by “this is what was decided.”

To conclude, it may be useful to develop theories to explain what is socially and culturally different between different contexts. At this point, a major direction for future research is generated; what does explain these differences observed in this study. This illustrates that we need more theories of why societies respond differently to health communication. The Western theories, do not work as well in SA but the reasons tested here- compliance and collectivism, are not the best explanations as collectivism and compliance do not provide enough basis to justify the differences between the countries. Therefore, we need better cross-cultural theories.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the [patients/ participants OR patients/participants legal guardian/next of kin] was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

HA: Writing – original draft, Writing – review & editing.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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