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From the Editor's Desk

The past year started off rough with COVID-19 cases on the rise and no end in sight. However, after many long months of fear, uncertainty, loneliness, and boredom, things are finally looking up, and life is slowly turning back to normal. Normalcy is something that has been longed for since March of 2020, but we approach it with some hesitation and fear. One question that sticks in my mind is "Will things ever really be normal again?" My answer? No.

Everyone has felt the impact of the pandemic, opening the door for a wide range of research investigating the psychology behind it. In this issue, two papers have a focus on the effects of COVID-19, and I'm sure there will be many more. The pandemic will be a topic of papers for many years to come.

I've enjoyed and am forever grateful for the opportunity to help Dr. Ken Sobel copyedit the Fall 2020 and Spring 2021 issues of the journal. I commend the students that submitted manuscripts for their contributions to psychological research, and I'm looking forward to seeing more undergraduate research in the future.

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Process goals raise academic confidence and performance of first generation college students

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First-generation college students (FGCS) enter college less academically prepared than their peers (e.g., Atherton, 2014; Terenzini et al., 1996). Additionally, FGCS encounter more academic difficulty and earn lower grades compared to their counterparts (e.g., Pratt et al., 2019; Terenzini et al., 1996). As such, it is important to find ways to increase academic confidence and performance among FGCS. One potential avenue for doing so may be to influence their goal orientation when approaching academic work. Process goals focus on the steps needed to achieve a desired outcome, while outcome goals focus on the desired outcome itself (Freund & Hennecke, 2015). Research suggests that for difficult tasks, process goals result in greater levels of performance, lower feelings of anxiety, and higher perceptions of self-efficacy than outcome goals (e.g., Vallacher et al., 1989; Zimmerman & Kitsantas, 1997, 1999). In this study, we manipulated goal orientation on a difficult task and then measured confidence and performance with respect to a subsequent pop quiz. We expected FGCS to exhibit lower confidence and performance compared to non-FGCS when instructed to adopt outcome goals; however, we expected no such differences when participants were instructed to adopt process goals. Participants consisted of 29 FGCS and 38 non-FGCS students in introductory psychology courses. All participants completed a challenging anagram task (Mattingly & Lewandowski, 2013). Students were randomly assigned to either the Process Goal Condition or the Outcome Goal Condition. Results confirmed that FGCS benefitted from process goals.

Keywords: first-generation, process goals, college achievement

College brings with it many new and difficult challenges. This is especially true for first-generation college students (FGCS). In addition to dealing with financial burdens and family expectations, FGCS may also struggle with academic adjustment (Gibbons et al., 2019; Pratt et al., 2019). In fact, both previous and current research indicates that FGCS are more likely to face academic difficulty and earn lower grades than non-FGCS (Gibbons et al., 2019; Pascarella et al., 2004; Pratt et al., 2019; Terenzini et al., 1996). As such, there remains an ongoing need among colleges and universities to continue to seek ways to support these students.

To date, several reasons for the academic challenges of traditional-aged FGCS have been proposed in the literature, including a lack of social and cultural capital, a lack in academic preparedness, lower campus involvement, and more hours spent working outside of class (Atherton, 2014; Gibbons et al., 2019; Pratt et al., 2019; Terenzini et al., 1996). Some of the early research on FGCS includes the work of Terenzini et al. (1996), who sought to examine the unique characteristics and experiences of this student group. They analyzed whether FGCS possess different characteristics before entering college, have different experiences while in college, and

show different educational outcomes in math, reading, and critical thinking after the first year of college. The study was conducted as part of the National Study of Student Learning (NSSL), a federally funded, longitudinal study that sampled 3,331 students from 18 institutions across 15 states.

Regarding pre-college characteristics, Terenzini et al. (1996) found that FGCS were more likely to come from low-income households. They also scored lower on a standardized test of math, critical thinking, and reading comprehension. Before entering college, these students also reported lower degree aspirations, and they expected to need more time to complete their degree. While in college, FGCS were more likely to take fewer credits their first year compared to non-FGCS (Terenzini et al., 1996). They also reported studying less and working more hours off campus. As for end-of-year educational outcomes, non-FGCS made greater gains than FGCS in reading skills; however, there were no differences in mathematical and critical thinking scores between FGCS and their peers after the first year (Terenzini et al., 1996). Pascarella et al. (2004) followed these students through their second and third years of college and analyzed net differences between the student groups. It was found that FGCS had lower grades than non-FGCS in the third year of college, even though they had completed fewer total credit hours (Pascarella et al., 2004). Compared to their peers, these students also worked more hours outside of class, exhibited lower levels of campus involvement, and were more likely to live off-campus. Taken as a whole, these findings suggest that the academic struggles of FGCS are partly non-academic in nature.

Recent research conducted by Atherton (2014) also suggests that FGCS might differ in their academic readiness for college. Using data from a sample of 6,280 first-year college students pooled from the years 1999-2009 who participated in the Cooperative Institutional Research Program survey, Atherton found that students who had two parents graduate from college were 20% more likely to report a high school GPA of a B+ or higher compared to students who did not. In the same study, it was also found that students who had two

parents graduate from college were 38% more likely to score above the median for an SAT mathematics test and 48% more likely to score above the median for an SAT verbal test.

It is possible that such differences in academic preparedness for college—as measured by high school GPA and standardized test scores—may manifest themselves in lower academic confidence among students who are considered to be first-generation. Indeed, research conducted by Gibbons et al. (2019) revealed that FGCS reported feeling relatively unprepared for the level of academic rigor in their college courses. Echoing the findings from Gibbons et al. (2019), Pratt et al. (2019) found that compared to non-FGCS, first-year FGCS were more likely to report that they would “encounter more difficulty performing well academically” (p. 111). As suggested by Pratt et al. (2019), these findings may indicate a lower “perceived academic competence” among this student group (p. 111).

Although they are more at risk to struggle with academic adjustment compared to their peers, FGCS find support from family, friends, faculty mentors, and student support services such as TRIO, an academic support program focused on increasing performance, retention and graduation rates of FGCS (Gibbons et al., 2019; Quinn et al., 2019). In a recent qualitative study, Quinn et al. (2019) found that grit was the most identified variable among FGCS that they believed was needed to help them cope with difficulties in college and ultimately reach their goals. This suggests that, for these students in particular, performing well academically requires a certain level of perseverance and determination. Given all of the aforementioned findings, current research on the topic has focused on identifying successful interventions that can improve college adjustment, retention, and performance among this student group (e.g., Gibbons et al., 2019; Pratt et al., 2019).

Potential Benefits of Process Goals for FGCS

In addition to recommending student support services and providing faculty mentors, another potential avenue for bolstering the efficacy and performance of FGCS may be to influence their

goal orientation when approaching academic work. When given a task, one can have a goal for the process or the outcome. Process goals focus on the steps needed to achieve a desired outcome, while outcome goals focus on the desired outcome itself (Freund & Hennecke, 2015). Process goals appear to be more advantageous than outcome goals in facilitating progress towards a desired result. Research conducted by Taylor et al. (1998) suggests that focusing one's attention on the process for a task allows one to consider the concrete steps needed to attain a certain outcome.

Unlike process goals, outcome goals do not direct people's attention to goal-relevant means. In fact, outcome goals may serve as a hindrance to successful goal pursuit. Oettingen and Wadden (1991) found that those with positive fantasies of weight loss had the worst treatment outcomes in a longitudinal weight loss program. Researchers concluded that the fantasies interfered with weight loss, because although participants had an image of the desired outcome in mind, they failed to consider the means (i.e., the process) needed to make that outcome a reality. Freund and Hennecke (2012) also examined the effects of a process versus outcome goal focus on weight loss. Supporting the conclusions drawn by Oettingen and Wadden (1991), they found that women who reported focusing on the outcome of the diet (i.e., weighing less) lost *less* weight than women who reported focusing on the process of dieting (i.e., eating low-calorie and low-fat foods). By focusing attention on the relevant steps needed to be successful, process goals appear to facilitate progress toward a desired outcome better than outcome goals.

