The Effects of Perceived Threat and Efficacy on College Students' Social Distancing Behavior During the COVID-19 Pandemic

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Abstract

A study was conducted to determine the impact of perceived threat and efficacy on college students' social distancing behavior during COVID-19. Guided by the extended parallel process model (EPPM), this longitudinal study included 164 participants who completed a survey at two points in time. Results were consistent with previous theory and research for all danger control hypotheses (i.e., perceived threat predicted fear, fear and self-efficacy predicted intention, and intention predicted future behavior). For fear control, however, results were inconsistent with EPPM predictions, but consistent with previous research (i.e., fear was either unrelated or inversely related to fear control, and efficacy was inversely related to fear control). Overall, the EPPM constructs explained 69% of the variance in intention, 64% of the variance in behavior, 55% of the variance in defensive avoidance, and 20% of the variance in message derogation. The theoretical and practical insights and implications of these findings are discussed.

Keywords: extended parallel process model (EPPM), COVID-19, coronavirus, danger control, fear control

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The 2019 novel coronavirus (COVID-19) is an infectious disease emerged in December 2019 in China. The virus spread rapidly within China and then internationally. The World Health Organization (WHO) declared COVID-19 a global pandemic on March 11, 2020 and the U.S. declared COVID-19 a national emergency on March 13, 2020 (CNN Editorial Research, 2020). As of February 7, 2021, there were over 106 million confirmed cases of COVID-19 and over 2.31 million deaths globally, including over 26 million cases and 463,000 deaths in the U.S. (Johns Hopkins University, 2021). Recent studies have estimated the reproductive rate of the virus (Ro) to be 3.28, meaning one infected person on average will pass the disease to 3 other people or more (Australian Government Department of Health, 2020). This places population condensed areas such as college campuses at greater risk of COVID-19. To illustrate, as of December 11, 2020, more than 397,000 cases have been confirmed from 1,800 colleges across the U.S. (New York Times, 2020).

Many U.S. colleges transitioned from in-person to online classes around March 2020 when the U.S. government issued social distance guidelines. When these guidelines were lifted during summer 2020, many U.S. colleges and universities resumed in-person instruction. As of October 1, 2020, about 48% of U.S. colleges and universities were either fully in-person or combining in-person and online instructions (Chronicle of Higher Education, 2020). As a result of reopening, cases spiked at universities nationwide. Between late July and December 2020, 390,000 new cases were reported from universities and colleges (The New York Times, 2020). Until the vaccine is widely available, the best and only way to prevent getting COVID-19 is to avoid exposure (Centers for Disease Control and Prevention, 2020B). How college students perceive of COVID-19 and what they do to protect themselves becomes an important issue. Guided by the extended parallel process model, this study aims to understand the impact of perceived threat and efficacy on college students' social distancing behavior during COVID-19.

The Extended Parallel Process Model

The extended parallel process model (EPPM) (Witte, 1992) focuses on the relationship between perceived threat and efficacy and message acceptance and rejection. Perceived threat is composed of an individual's perceptions of both *susceptibility* (i.e., it is possible that I will get COVID-19) and *severity* (i.e., COVID-19 is a serious health problem). Perceived efficacy is comprised of an individual's perceptions of both *response-efficacy* (i.e., social distancing is an effective way to prevent the spread of COVID-19) and *self-efficacy* (i.e., social distancing is easy). According to the EPPM, different combinations of perceived threat and efficacy lead to adaptive (i.e., danger control) or maladaptive (i.e., fear control) responses.

Danger Control

To illustrate, if a person believes (1) that COVID-19 represents a personally relevant and serious problem (i.e., high threat), and (2) that social distancing is an effective and easy way to reduce the threat (i.e., high efficacy), then he or she should engage in danger control. In other words, when both perceived threat and perceived efficacy are high, a person should experience greater protection motivation (i.e., intention) and ultimately adaptive changes (i.e., behavior). A considerable amount of research has yielded fairly consistent results regarding the danger control portion of the EPPM. To illustrate, various meta-analyses indicate that threat is positively related to fear (Witte & Allen, 2000), that fear is positively related to intention, (Sheeran et al., 2015; Witte & Allen, 2000), and that intention is positively related to behavior (Alberracin et al., 2001; Webb & Sheeran, 2006).