Other studies have shown that process goals are especially beneficial for new or difficult tasks. Zimmerman and Kitsantas (1997) found that setting a process goal was more advantageous for girls learning to play darts than setting an outcome goal. Girls in the process-goal condition (i.e., instructed to focus on how they threw the dart) showed higher levels of dart skill, self-efficacy, and interest in the game than participants in the outcome-goal condition (i.e., instructed to focus on earning the highest possible score). In a similar

study, Zimmerman and Kitsantas (1999) found that a process goal was more beneficial than an outcome goal for high school girls learning how to combine multiple sentences. Students in the process-goal condition (i.e., instructed to follow the three-step strategy) showed higher levels of writing skill, self-efficacy, and satisfaction with their writing than girls in the outcome-goal condition (i.e., instructed to focus on writing a sentence with the least amount of words). In yet another study, Vallacher et al. (1989) found that when given a difficult speaking task, participants who focused on how they spoke (i.e., enunciation and increased volume) had less speech disfluencies, were less anxious, and felt their persuasion effectiveness to be higher than participants with the outcome goal of trying to be persuasive.

These aforementioned studies suggest that for new or difficult tasks it is more advantageous to focus on the process, or the "how," as focusing solely on the outcome can have detrimental effects for performance, anxiety, and self-efficacy. Furthermore, achieving difficult tasks are more attainable when the goals for the task are concrete in nature (Locke & Lathan, 2002). By definition, process goals, which focus on the tangible steps needed to reach a desired result (e.g., studying two hours a week for a class) are more concrete than outcome goals (e.g., earning an "A" in the course), which tend to be more abstract in nature (Freund & Hennecke, 2015). For this reason, outcome goals have also been found to be more uncontrollable (Burton, 1989). As such, it seems likely that FGCS may benefit from adopting process goals for their academic endeavors.

The Present Study

Our purpose was to explore the effect of goal orientation during a difficult task on students' confidence and performance when confronted with a subsequent pop quiz.

Hypothesis 1: We expected to find a main effect of goal orientation condition such that students who adopted process goals for the anagram task would have 1) more academic confidence, 2) less test anxiety, and 3) better grades

when asked to complete the quiz, compared to students who adopted outcome goals.

Hypothesis 2: We expected to find a main effect of student classification such that FGCS would have 1) less academic confidence, 2) more test anxiety, and 3) lower grades on the pop quiz, compared to non-FGCS.

Hypothesis 3: We expected to find an interaction between student classification and goal orientation condition such that differences in academic confidence, test anxiety and quiz grades as a function of student classification would occur in the outcome goal condition, but not the process goal condition. This pattern of results would demonstrate that process goals are particularly beneficial for FGCS, who may be struggling more than non-FGCS to adjust to the academic pressures of colleges.

Hypothesis 4: We expected to find a main effect of goal orientation such that students who adopted process goals for the anagram task would report higher perceptions of goal attainment, compared to students who adopted outcome goals.

Methods

Participants

Participants consisted of 68 undergraduate students currently enrolled in psychology courses at Winthrop University. Approximately one third of students enrolled at this University are FGCS, and students in this sample identified as FGCS ($n = 29$) or non-FGCS ($n = 38$). One participant failed to indicate student classification (i.e., FGCS vs. non-FGCS). Students also identified as male ($n = 20$), female ($n = 47$), and other ($n = 1$). The sample included White ($n = 35$), African American ($n = 24$), Asian ($n = 4$), and Hispanic/Latinx ($n = 2$) students; three students identified as Other. Slightly more African American students ($n = 16$) identified as FGCS compared to the remaining number of FGCS in the sample, who identified as White ($n = 11$), Asian ($n = 1$), and Latinx ($n = 1$). Students reported low income ($n = 16$), middle income ($n = 39$), upper middle income ($n = 12$) and high income ($n = 1$) socioeconomic statuses. The self-reported mean grade point average (GPA) was 3.2. Participant age ranged from 18 to 44, ($M = 19$,

$SD = 3.27$). All participation was voluntary, and students received extra credit from their course instructor for participating.

Materials and Procedures

After consenting to participate in the study, all participants completed a randomly distributed packet before receiving a pop quiz. The packet was divided into three sections. The first section contained six demographic items. Following these items, participants were asked to wait for instructions from the experimenter before moving on to the next section. The second section of the packet included an anagram task, followed by two questions that assessed participants' perceptions of goal attainment for the task.

Anagram Task

Once indicated to begin, participants started on the anagram task. This was the only part of the packet to differ among participants. Participants were randomly assigned to one of two experimental conditions depending on the instructions and accompanying format for the anagram task in their packets. Participants in the Process Goal Condition were instructed to go through the process of generating several different letter combinations for each anagram. Participants in the Outcome Goal Condition were instructed to solve the anagrams, focusing on finding the one correct solution for each one. Both conditions had the same 12 anagrams (Mattingly & Lewandowski, 2013) and eight minutes to work on the task. The anagrams were chosen for their difficulty level.

Perception of Goal Attainment

Following the anagram task, participants answered two researcher-created questions designed to assess their perceptions of goal attainment for the anagram task. Specifically, they rated the extent to which they believed they had met the goals in the given instructions, using a 5-point Likert scale ranging from "Not at all" to "Very Much," as well as their performance on the task, using a 5-point Likert scale ranging from "Poor" to "Excellent." The Cronbach's alpha for these two items was .93. After responding to these

items, students were told they would be completing a pop quiz for their psychology class.

Test Anxiety

Following the questions that assessed academic confidence, participants completed the Cognitive Test Anxiety Scale (Cassady & Johnson, 2001). This survey was used to assess whether participants' experimental condition affected their anxiety about the upcoming pop quiz. Participants indicated the extent to which they agreed with each item, using a 4-point Likert scale anchored at "Not at all like me" and "Very much like me." This scale was slightly modified to assess students' current feelings of test anxiety. The modified scale consisted of 20-items. Cronbach's alpha for the sample was .93.

Pop Quiz

Finally, the pop quiz was distributed. The quiz instructions included a notation that this was a "practice" quiz and would not count toward student grades. The quiz consisted of 10 multiple choice questions that covered material taught in an introductory psychology course. After completing the pop quiz, participants handed in their packets and pop quizzes together. At this point in time, they received a debriefing form.

Results

A 2x2 between subjects ANOVA was conducted on academic confidence, quiz grade, and test anxiety with Student Classification (FGCS, Non-FGCS) and Goal Orientation Condition (Process, Outcome) as the test variables. Hypotheses 1-3 were partially supported. Significant effects in the hypothesized direction were found for academic confidence and quiz grade, but not for test anxiety.

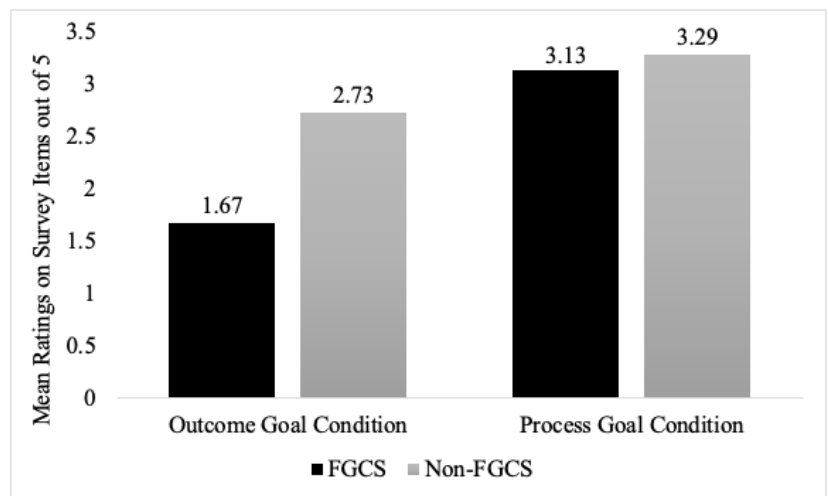
Academic Confidence

The ANOVA revealed a significant main effect of Goal Orientation Condition, $F(1,63) = 20.94, p < .001$. Overall, students in the Process

Goal Condition had higher levels of academic confidence ($M = 3.23, SD = .89$) than students in the Outcome Goal Condition ($M = 2.21, SD = 1.02$). There was also a significant main effect of Student Classification, $F(1,63) = 7.58, p = .008$. Non-FGCS were more confident about the quiz ($M = 3.04, SD = .96$) than FGCS ($M = 2.32, SD = 1.11$). Finally, there was a significant interaction between Student Classification and Goal Orientation Condition, $F(1,63) = 4.16, p = .046$ (see Figure 1). In the Outcome Goal Condition, FGCS were significantly less confident about the quiz ($M = 1.67, SD = .82$) than Non-FGCS ($M = 2.73, SD = .94$), $F(1,63) = 11.64, p < .001, d = 1.20$. In the Process Goal Condition, however, FGCS displayed a level of confidence ($M = 3.13, SD = .87$) similar to that of Non-FGCS ($M = 3.29, SD = .92$), $F(1,63) = .251, p = .618$.