However, Stevenson et al. (2006) note that, “despite its considerable contribution to the health communication literature… we have yet to see a test of the EPPM as an omnibus structural model assessing the relationship between variables” (p. 162). Since then, relatively few studies have tested the EPPM using structural equation modeling (SEM) (e.g., Birmingham et al., 2015; De Meulenaer et al., 2015; Ort & Fahr, 2018). Further, only one of these studies used a longitudinal design to predict and explain *future* behavior (Birmingham et al., 2015). Thus, the first goal of this study to provide an omnibus test of the danger control portion of the EPPM using SEM and a longitudinal research design to predict and explain intentions and *future* behavior. With this in mind, the following hypotheses are advanced (see Figure 1):

H_1: Perceived threat (severity × susceptibility) will be positively related to fear.

H_2: Fear will be positively related to intention.

H_3: Perceived efficacy (self-efficacy × response efficacy) will be positively related to intention.

H_4: Intention will be positively related to *future* behavior.

Fear Control

Conversely, if an individual believes (1) that COVID-19 represents a personally relevant and serious problem (i.e., high threat), but (2) that social distancing is not an effective or easy way to reduce the threat (i.e., low efficacy), then he or she should engage in fear control. Put differently, “when individuals see no efficacious means of eliminating danger, they turn to the defensive reactions as a means of reducing their fear” (Dillard et al., 2018, p. 974). Two commonly studied methods of fear control are defensive avoidance and message derogation (Dillard et al., 2018; Popova, 2012; Witte, 1994, 1996).

Defensive avoidance involves conscious efforts to ignore or not think about an issue or message. Examples of defensive avoidance might include closing a webpage, ignoring a conversation, or changing the channel to prevent exposure to information about COVID-19. *Message derogation* involves criticizing the message or the source of the message. For example, an individual might believe that a message exaggerates the threat posed by COVID-19 or that the sources are deliberately trying to manipulate his or her feelings. Message derogation is a form of counterarguing (Jacks & Cameron, 2003), contesting (Dillard et al., 2018; Fransen et al., 2015), or denial (van't Riet & Ruiter, 2013). The ultimate goal of both defensive avoidance and message derogation are the same: to reduce fear when perceived threat is high and perceived efficacy is low. Defensive avoidance does so by ignoring the message, while message derogation does so by counterarguing against it. Notably, Dillard et al. (2018) found that individuals often rely on multiple types of fear control when faced with threatening messages. Nonetheless, most EPPM studies either do not include fear control or focus on a single fear control outcome. This study, by contrast, will focus on both defensive avoidance and message derogation.

Far less research has focused on the fear control portion of the EPPM, and when defensive avoidance is studied results are often inconsistent with EPPM predictions (Dillard et al., 2018; Papova, 2012; Witte & Allen, 2000). For example, the EPPM predicts that "fear causes maladaptive responses" (Witte, 1992, p. 343). However, while De Meulenaer et al. (2015) did find a significant positive relationship between fear and message derogation, both Birmingham et al. (2015) and Yang and Kahlor (2012) report significant negative relationships between fear and defensive avoidance. These inconsistencies are in line with Papova's (2012) narrative review of 29 EPPM studies. More specifically, of the seven studies that tested the proposition that fear would causes maladaptive responses, two supported, three provided mixed support for, and two contradicted this prediction.

Also, for example, the EPPM predicts that "cognitions about efficacy are unrelated to maladaptive responses" (Witte, 1992, p. 344). Yet, De Meulenaer et al. (2015) report a significant negative relationship between efficacy and message derogation, and Yang and Kahlor (2012) report a significant negative relationship between efficacy and defensive avoidance. Again, these results are in line with Papova's (2012) narrative review. More specifically, of the 12 studies that tested the proposition that efficacy would be unrelated to maladaptive responses, three supported, six provided mixed support for, and four contradicted this prediction. Thus, the second goal of this study is to provide an omnibus test of the fear control portion of the EPPM using SEM with two different types of fear control (i.e., defensive avoidance and message derogation). With this in mind, the following research questions are advanced (see Figure 1):

$RQ_{1A\text{-}B}$: What is the relationship between fear and (A) defensive avoidance and (B) message derogation?

$RQ_{2A\text{-}B}$: What is the relationship between perceived efficacy (self-efficacy × response efficacy) and (A) defensive avoidance and (C) message derogation?

In sum, this study adds to the literature by (1) providing an omnibus test of the EPPM using SEM, (2) using a longitudinal research design to predict and explain intention and *future* behavior (i.e., danger control), and (3) focusing on both defensive avoidance and message derogation (i.e., two different types of fear control).

Method

Participants

Undergraduate students enrolled in five communication classes at a large southwestern university were invited to participate in this longitudinal study. Two-hundred and eighty-four participants completed the Time 1 survey; of which 164 (58.1%) also completed the Time 2 survey. Therefore, the hypotheses will be tested, and the research questions will be answered using data from the 164 participants who completed the survey at both points in time. The final sample was 48.2% male, 51.2% female, and 0.6% other, with a mean age of 20.84 (*SD* = 2.03). The sample was 68.3% white, 9.8% Asian, 5.5% black or African American, 2.4% American Indian, 5.1% other. Finally, 20.6% of the sample identified as Hispanic or Latino/a.

Given that only participants who responded to the survey at both times were included in this study, non-response analysis was conducted to see if there were any differences between those who did and did not respond to the Time 2 survey for any of the variables under investigation using the Time 1 data. Independent sample *t*-tests revealed no differences for susceptibility, fear, self-efficacy, response-efficacy, defensive avoidance, or message derogation. However, for severity ($t = -2.49$, $df = 281$, $p < .05$) and intention ($t = -2.65$, $df = 279$, $p < .01$), participants who responded to the both surveys scored higher than participants who responded to just the Time 1 survey.

Instrumentation

A detailed discussion of each measure follows, and means, standard deviations, and Cronbach's alphas for all variables are presented in Table 1. All variables were measured at Time 1, except for behavior which was measured 30 days later at Time 2.

Perceived threat and perceived efficacy. All threat and efficacy measures were adapted from the Witte et al.'s (1996) Risk Behavior Diagnostic Scale (RBDS) and utilized five-point Likert-type items (i.e., "strongly disagree" to "strongly agree"). *Perceived severity* (e.g., "the coronavirus can lead to harmful health problems"), *perceived susceptibility* (e.g., "it is possible that I will get the coronavirus"), and *perceived response efficacy* (e.g., "social distancing can decrease my chances of getting the coronavirus."), and *perceived self-efficacy* (e.g., "I know how to practice social distancing") were each assessed using three items.

Existing theory and research suggest that perceived severity and perceived susceptibility do not work independently; they should interact (e.g., Witte, 1992; Sheeran et al., 2014). That is, "no matter how severe an outcome might be, it would be irrational to expend effort to prevent the outcome if it has no chance of occurring. And it would be irrational to take precautions if the outcome is not undesirable, regardless of its likelihood" (Weinstein, 2000, p. 65). Thus, in this study we operationalized perceived threat as the product of perceived severity and susceptibility. Similarly, for perceived self-efficacy and response efficacy, no matter how easy it might be to perform a behavior (high self-efficacy), why expend effort if it is ineffective (low response-efficacy), or vice versa? Therefore, perceived efficacy was operationalized as the product of perceived self-efficacy and response efficacy.

Fear. *Fear* was measured using three items (i.e., "fearful," "anxious," and "scared") adapted from Witte (1994). Participants were asked to rate how the information they received online about the coronavirus made them feel on a five-point scale ranging from "none of this feeling" to "a great deal of this feeling." [1]

Danger control (i.e., social distancing intention and behavior). The intention and behavior measures were developed based on procedures outlined in Fishbein and Ajzen (2010) and Witte et al. (1996). Specifically, *intention* to engage in social distancing was assessed using two five-point Likert-type (i.e., "in the *next* 30 days, how often will you try to avoid public places, such as stores and restaurants, because of the coronavirus?" and "in the *next* 30 days, how often will you try to avoid public gatherings, such as with family and friends, because of the coronavirus?”). Further, social distancing *behavior* was measured using two five-point Likert-type items (i.e., “in the *past* 30 days, how often have you avoided public places, such as stores and restaurants, because of the coronavirus?” and “in the past 30 days, how often have you avoided public gatherings, such as with family and friends, because of the coronavirus?”). Response categories for both sets of items ranged from “never” to “very often.”