Figure 1

Academic Confidence as a Function of Student Classification and Goal Orientation Condition



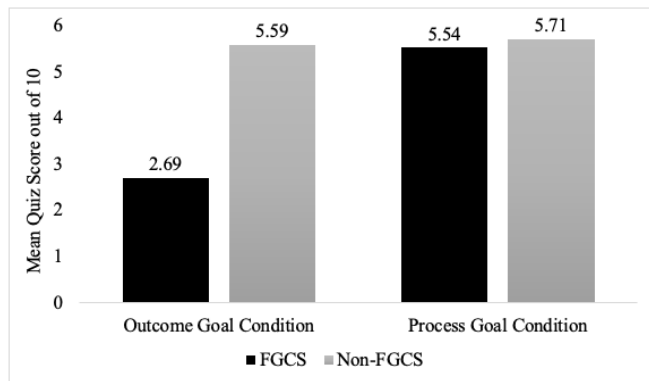
Quiz Grade

The ANOVA also revealed a significant main effect of Goal Orientation Condition, $F(1,63) = 5.08, p = .028$. Overall, students in the Process Goal Condition scored higher on the quiz ($M = 5.65, SD = 2.94$) than students in the Outcome Goal Condition ($M = 4.18, SD = 2.69$). There was also a significant main effect of Student Classification, $F(1,63) = 5.43, p = .023$. Non-FGCS scored higher

on the quiz ($M = 5.66$, $SD = 2.44$) than FGCS ($M = 3.97$, $SD = 3.19$). Finally, there was a significant interaction between Student Classification and Goal Orientation Condition, $F(1,63) = 4.26$, $p = .043$ (see Figure 2). In the Outcome Goal Condition, FGCS scored significantly lower on the quiz ($M = 2.69$, $SD = 1.92$) than Non-FGCS ($M = 5.59$, $SD = 2.58$), $F(1,63) = 9.77$, $p < .003$, $d = 1.27$; however, in the Process Goal Condition, FGCS scored similarly ($M = 5.54$, $SD = 3.78$) to that of Non-FGCS ($M = 5.71$, $SD = 2.39$), $F(1,63) = .035$, $p = .852$.

Figure 2

Quiz Grade as a Function of Student Classification and Goal Orientation Condition



Test Anxiety

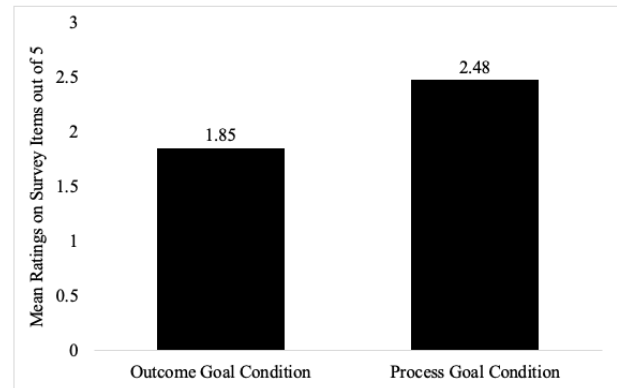
The ANOVA revealed no significant effects of Student Classification or Goal Orientation Condition on test anxiety, $F_s < 1.35$, $p_s > .250$.

Perception of Goal Attainment

A 2x2 between-subjects ANOVA was also conducted on Perception of Goal Attainment. Hypothesis 4 was supported. Specifically, there was a significant main effect of Goal Orientation Condition, $F(1, 63) = 5.08$, $p = .028$, $d = .60$ (see Figure 3). Overall, students in the Process Goal Condition ($M = 2.48$, $SD = 1.28$) felt they had met the goals in the anagram task better than students in the Outcome Goal Condition ($M = 1.86$, $SD = .74$). No other effects were significant, $F_s < .77$, $p_s > .384$.

Figure 3

Perception of Goal Attainment as a Function of Goal Orientation Condition



Note: The goal conditions depicted above include both FGCS and Non-FGCS.

Discussion

We tested the effects of student classification and goal orientation on academic confidence, test anxiety, and quiz grade. Our hypotheses were partially supported. There were no significant effects for test anxiety; however, we did find significant effects for academic confidence and quiz grade. As expected, when adopting outcome goals, FGCS had lower confidence and performance compared to their non-FGCS peers; however, when adopting process goals, no differences emerged between the two student groups. Indeed, process goals elevated the confidence and quiz grades of FGCS to a level comparable to that of their peers.

Overall, students with process goals exhibited higher quiz scores and reported higher levels of academic confidence than students with outcome goals, regardless of their student classification. Specifically, non-FGCS who were instructed to adopt process goals for the anagram task reported a higher level of academic confidence than the non-FGCS with outcome goals. Moreover, non-FGCS who adopted process goals also scored higher on the pop quiz than non-FGCS with outcome goals. These gains in academic confidence and quiz scores, however, were greater for FGCS than for their peers.

Process goals may have proven more beneficial for FGCS because, as a student group, they are more at-risk to encounter difficulties with academic adjustment. Namely, research has established that these students earn lower grades

than their peers and are more likely to enter college with a lower high school GPA and lower standardized test scores (Atherton, 2014; Pascarella et al., 2004; Terenzini et al., 1996). Thus, process goals, which have been linked to higher levels of self-efficacy and performance when compared to outcome goals (e.g., Zimmerman & Kitsantas, 1997, 1999), may have provided FGCS with a needed boost of academic confidence that their peers did not necessarily need. This heightened confidence might have then contributed to the higher levels of quiz performance for these students.

Furthermore, it is worth noting this study was conducted towards the end of the spring semester, meaning that final exams and final course grades were likely to be on the minds of many students. That said, when self-reporting their academic confidence, participants assumed that the upcoming quiz would be factored into their final grades for the course. It was not until after they received the quiz that they were informed that it would not have any bearing on their grades. Given these factors, it seems logical that FGCS—who may have been facing more academic difficulty than their peers during the time of this study—would benefit to a greater extent from the advantages that process (versus outcome) goals provide, especially during a time in the semester when grades were likely to be of pressing concern for most students, if not all.

Overall, both student groups performed worse on the quiz and exhibited lower academic confidence when they adopted outcome goals. As with process goals, however, the decrease in academic confidence and quiz performance was less severe for non-FGCS. Namely, FGCS were more negatively impacted by outcome goals. In fact, FGCS with outcome goals were the least academically confident group, and they scored the lowest on the quiz. Previous research has linked outcome goals with an increased level of anxiety, a lower reporting of self-efficacy, and lower performance than process goals (Vallacher et al., 1989). Given that FGCS are at a greater risk of encountering academic difficulty, it appears that they were more vulnerable to these negative impacts.

Furthermore, outcome goals may have negatively impacted student motivation. Specifically, students with outcome goals might have felt more demotivated following the anagram task, as they were less likely to feel as if they had met their instructed goals. As a whole, students with outcome goals reported a lower self-evaluation of their performance for the anagram task than did students with process goals. After completing a task in which they reported feeling worse about their performance, it appears logical that students with outcome goals would feel less confident and less motivated to perform well on the subsequent quiz. Thus, it is possible that a decrease in motivation may have contributed to the observed differences in academic confidence and quiz grades among students with outcome goals versus process goals.