Fear control (i.e., defensive avoidance and message derogation). The defensive avoidance and message derogation items were based on those used by Witte et al. (1996). Specifically, defensive avoidance (e.g., “when the topic of coronavirus comes up online, I’m likely to tune it out”) and message derogation (e.g., “the information provided about the coronavirus online is exaggerated”) were each assessed via three five-point Likert items ranging from “strongly disagree” to “strongly agree.”

Linking questions. To link participants’ Time 1 and Time 2 responses, we created a unique code for each participant. This code was created using the answers to the following questions: (1) “what day of the month were you born” (response categories ranged from 01 to 31), and (2) “what are the last two digits of your phone number” (response categories ranged from 00-99). In the few cases where there were identical codes for multiple participants, responses to questions regarding gender, age, instructor, or first letter of the participants’ first name were used to match participants’ responses.

Procedures

Data were collected at two points in time using Qualtrics Survey Software. Participants received a small amount of extra credit for each survey they completed. All procedures were approved by the sponsoring university’s institutional review board. Time 1 data were collected between April 2 and April 7, 2020, and Time 2 data were collected between May 1 and May 5,

2020. To put these dates in perspective, data collection began shortly after the World Health Organization declared COVID-19 a pandemic on March 11, 2020 and the U.S. declared COVID-19 a national emergency on March 13, 2020 (CNN Editorial Research, 2020). Further, Time 1 data collection took place shortly after the U.S. established national social distancing guidelines on March 16, 2020, and Time 2 data collection took place shortly after national social distancing guidelines expired on April 30, 2020 (Foster & Mundell, 2020).

Data Analytic Plan

Structural equation modeling (SEM) will be used to assess the data fit to the proposed theoretical model using the "lavaan" package (Rosseel, 2012) in R (RStudio Team, 2020). We follow a two-step procedure by first specifying the measurement models through confirmatory factor analysis and then completing the estimation of structural models (Kline, 2016). Full Information Maximum Likelihood (FIML) will be used to address missing data (Enders, 2010). The following fit indices are used to evaluate model fit: the $\chi2/df$ ratio, the comparative fit indices (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). An acceptably fit model must meet the following criteria: the $\chi2/df$ ratio ≤ 5, CFI $\geq .90$, RMSEA $\leq .08$, and SRMR $\leq .08$ (Hu & Bentler, 1999; Kline, 2016). Fit indices of the measurement models and final structural models will be reported in Figure 2.

Results

The confirmatory factor analysis showed that the measurement model fit the data well ($\chi2/df = 1.57$, CFI=.97, RMSEA = .06, SRMR =.05). The final structural model also demonstrated a good fit to the data ($\chi2/df = 1.75$, CFI=.96, RMSEA = .07, SRMR =.06). Path coefficients of the structural model are reported in Figure 2. Overall, the EPPM constructs explained 69% of the variance in intention, 64% of the variance in behavior, 55% of the variance in defensive avoidance, and 20% of the variance in message derogation.

Hypothesis 1 stated that perceived threat would be positively related to fear. As expected, perceived threat was significantly and positively associated with fear ($\beta = .07$, $p < .001$). Therefore, hypothesis 1 was supported. Hypothesis 2 stated that fear would be positively related to intention. Results showed that fear was significantly and positively associated with intention ($\beta = .20$, $p < .001$). Therefore, hypothesis 2 was supported. Hypothesis 3 stated that perceived efficacy would be positively related to intention. Results showed that perceived efficacy was significantly and positively associated with intention ($\beta = .10$, $p < .001$). Therefore, hypothesis 3 was supported. Hypothesis 4 started that intention will be positively related to behavior. Results showed that intention was significantly and positively associated with *future* behavior ($\beta = .88$, $p < .001$). Therefore, hypothesis 4 was supported.

We also asked two research questions about fear control. Specifically, Research Question 1 asked about the relationships between fear and (A) defensive avoidance and (B) message derogation. Results showed that fear was significantly and negatively related to defensive avoidance ($\beta = -.15$, $p < .05$). However, fear did not have any significant association with message derogation ($\beta = -.13$, $p =$ n.s.). Research Question 2 asked about the relationships between perceived efficacy and (A) defensive avoidance and (B) message derogation. It was found that perceived efficacy was significantly and negatively related to both defensive avoidance ($\beta = -.05$, $p < .001$) and message derogation ($\beta = -.05$, $p < .01$).