Further studies should seek to clarify this relationship between outcome goals and a lack of motivation. One possible explanation is that students with outcome goals felt demotivated following the anagram task as a result of how they chose to interpret the reason for their failure. Namely, when students take a performance-oriented approach to learning, which is similar to the outcome goal orientation of students in this study, they are more likely to assess their outcome on a task in terms of their ability. Thus, when they fail, it is attributed to a lack of ability, as opposed to a lack of effort (Dweck, 1986). Even if students with outcome goals expended maximum effort on their anagram task, this did not guarantee that they would correctly solve it. This was different for students who adopted process goals, as they were more likely to view their given goal as being obtained by effort. With this in mind, adopting outcome goals might have further negatively impacted the beliefs of FGCS regarding their academic ability. As such, lack of motivation for the quiz might have been greater among these students, who could have already been having a harder time than their peers dealing with the academic pressures of college at the time of the study.

Neither student classification nor goal orientation appeared to impact the participants' self-reported levels of test anxiety. Overall, the

levels of test anxiety self-reported by FGCS and non-FGCS were relatively low. Additionally, there was no difference in the level of test anxiety reported by FGCS and non-FGCS, regardless of whether they had process goals or outcome goals. One possible reason for this might be the nature of the modified survey. The original published survey (Cassady & Johnson, 2001) assessed trait-like test anxiety, not state-like test anxiety. As such, the researchers had to modify the wording of the original survey items to assess the students' current levels of test anxiety for the quiz. For example, one of the original items, "I have less difficulty than the average college student in getting test instructions straight" (Cassady & Johnson, 2001) became "I will have less difficulty than my classmates in getting the quiz instructions straight."

The modified wording may have resulted in survey items that led students to report lower levels of anxiety than were actually present. Furthermore, the researchers had to remove six of the original 26 items from the survey because they could not be sufficiently modified, such as "I tend to freeze up on things like intelligence tests and final exams" (Cassady & Johnson, 2001). Fewer survey items may have impacted the results. Additionally, the sample size might also be an explanation for the lack of observed differences for participants' test anxiety. Namely, the sample might not have been large enough to provide sufficient variability in the amount of self-reported test anxiety, even though it did allow for observed differences in academic confidence and grades.

It is also worth noting that the present study did not explicitly define the term "first-generation college student" for participants, meaning that it was left up to the students to self-identify themselves based on their own interpretations of the term. This might have led students with varying exposure to college to similarly identify as "first-generation" (i.e., students with a parent/guardian who started college but did not finish, students with a parent/guardian with an associate's degree, students with a parent/guardian with only a high school diploma, etc.). Previous research has found that academic readiness for college and experiences while in college differ

depending on whether students have one or two parents that attended college, indicating that such differences do matter (e.g., Atherton, 2014; Terenzini et al., 1996). Even though the way in which students self-identified did lead to observable differences in this study, future studies should provide participants with a well-understood definition of "first-generation college student."

It is also worth mentioning that the researchers did not examine differences among individual student populations within the broader student group of FGCS. For instance, researchers did not measure the year in college for students. Thus, it was not possible to examine whether academic confidence and performance exhibited by FGCS differed based on their time spent in college. It is logical to expect that increased familiarity with the expectations of college might have contributed to increased confidence and higher scores for the quiz. Moreover, the majority of students in the study were traditional age college students (i.e., 25 years old or younger). Future studies might seek to examine the differences in academic confidence and performance for non-traditional age students.

In conclusion, our findings contribute to the literature exploring mechanisms whereby college and universities can most effectively support traditional-aged FGCS (e.g., Gibbons et al., 2019; Pratt et al., 2019). Our findings support studies that have found process (versus outcome) goals to provide advantages with respect to self-efficacy and performance (e.g., Zimmerman & Kitsantas, 1997, 1999). Our results also support previous research that suggests that FGCS are at an academic disadvantage compared to their counterparts (e.g., Atherton, 2014; Terenzini et al., 1996). We provide evidence that in addition to recommending student support services and other academic resources, teaching FGCS to adopt process rather than outcome goals for their academic work is a viable avenue for enhancing their confidence and performance.

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Appendix A

PROCESS GOAL INSTRUCTIONS WITH EXAMPLES OF ANAGRAM TASK FORMATTING

Below are 12 anagrams (i.e., English words that are mixed up). YOUR TASK IS TO TRY TO COME UP WITH AS MANY DIFFERENT LETTER COMBINATIONS AS POSSIBLE FOR THESE PUZZLES. For example, if the anagram was “OKBSO”, you might write out several letter combos such as KBSOO, SOKOB, KOOBS and BSOOK. If you solve the anagram you can write the solution below the letter combinations (e.g., BOOKS). FOR THIS TASK YOU SHOULD FOCUS MORE ON GENERATING DIFFERENT LETTER COMBINATIONS AND NOT ON THE SOLUTIONS. You will have 8 minutes to work on these anagrams.

ACELO

KINUD

FRTID

IGESD

OUTCOME GOAL INSTRUCTIONS WITH EXAMPLES OF ANAGRAM TASK FORMATTING

Below are 12 anagrams (i.e., English words that are mixed up). YOUR TASK IS TO TRY TO SOLVE AS MANY OF THESE PUZZLES AS POSSIBLE. For example, if the anagram was “OKBSO”, the answer would be “BOOKS”. Solve as many as you can. You will have 8 minutes to work on these anagrams.

ACELO _____

KINUD _____

FRTID _____

IGESD _____

“If only I were thinner:”
Counterfactual thinking, body image, and health

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Abstract - The present study investigated the relationships between counterfactual thinking, health-related goal setting, and attitudes regarding the self. One hundred and thirty-nine undergraduate students completed an online survey assessing their counterfactual thinking tendencies, health-relevant goals, body image satisfaction and optimism. Results indicate that individuals with higher BMIs and body image dissatisfaction were more likely to set goals centering on weight loss. In addition, a tendency to think about “how things could be better” (non-referent upward counterfactual thoughts) was related to lower body image satisfaction and an exclusive focus on weight loss rather than health management. A tendency to think about “how things could have been worse” (non-referent downward counterfactual thoughts) was related to a greater focus on health-relevant goals and optimistic attitudes. These results suggest that while non-referent upward counterfactual thinking may be related to a negative outlook on health, downward counterfactual thinking may be a beneficial thought process in the domain of general health.

Keywords: counterfactual thinking, health, goal setting, body image.

Multiple psychological theories are rooted in the idea that our understanding of the present results from an examination of the past. Some psychological theories go further, not only analyzing how the past informs the present, but also how the manner in which the past is interpreted can have significant effects on future emotion and behavior. The construct of counterfactual thinking effectively captures this latter cognitive process.

Counterfactual thinking refers to the tendency to generate thoughts of alternative outcomes to a given scenario (Roese, 1997). That is, an individual engaging in counterfactual thinking is able to mentally modify specific components of her past to create new hypothetical outcomes (either positive or negative). In doing so, the individual identifies specific factors as leading to the event at hand, thus creating a personal interpretation of causality. Rye, Cahoon, Ali and Daftary (2008) delineate different categories of counterfactual thoughts based on the specific structure and focus of these mental manipulations. Counterfactual

thoughts can be structured to attribute culpability to oneself (self-referent), others (other-referent), or have no specific subject of culpability (non-referent). These thoughts can also be classified according to the valence of the hypothetical outcome, differentiating between better-than-original (upward) scenarios, and worse-than-original (downward) alternatives (Roese, 2005). The combination of these categories, although not all-encompassing, can create very detailed classifications of counterfactual thoughts (i.e. self-referent upward counterfactual thoughts).

Research has consistently shown that upward and downward counterfactual thoughts have differential effects on emotion (Markman et al., 1993; Roese, 1994). Comparisons to better alternative outcomes (upward counterfactuals) generate feelings of regret and tension. For instance, a student who has just failed an exam might think “if only I had studied more, I would have passed.” In contrast, the comparisons to worse alternatives (downward counterfactuals) bring about feelings of relief and protect from the

negative effect that the factual situation may generate (Roese, 1997). Our hypothetical student could also think “at least I did not get the worst grade in the class,” which could alleviate some of the negative feelings associated with failing the test.

In addition to influencing emotion after an event, counterfactual analysis of the past has the potential to inform individuals’ future plans. Hammel and Chan (2016) presented participants with a computer-simulated task and an opportunity to improve their performance on a second trial. Participants who were prompted to engage in upward counterfactual thinking after the first attempt performed better on average than the control group on the second trial of the computer-simulated task. The generation of upward counterfactuals allowed participants to consider ways in which their performance could have been improved and the opportunity to implement such strategies during the second trial. Roese (2005) also provides evidence that the identification of causal factors associated with upward counterfactual thinking helps create a map of action to be taken (or not taken) in future similar situations. Boninger, Gleicher and Stratham (1994) claim that in fact, the act of generating counterfactual thoughts leads to a shift in perspective from what “might have been” to “what may be” (p. 306).

This ability to generate alternative scenarios ultimately influences our expectations for the future (Rye et al. 2008). In fact, research has related counterfactual thinking to dispositional tendencies such as pessimism and optimism, which are defined by the type of general outlook someone has on their life (Barnett & Martinez, 2015). In a correlational study, Barnett and Martinez (2015) found that while self- and non-referent upward counterfactual thinking was related to a pessimistic outlook, downward counterfactual thoughts were related to optimistic attitudes. That is, while pessimists tended to think about how things could have been better, optimists were more prone to imagine how things could have been worse. In a meta-analysis, Broomhall et al. (2017) found that among several samples, upward counterfactual

thinking styles were linked to current as well as foreseeable depression.

Much of what is known about counterfactual thinking comes from studies about academic performance and laboratory-based task completion. In addition, research has linked this cognitive process to personal dispositions such as depression (Barnett & Martinez, 2015; Markan & Miller, 2006). However, little is known about the link to health and desired appearance. Given that the literature has shown body dissatisfaction is also tied to depressive symptomatology (Krane et al., 2001; Noles et al., 1985; Rierdan & Koff, 1997; Xie et al., 2010), it is important to study the role of counterfactual thinking and goal setting in this domain.

Purpose

The main goal of the present correlational study was to explore the relationships between different counterfactual thinking tendencies and health-relevant goal setting. To do so, participants had the opportunity to create a number of personal goals in relation to diet, physical exercise, smoking and weight change. In addition, the study also explored the relationships between counterfactual thinking and dispositions such as optimism, pessimism and body image.

Given the benefits of upward counterfactual thinking as shown by Hammel and Chan (2016) and Roese (2005), among others, it was hypothesized that individuals reporting both self- and non-referent upward counterfactual thinking tendencies would generate more health-relevant goals when compared to their downward counterfactual thinking counterparts. As was the case for Barnett and Martinez (2015), it was also hypothesized that individuals with upward counterfactual thinking tendencies would be more pessimistic than individuals reporting an inclination toward downward counterfactual thoughts.

Method

Participants

Previous research that has tested the relationship between exercise and cognition has

used similar aerobic exercise interventions in order to obtain increases in functional fitness. These exercise interventions usually use single muscle group or single exercise interventions, such as treadmill walking and stationary biking, which are two popular aerobic activities used in age-related exercise interventions. Increases in physical fitness are present in populations who undergo these exercises; however, these exercises use only one major muscle group (i.e., hamstring/quadriceps muscles). Other studies have used dance classes as an exercise (Emery & Gatz, 1990), which is a more dynamic type of exercise, but it still does not pose enough stress to the upper body in order to be classified as a full body workout.

Table 1. Participant Breakdown

	N	Percent
Race/Ethnicity		
Non-Hispanic White	93	71.5
Non-Hispanic Black or African American	6	4.6
Hispanic or Latino American	13	10.0
Asian American, Native Hawaiian or Other Pacific Islander	4	3.1
Native American or Alaska Native	1	0.8
Mixed-Race/Ethnicity	7	5.5
Other	6	4.6
BMI		
Underweight (<18.5)	8	6.2
Normal Weight (18.5-24.9)	77	59.2
Overweight (25.0-29.9)	33	25.4
Obese (>30.0)	9	6.9

CDC's guidelines

Measures

Counterfactual Thinking for Negative Events Scale (CTNES).

In order to study participants' counterfactual thinking tendencies, we administered the CTNES by Rye et al. (2008). Participants were asked to think of a negative event that happened recently and consider the types of thoughts they had regarding the event. The scale presented participants with a variety of different thoughts, some of which reflected better alternative scenarios (upward counterfactuals), while others presented worse alternative outcomes (downward counterfactuals). The scale also allowed

participants to discern between thoughts that focused on aspects of the self as causing the negative event (self-referent), while others emphasized the role of others (other-referent) or did not focus on any specific antecedent (non-referent). The scale contained four subscales, each with moderate reliability coefficients as reported by Rye et al. (2008): Non-Referent Downward ($\alpha = .85$), Other-Referent Upward ($\alpha = .82$), Self-Referent Upward ($\alpha = .76$), and Non-Referent Upward ($\alpha = .75$).

Body Image States Scale (BISS).

In order to test for possible relationships between counterfactual thinking tendencies and body image, three subscales of the Body Image States Scale by Cash, Fleming, Alindongan, Steadman and Whitehead (2002) were administered. Participants were asked to indicate how they felt about their physical appearance, body size and shape and weight. Response options ranged from 1 (Extremely dissatisfied) to 9 (Extremely satisfied). Cash et al. (2002) report alpha reliabilities of .77 and .72 for women and men respectively.

Life Orientation Test Revised (LOT-R).

The LOT-R by Schier, Carver and Bridges (1994) was used to assess general tendencies toward optimism and pessimism. The scale contained a total of 10 items, four of which were filler questions. Participants were asked to indicate the extent to which they agreed or disagreed with a series of statements reflecting typical pessimistic and optimistic thoughts. Participants used a 5-point Likert scale, ranging from 1 (Strongly disagree) to 5 (Strongly agree). Schier et al. (1994) report alpha reliabilities of .78.

Procedure

Participants completed a 10-minute "Health Goals and Related Attitudes" online survey, in which they were asked to respond to demographic and health-relevant questions. Participants were also asked to report their current height and weight and create a list of health-related goals (i.e. eating

one more serving of fruit every day), regarding diet, physical activity and smoking. Participants were also asked to mark which health-relevant area they intended to change during the academic year, if any, and to specify how. This goal-setting section also included a question asking participants if they wished to change their weight (either by increasing or decreasing it), and if so, by how much. After the goal-setting section, participants completed measures of counterfactual thinking tendencies, optimistic and pessimistic attitudes, and body image satisfaction.

Results

Psychometric Information

Reliability analyses using Cronbach’s alpha indicated that most scales were internally consistent with alpha reliabilities above .80. The alpha coefficient of the CTNES self-referent upward subscale was somewhat lower than anticipated (See Table 2).

Table 2. Psychometric and Descriptive Statistics

	<i>M</i>	<i>SD</i>	<i>range</i>	<i>α</i>
CFT- Self-Ref. Up	11.58	3.34	4-20	.67
CFT-Non-Ref. Up	12.51	3.34	4-20	.72
CFT-Other-Ref. Up	11.11	3.90	4-20	.83
CFT-Non-Ref. Down	12.26	3.27	4-20	.76
BISS	4.66	2.19	1-9	.92
LOT-R	19.07	4.27	8-30	.83
BMI	23.97	3.89	15.62- 41.19	-

Descriptive Information

Descriptive analyses of the measures show similar means for the CTNES subscale as those reported by Rye et al. (2008). These analyses also indicate that participant BISS means were similar to those reported by Cash et al. (2002). See Table 2 for descriptive statistics.