Discussion

Guided by the EPPM, this study assessed the relationships between perceived threat and efficacy and various danger control and fear control processes. We advanced four hypotheses about danger control, all of which were supported. Specifically, perceived threat was positively related to fear, fear and efficacy were positively related to intention, and intention was positively related to *future* behavior. Further, the EPPM constructs explained 69% of the variance in college students' social distancing intention and 64% of the variance in their social distancing behavior. In short, the EPPM constructs appear to do an excellent job explaining the danger control process.

Given existing conflicts between what the EPPM says should happen (Witte, 1992) and what research suggests actually happens (e.g., Birmingham et al., 2015; De Meulenaer et al., 2015; Yang & Kahlor, 2012), we also advanced two sets of research questions regarding the fear control process. More specifically, we asked about the relationships between fear and defensive avoidance and message derogation (which the EPPM suggests should be positive), and the relationship between efficacy and defensive avoidance and message derogation (which the EPPM suggests should be unrelated). In all cases results were inconsistent with EPPM predictions. Further, in one instance (i.e., for the fear-defensive avoidance relationship) the opposite pattern emerged as the relationship was significant and negative. Thus, our study provides further evidence that the EPPM variables do an inadequate job explaining the fear control process, suggesting additional refinements are needed for this portion of the theory.

One possible explanation for this is that some health communication messages are not easily avoided or dismissed (Birmingham et el., 2015). To illustrate, at the time data collection took place, people were being bombarded with messages about COVID-19 and social distancing (making it perhaps the largest naturally occurring fear appeal in recent history). The sheer amount of information available and the magnitude of the threat may have made it more difficult for people to avoid ($M = 2.66$) or discount ($M = 3.09$) COVID-19 warnings and recommendations, especially when the recommendations were seen as easy ($M = 3.99$) and effective ($M = 4.17$). Put differently, the EPPM may be more or less effective at predicting fear control response under different circumstances. To our knowledge, this possibility has not been tested. However, recent meta-analytic results indicate that high threat messages are more effective at predicting danger control responses under certain circumstances, such as for one-time versus repeated behaviors, for detection versus prevention behaviors, and for immediate versus distal threats (Tannenbaum et al. 2015; Sheeran et al., 2014). Additional research is needed to determine if these or similar moderators might help explain the inconsistent findings for fear control responses.

In tandem, these results highlight the importance of focusing on efficacy in any COVID-19 messaging. It is well established that high-threat, high-efficacy messages encourage danger control processing (Sheeran et al., 2014; Tannenbaum et al., 2015; Witte & Allen, 2000). But, more recent research, including this study, suggests efficacy also discourages fear control processing (e.g., Birmingham et al., 2015; Yang & Kahlor, 2012). In short, efficacy appears to play a broader role in message processing and acceptance than the EPPM suggests.

Finally, until a safe and effective vaccine becomes widely available, social distancing remains one of the best defenses against COVID-19. These results suggest that the plethora of messages focusing on perceived threat of COVID-19 and efficacy of social distancing appear to be having some positive impact on social distancing behavior ($M = 4.09$). And, while this study focused on social distancing, other researchers report similar results for a variety of vaccine-related intention and behaviors (e.g., Bennett et al., 2012; Guidry et al., 2019; Ort & Fahr, 2018; Krieger et al., 2011; Krieger & Sarge, 2013). Thus, it is quite possible that these results can also inform effective health risk messages designed to promote a COVID-19 vaccine once available.