Table 3. Frequency Analysis of Health-Related Goal Setting

	No. Individuals	Percent
Goals		
Diet	105	75.53%
Exercise	119	85.61%
Smoking Habits	13	9.35%
Weight		
Increase	7	5.4%
Maintain	42	32.3%
Decrease	78	60.1%
Unspecified	3	2.3%

Goal Setting

A frequency analysis of goal-setting responses can be found in Table 3. Participants easily generated goals relating to diet and exercise. Only a few expressed interest in changing smoking habits. Not surprisingly, all smoking-related goals revolved around smoking cessation. Most participants reported a desire to decrease their weight. Participants who indicated a desire to decrease their weight reported wanting to lose anywhere from 3 to 50 pounds ($M = 13.65, SD = 9.22$). A limited number of participants indicated wanting to increase their weight from 5 to 10 pounds ($M = 7.57, SD = 2.37$).

Two variables were created to examine different forms of goal setting. First, a variable subtracting self-reported weight from target weight was created to examine participants’ weight-specific goals, with negative numbers indicating a desire to decrease weight. Second, the qualitative responses to goal setting were coded to create a variable counting participants’ total number of reported goals. A point was added to this variable for each goal the participant specified under the section of diet, exercise and smoking, and if they indicated a target weight. Some participants created more than one goal per section (e.g. “consume more vegetables with lunch and dinner, consume less ice cream”). Participants’ total number of goals ranged from 0 to 8, with an average of 2.78 goals per person.

Counterfactual Thinking and Goal Setting

Linear regression analyses suggest that individuals reporting Non-Referent Upward counterfactual thinking tendencies were more likely to indicate a greater interest in decreasing weight, $F(1,121) = 4.93, p = .028, b = -.558, R^2 = .039$. Results also indicate that individuals who reported greater Non-Referent Downward counterfactual tendencies were likely to generate more health-relevant goals, $F(1,127) = 6.66, p = .011, b = .111, R^2 = .05$. That is, while participants with a tendency to think about how things might have been better (Non-Referent Upward) tended to focus on weight-loss, participants with a tendency to think about how things might have been worse (Non-Referent Downward) were more likely to generate goals pertaining to modifying diet and physical activity. No significant relationships were found between goal setting, Other-Referent Upward and Self-Referent Upward counterfactual thinking styles.

Counterfactual Thinking and Personal Dispositions

To examine possible differences between counterfactual thinking styles and different personal dispositions such as optimism and pessimism and body image, we conducted linear regression analyses that included the counterfactual thinking subscales and the BISS and LOT-R measures. Results indicated that Non-Referent Upward counterfactual thinking tendencies were related to body image satisfaction, $F(1,124) = 16.615, p = .000, b = -.665, R^2 = .12$, where a higher tendency to think about how things could have been better predicted lower body image satisfaction. Furthermore, this kind of counterfactual thinking was also related to more pessimistic attitudes, $F(1,123) = 4.67, p = .033, b = -.239, R^2 = .037$. Participants who often engage in thoughts about how a negative scenario could have turned out better tended to be more dissatisfied with their body and held more pessimistic attitudes. While no relationship was found between Non-Referent Downward counterfactual thoughts and body image satisfaction, this type of counterfactual thinking style was related to

optimism, $F(1,126) = 4.94, p = .028, b = .254, R^2 = .038$. These results indicate that thinking about how things could have been worse is related to an overall positive outlook.

The Role of Weight and Body Image on Goal Setting

To study how physical appearance and the perception of such may relate to participants' goal setting, regression analyses were conducted with BMI and BISS scores to predict participants' health and weight goals. BMI was a significant predictor of participants' total number of health-relevant goals, $F(1, 124) = 5.42, p = .022, b = .09, R^2 = .04$, and participants' weight-loss goals, $F(1, 123) = 54.86, p < .001, b = -1.462, R^2 = .31$. Participants with higher BMIs were more likely to report a greater number of health relevant goals and aimed to decrease their weight to a greater extent than their study counterparts with lower BMIs. In order to test whether participants' body image satisfaction influenced this relationship, BISS was included in the regression models as a mediating variable. The mediation model predicting participants' total number of health goals was significant, $F(2,123) = 6.31, p = .003$. The relationship between BMI and BISS was significant, $t(124) = -5.045, p = .000, b = -.6912, 95\% \text{ CI } [-.962, -.42]$, suggesting that individuals with higher BMIs tended to be less satisfied with their body image. The relationship between BISS and the total number of goals was significant as well, $t(123) = -2.6338, p = .0095, b = -.0622, \text{ CI } [-.1090, -.0155]$, with those individuals who were satisfied with their body image reporting less goals than their dissatisfied counterparts. This analysis also indicates that the previously significant relationship between BMI and the total number of health relevant goals is no longer statistically significant when BISS is included in the model, $t(123) = 1.0931, p = .2809, b = .0429, \text{ CI } [-.0355, .1212]$. That is, BISS fully mediated the relationship between BMI and participants' health goal setting. However, it is important to note that BMI and BISS only accounted for approximately nine percent of the variance in the number of health-relevant goals, $R^2 = .093$.

The mediation model predicting participants' weight loss goals was also statistically significant and accounted for approximately 40% of the variance in participants' desire to lose weight, $F(2, 122) = 47.583, p = .000, R^2 = .438$. The relationship between BISS and weight loss goals was significant, $t(122) = 5.3090, p = .000, b = .6189, CI [.3881, .8497]$, suggesting that individuals with lower body image satisfaction were more likely to report a desire to lose more weight. The direct relationship between BMI and weight loss goals was statistically significant when taking into account BISS scores, $t(122) = -5.2876, p = .000, b = -1.0354, CI [-1.4230, -.6477]$, suggesting that unlike the previous case, BISS is only a partial mediator of this relationship.

Counterfactual Thinking

To further understand the role of counterfactual thinking in weight-loss goals, participants' scores on the CTNES Non-Referent Upward scale were used as a mediator in a regression model between BISS and weight goals. The overall model was significant, $F(2, 120) = 33.21, p < .001, R^2 = .356$. In parallel to the previously reported relationships, BISS significantly predicted Non-Referent Upward counterfactual thinking, $t(121) = -4.035, p = .0001, b = -.177, CI [-.2644, -.090]$. While the relationship between BISS and weight loss goals remained significant as well, $t(120) = 7.689, p < .0001, b = .872, CI [.647, 1.096]$, the Non-Referent Upward counterfactual thinking variable became non-significant in the model, $t(120) = .112, p = .911, b = .025, CI [-.411, .461]$. These results also suggest that body image satisfaction also fully mediated the relationship between Non-Referent Upward counterfactual thinking styles and participants' weight-loss goals. In addition, a linear regression was conducted between BMI and the CTNES Non-Referent Upward Counterfactual scale. This relationship was not significant, $F(1, 120) = .539, p = .464$, supporting the idea that BISS may elicit non-referent upward counterfactuals, rather than the reverse relationship.

Discussion

The results of this study contradict our initial hypotheses. Because upward counterfactual thoughts identify specific factors and behaviors to be modified or avoided in the future, we expected that a tendency to generate any kind of upward counterfactual thought would be related to goal setting. That is, given the map of future action that Roese (2005) indicates is proper of upward counterfactuals, we expected that this tendency would be related to an increased desire to change health habits such as diet and exercise. We hypothesized that the tendency to mentally "undo" factors leading to a negative event would allow individuals to have specific changes to health habits more readily available than their counterparts.

However, results show that participants with Non-Referent Upward counterfactual thinking tendencies were mostly interested in weight loss and were more likely to be dissatisfied with their body and report pessimistic outlooks. These results indicate that rather than creating a strategy for future behavior, Non-Referent Upward counterfactual thoughts were related to a possibly maladaptive concern with appearance. A qualitative analysis of this subscale of the CTNES suggests that this specific counterfactual tendency may be ruminative in nature, as reflected by items such as "I cannot stop thinking about how I wish things would have turned out." Rather than reflecting the creation of guidelines for future behavior, these items focused on participants' inability to stop thinking about how things might have been better, and the negative affect that these thoughts bring about. Barnett and Martinez (2015) briefly discuss the effects of this fine distinction between Non-Referent and Self-Referent Upward counterfactuals; these types of counterfactual thought styles are related to different extents to a more negative outlook for the future. Thinking "it could have been better" (non-referent) is related to a greater extent to negative future expectancies than "I could have done more" (self-referent) (Barnett & Martinez, 2015, p. 124). The present study suggests a similar pattern, indicating that Non-Referent Upward counterfactuals were associated with a more damaging outlook in regard

to body image and health-related goals. These relationships between pessimism, body image and goal setting were not found with Self-Referent Upward counterfactual thinking.

The idea that thinking of how things may have been better can be detrimental is further supported by the results of the mediation analyses between body image satisfaction, Non-Referent Upward counterfactual thinking tendencies and weight-loss goals. The results of these analyses suggest that body image satisfaction accounted for all of the variance in participants' weight-loss goal setting that was previously accounted for by Non-Referent Upward counterfactual thinking, linking this thought pattern to a maladaptive view of one's appearance. While the pertinent CTNES scale did not significantly predict weight loss goals when including the BISS in the model, it remained significantly related to body image satisfaction. Thus, it is possible that tackling these ruminative counterfactual thoughts could be beneficial for individuals struggling with body image concerns and who may gravitate toward detrimental outlooks on health and weight.

In contrast, participants with Non-Referent Downward counterfactual thinking tendencies were more likely to engage in diet- and exercise-relevant goal setting. That is, individuals with a tendency to think about how things may have been worse were more likely to generate more goals specific to changes in diet and exercise. The tendency to generate this type of counterfactual thought was also related to overall optimism. A qualitative analysis of the items in this subscale of the CTNES suggests a global inclination toward positivity and gratitude, as reflected by items such as "I feel relieved when I think about how much worse things could have been." These results also support Barnett and Martinez (2015), who suggest that downward counterfactual thinking and optimism may be part of a "positive schema" which can motivate goal-directed behaviors and sustain a positive outlook. Although thinking about how things may have been worse does not support the creation of behavioral guidelines for future behavior, it may motivate people to persevere after negative events.

Given that the present study was correlational in nature, we cannot establish causal links. Nonetheless, the results of the mediation analyses presented in this study provide important groundwork for the establishment of directionality of the relationships between body image satisfaction, counterfactual thinking and weight-loss goals. While counterfactual thinking tendencies accounted for less than 10 percent of the variance of outcome variables, the results of this study do highlight this kind of thinking as an important construct to consider further in health psychology. Additionally, it is important to note that the total number of goals may not be the most accurate way of studying participants' health goal setting. Given the online survey setting of this study, thorough qualitative analysis of participants' goals was not possible. Future qualitative studies could benefit from expanding on the distinction between healthy and unhealthy, and realistic and unrealistic goal setting. Finally, given the broad context of "general health" used in the study, we cannot comment on the cognitive processes specific to more significant health problems such as chronic diseases or terminal illness. Further studies should also focus on specific populations and how different types of counterfactual thinking may aid or hinder their disease-specific health care and emotional well-being. Despite the limitations, an understanding of counterfactual thinking in the context of health may provide ways to improve health education guidelines for the betterment of general self-care.

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Adults' attitudes toward children in two different phases of treatment for cancer and their knowledge about childhood cancer

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Abstract -

Objectives: The present study sought to examine the relations among adults' attitudes toward children who are currently undergoing treatment for cancer, their attitudes toward children who are in remission (i.e., children who have been cancer-free for five or more years), and their knowledge about childhood cancer.

Methods: A total of 193 adults (61.7% female; 79.3% Caucasian) between the ages of 18 and 76 ($M_{age} = 38.47$ years, $SD_{age} = 12.88$) completed a series of questionnaires online via Amazon's Mechanical Turk.

Results: The higher the participants' score on a 30-item Knowledge About Childhood Cancer Questionnaire developed for this study, the more favorable their attitudes were toward children who are in remission, but not children who are currently undergoing treatment for cancer. In general, the participants reported having more favorable attitudes toward children who are in remission than children who are currently undergoing treatment for cancer.

Conclusions: Increased knowledge about childhood cancer was found to be associated with relatively more favorable attitudes toward children who are in remission. Whereas prior research has demonstrated that some adults have relatively unfavorable attitudes toward children who are in remission following treatment for cancer, the present findings suggest that the "childhood cancer stereotype" may actually be more severe for children who are currently undergoing treatment for cancer.

Keywords: childhood cancer stereotype, children with cancer, children in remission from cancer

Childhood cancer is a tragic illness that impacts thousands of children each year (American Cancer Society, 2018; National Cancer Institute, 2019). As would be expected, children with cancer tend to experience many stressors (e.g., the treatment and associated side effects, a perceived loss of control, a fear of dying) that can exacerbate their illness (McCaffrey, 2006; Patenaude & Kupst, 2005). Fortunately, parents can help children with cancer by protecting against such stressors (Hockenberry-Eaton et al., 1994) and by teaching them adaptive coping strategies (e.g., cognitive restructuring; Hildenbrand et al., 2011). Similarly, friendly and supportive healthcare professionals who are knowledgeable about childhood cancer and

provide young patients with age-appropriate information about the disease have been found to have a positive impact on children undergoing treatment for cancer (e.g., Hedström et al., 2004).

Given the critical role that supportive and well-informed adults have been found to play in assisting children in their battle against cancer, it is disheartening that research has also demonstrated that some adults have relatively unfavorable attitudes toward children who are in remission following treatment for cancer (Stern & Arenson, 1989; Stern et al., 1991; Vannatta et al., 1998; Wiens & Gilbert, 2000). This relatively unfavorable attitude, commonly referred to as a "childhood cancer stereotype" (Stern & Arenson, 1989; Stern et

al., 1991; Wiens & Gilbert, 2000), reflects the belief that children who are in remission following treatment for cancer have a broad range of social, cognitive, emotional, and physical deficiencies despite the fact that their cancer has been successfully treated. For example, Stern and Arenson (1989) found that undergraduates and medical students rated children in remission from leukemia as less sociable, less cognitively competent, less well-behaved, less physically potent, smaller, and less likely to adjust well in the future than healthy children who had never had cancer. Unfortunately, as Stern and Arenson (1989) contend, such beliefs may affect how adults respond to children in remission (e.g., treating them as if they are weak and incapable of handling stress) which, in turn, may result in a self-fulfilling prophecy whereby the children react in a manner that serves to confirm and perpetuate the relatively unfavorable perception of them.

Stern and Arenson's (1989) finding that both undergraduates and medical students displayed a childhood cancer stereotype might suggest that the extent to which individuals have knowledge about childhood cancer is unrelated to their tendency to display a negative attitude toward children who are in remission. However, Stern and Arenson (1989) acknowledged that the first- and second-year medical student participants in their study had not yet received any formal training in childhood cancer, and their "greater self-reported familiarity" with the topic "might reflect a social desirability set to appear more knowledgeable than they actually are about childhood cancer" (p. 603). Subsequent research has suggested that exposure to information about cancer may be associated with more favorable attitudes among adults toward children described as having cancer (Drury et al., 2005; Stern et al., 1991). However, despite the evidence of a positive relation between adults' knowledge about particular disorders (e.g., ADHD, cerebral palsy, autism) and more favorable attitudes toward children diagnosed with those disorders (e.g., Ghanizadeh et al., 2006; Iobst et al., 2009; Nabors & Lehmkuhl, 2005), little is known regarding the association between adults' knowledge about childhood cancer and the extent

to which they hold unfavorable, stereotyped attitudes toward children with this potentially devastating disease.

Research involving the childhood cancer stereotype has tended to focus on children who are in remission rather than children with cancer who are currently undergoing treatment. Although the childhood cancer stereotype and the reactions of others might be expected to be more severe for children undergoing treatment than children in remission because of the relative uncertainty regarding the former group's current status and prognosis, little is known about adults' relative perceptions of these two groups of young cancer patients.