Practical Application

Results from this study indicate that perceived threat and perceived efficacy (1) encourage adaptive danger control responses such as social distancing behavior and (2) discourage maladaptive fear control responses such as defensive avoidance and message derogation. This suggests that changing or maintaining perceptions of severity, susceptibility, self-efficacy, and response efficacy represent promising strategies for promoting social distancing behavior among college students. A number of practical suggestions for increasing perceived threat and efficacy for this topic and intended audience come readily to mind. For example, colleges and universities might focus on how contracting COVID-19 impacts college students physically, mentally, socially, financially, or academically. Alternatively, they might focus on how failing to prevent the spread of COVID-19 might impact one's classmates, families, or society as a whole. In terms of perceived efficacy, the Centers for Disease Control and Prevention (2020A) provides a number of back-to-college tips for protecting yourself from COVID-19. Examples include eating outdoors or taking food home rather than eating in the cafeteria, taking online classes if they meet your educational needs, and skipping seats or rows to create physical distance between students during in-person classes. Colleges and universities can highlight how these, and related strategies are both effective and easy to perform. Unfortunately, the present results do not speak directly to which of these strategies would be most effective for this topic and intended audience, which underscores the need for even more research in this area.

Strengths and Limitations

This study benefits from some notable strengths. First, it assessed both danger control and fear control outcomes, which is fairly uncommon in EPPM related research (Popova, 2012; Witte & Allen, 2000). Second, it had a longitudinal research design that measured threat, fear, efficacy, intention, defensive avoidance, and message derogation at Time 1, and *future* behavior 30 days later at Time 2. Again, this is relatively uncommon for research incorporating the EPPM (or related theories), which tend to rely heavily on cross-sectional designs and use attitude and intention (i.e., not future behavior) as the key outcome variables (Albarracin et al., 2001; Peters et al., 2013; Sheeran et al., 2014; Tannenbaum et al., 2015; Witte & Allen, 2000). Third, measures were developed using established procedures outlined by Witte et al. (1996) and Fishbein and Ajzen (2010), and reliability estimates were generally in the very good to excellent range. Fourth, it presents practically important information regarding some of the key factors that influence social distancing intention and behavior.

Finally, four potential limitations are also worth noting. First, given that our measures were adapted from established measures (Witte et al., 1996) and using established procedures (Ajzen & Fishbein, 2010), it is unclear why the alpha for social distancing self-efficacy was lower (i.e., $\alpha = .65$). A second potential limitation is attrition (i.e., 165, or 58.1%, of participants completed the survey at both points in time). Fortunately, our non-response response analysis results suggest those who did and did not respond to the survey at both points in time were fairly similar. Further, given that these levels of attrition are common in longitudinal studies, we made sure to start with a sample that was large enough to lead to a dataset from which meaningful conclusions could still be drawn (Schreiber et al., 2006). Third, our results are based on a convenience sample of college students, potentially limiting their generalizability. However, Yang (2012) notes that infectious diseases such as COVID-19 have a greater potential to spread in the high-density living environment on college campuses. Indeed, as of December 2021, there were already over 397,000 COVID-19 cases at colleges and universities across the U.S., and a large number of universities that began with in-person classes have since moved to remote learning (New York Times, 2020). Our results offer meaningful insights for those wishing to influence individuals in this context. Finally, the EPPM focuses on how individual characteristics such as perceived threat and efficacy impact the danger control and fear control processes. Thus, this study did not consider how relationship, community, and societal factors also influence social distancing behavior. Ecological models, on the other hand, view behavior as part of a larger system and explore how individual and environmental factors interact to produce behavior (Sallis & Owen, 2015). Thus, future research might look at the role norms, or local, state, and national guidelines play in encouraging or discouraging social distancing behavior.

Footnote

[1] This study is part of a larger investigation into how college students gather, process, and are impacted by online information about COVID-19. Online information was selected as college students identify the internet as the most common source of information about health in general, and COVID-19 in particular (e.g., Chesser et al., 2020). This, along with the fact that we needed a point of reference for our fear and fear control measures, is why these items focused on online information.

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Table 1

Means, Standard Deviations, and Cronbach's Alphas for EPPM Constructs

	Mean	*Standard Deviation*	*Cronbach's Alpha*
Perceived severity	4.23	.68	.81
Perceived susceptibility	3.62	.84	.86
Perceived threat (Severity × Susceptibility)	15.46	4.73	NA
Perceived self-efficacy	3.99	.69	.65
Perceived response efficacy	4.17	.67	.76
Perceived efficacy (Self-efficacy × Response efficacy)	16.85	4.61	NA
Fear	3.32	1.04	.88
Social distancing intention	4.26	.76	.79
Defensive avoidance	2.66	.83	.75
Message derogation	3.09	.90	.89
Social distancing behavior	4.09	.92	.88

Note: All variables measured at Time 1, except for social distancing behavior which was measured at Time 2.

Figure 1

Structural Model of Predicted Relationships

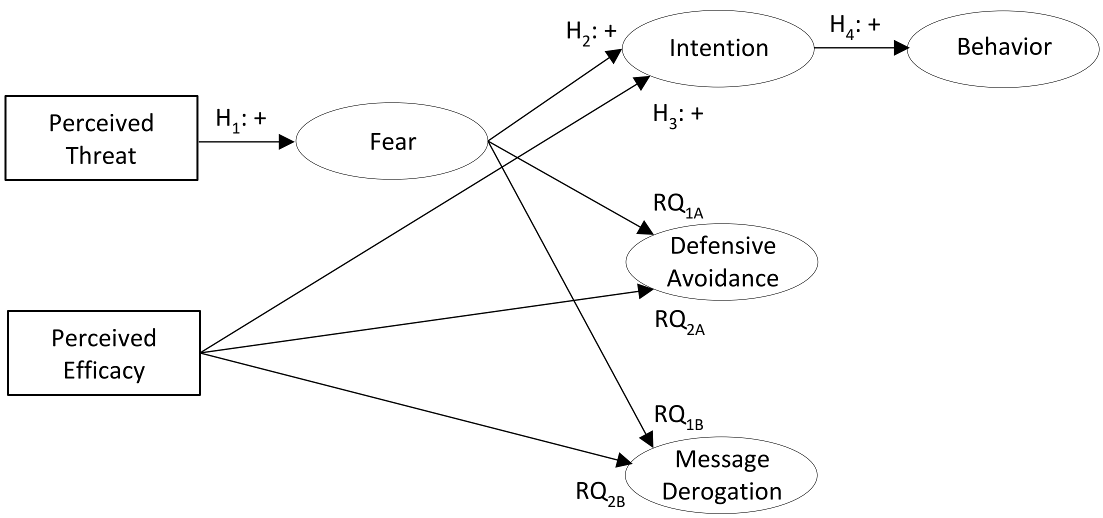
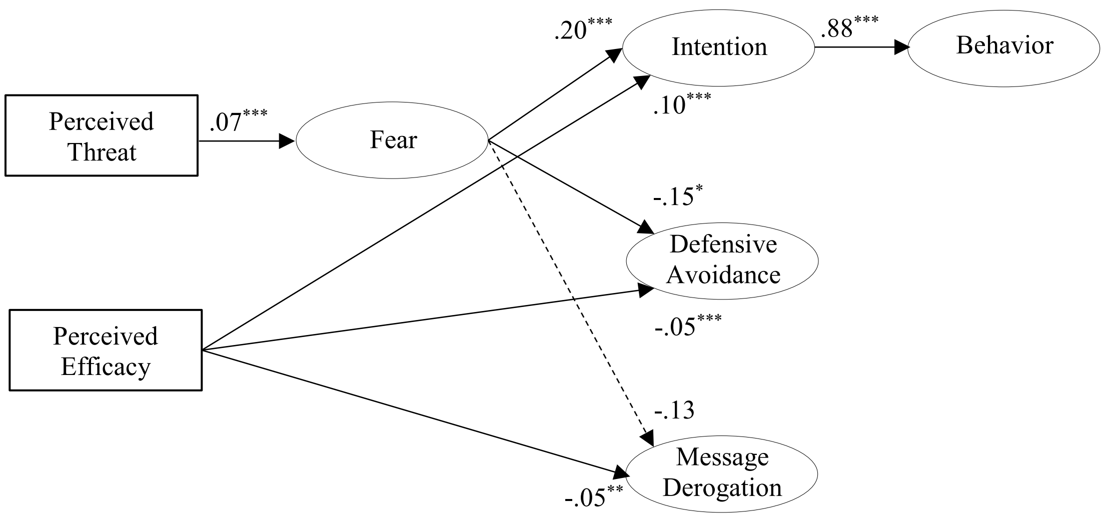


Figure 2

Results for Structural Model



Solid lines indicate significant paths (* = $p < .05$, ** $p < .01$, *** $p < .001$). Dashed line indicates insignificant path.