Overview of Present Study

Given these apparent gaps in the literature, the two primary goals of the present study were (1) to determine if there is a positive relation between adults' knowledge about cancer in children and their attitudes toward children who are undergoing treatment for cancer and children whose cancer is in remission and (2) to compare adults' attitudes toward children who are in these two different phases of treatment. Participants' knowledge about children with cancer was assessed in the present study with a 30-statement questionnaire that was developed for use in this study. Participants' attitudes toward children who are undergoing treatment for cancer and children whose cancer is in remission were assessed in two ways. First, an 11-item attitude measure was developed to assess the extent to which the participants agreed that children who are undergoing treatment for cancer and children whose cancer is in remission display the various social, cognitive, emotional, and physical deficiencies associated with the childhood cancer stereotype. Second, the participants rated the extent to which they agreed that children who are undergoing treatment for cancer and children whose cancer is in remission have each of the Big 5 personality traits [i.e., openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability (the inverse of neuroticism)] that represent a well-documented approach for describing and perceiving personality in others

(McCrae & Costa, 2008). Given that relatively low ratings on each of these traits (e.g., being rated relatively low on openness to experience) would tend to reflect relatively unfavorable characteristics, a brief assessment of the Big 5 traits was included in the present study to provide additional insight into the perceived deficiencies associated with the childhood cancer stereotype.

Because the present study was designed as an initial, exploratory step to address gaps in the childhood cancer stereotype literature, no formal a priori hypotheses were made. Furthermore, given the potential for adults to have a significant impact on children who have been diagnosed with cancer, a more general goal of this line of research is to encourage adults to be more mindful of their perceptions and beliefs about children who have been diagnosed with cancer, and how their perceptions and beliefs may influence the manner in which they interact with (or fail to interact with) children who have been confronted with this potentially life-threatening disease from the floor.

Method

Participants

A total of 193 adults (61.7% female; 79.3% Caucasian) between the ages of 18 and 76 ($M_{\text{age}} = 38.47$ years, $SD_{\text{age}} = 12.88$) took part in the study. The majority of participants (85.6%) had an income of less than \$100,000 and approximately 75% of participants had obtained an associate's degree or higher. Further, of the 193 adults who participated, approximately 83% reported that they know someone (including self) who has been diagnosed with cancer.

Materials and Procedure

The participants were recruited through Amazon's Mechanical Turk (MTurk) and took part online (for a discussion of the increasing use of MTurk samples in social and personality psychology research, see Anderson et al., 2019). Initially, the participants completed a brief questionnaire that assessed six sociodemographic background characteristics: (1) their age, (2) their sex, (3) their race/ethnicity, (4) their highest level of education attained, (5) their annual household

income, and (6) whether they know someone (including self) who has been diagnosed with cancer. Next, the participants were asked to indicate whether each of the 30 statements on the Knowledge About Childhood Cancer Questionnaire (KACCQ), developed for use in this study, is true or false ($\alpha = .81$; see Appendix A). The statements on the KACCQ (a) were designed to assess individuals' general knowledge of various topics associated with childhood cancer (e.g., survival rates, treatments, physiology), (b) reflect information provided by reputable organizations that deal with cancer in children (e.g., American Cancer Society, National Cancer Institute, Centers for Disease Control and Prevention) and (c) were reviewed by two healthcare professionals who have extensive experience working in pediatric oncology.

After completing the KACCQ, the participants responded to several statements designed to assess their attitudes toward children with cancer who are in two different phases of treatment. More specifically, the participants were asked to rate on a 6-point scale, ranging from 1 (*disagree a lot*) to 6 (*agree a lot*), the extent to which they disagree or agree with several statements concerning "children who are undergoing treatment for cancer" (i.e., Children with Cancer; CWC) as well as "children who have undergone treatment for cancer and have been cancer-free for five or more years" (i.e., Children in Remission; CIR; see Appendix B). The descriptors that participants were instructed to insert in the statements were selected to reflect the various social (e.g., less empathic), cognitive (e.g., poorer students), emotional (e.g., more emotionally fragile), and physical (e.g., less athletic) deficiencies associated with the childhood cancer stereotype (Stern & Arenson, 1989; Stern et al., 1991; Wiens & Gilbert, 2000). Preliminary analyses of the participants' responses to these descriptors yielded an 11-item attitude measure with higher scores reflecting a more favorable attitude toward CWC ($\alpha = .71$) and CIR ($\alpha = .81$). Five additional descriptors were included on this questionnaire to assess the extent to which the participants disagree or agree that the CWC and CIR possess each of the Big 5 personality traits (i.e., Openness to Experience,

Conscientiousness, Extraversion, Agreeableness, and Emotional Stability; see Appendix B).

Results

Assessing Whether Knowledge About Cancer is a Predictor of Attitudes Toward CWC and CIR

Two multiple regression analyses were conducted to address the first goal of the present study: to determine if there is a positive relation between adults' knowledge about cancer in children and their attitudes toward children who are undergoing treatment for cancer and children whose cancer is in remission. In the first regression, the participants' responses to five of the six sociodemographic background characteristics (all except race/ethnicity, which is not a continuous or quantifiable variable) and their scores on the KACCQ were included together in the one step of the regression to predict their attitudes toward CWC. The model was only marginally significant, $F(6, 192) = 2.04, p = .063$ and accounted for approximately 6% of the variance of the participants' attitudes toward CWC. An identical multiple regression analysis was conducted in order to determine which variable or variables uniquely predict the participants' attitudes toward CIR. This model was statistically significant, $F(6, 192) = 8.49, p < .001$ and accounted for approximately 22% of the variance of the participants' attitudes toward CIR. Of the six potential predictor variables included in this model, only the participants' scores on the KACCQ was a unique predictor of (and was positively associated with) their attitudes toward CIR, $b = .35, t = 4.73, p < .001$.

Comparison of Attitudes Toward CWC and CIR

To address the second goal of the present study, a 2 (Sex of Participant: Male vs. Female) \times 2 (Target: CWC vs. CIR) mixed ANOVA was conducted to examine the participants' attitudes toward these two targets. A main effect of Target revealed that CIR ($M = 3.98; SD = .73$) were rated more favorably than CWC ($M = 3.53; SD = .63$), $F(1, 191) = 79.63, p < .001, \eta_p^2 = .29$. In addition, a main effect of Sex of Participant revealed that the

female participants ($M = 3.86; SD = .66$) rated the children more favorably than did the male participants ($M = 3.59; SD = .68$), $F(1, 191) = 9.35, p = .003, \eta_p^2 = .05$. However, these main effects were qualified by a significant Sex of Participant \times Target interaction, $F(1, 191) = 4.50, p = .04, \eta_p^2 = .02$. Simple effects post hoc tests revealed that whereas the females ($M = 4.12; SD = .70$) rated CIR significantly more favorably than did the males ($M = 3.75; SD = .72$), $F(1, 191) = 12.29, p < .001$, there was no significant difference between females' ($M = 3.60; SD = .63$) and males' ($M = 3.43; SD = .64$) ratings of CWC, $F(1, 191) = 3.18, p = .08$.

Comparison of Ratings of CWC and CIR on the Big 5 Personality Traits

To further address the second goal of the present study, a 2 (Sex of Participant: Male vs. Female) \times 2 (Target: CWC vs. CIR) \times 5 (Big 5 Personality Traits) mixed ANOVA was conducted to examine the participants' ratings of these two child-targets on the Big 5 traits (McCrae & Costa, 2008). This analysis yielded significant main effects for Sex of Participant, $F(1, 189) = 13.45, p < .001, \eta_p^2 = .07$ [with the female participants generally rating the child-targets more favorably ($M = 4.21; SD = 1.09$) than the male participants ($M = 3.88; SD = 1.33$)], and Target, $F(1, 189) = 20.68, p < .001, \eta_p^2 = .10$. These main effects were qualified by a significant Target \times Big 5 Personality Traits interaction, $F(4, 756) = 8.13, p < .001, \eta_p^2 = .04$. Simple effects post hoc tests revealed that, in comparison with CWC, the participants agreed more strongly that CIR have the traits of being open to experience, extraverted, and emotionally stable (see Table 1). The three remaining interactions (i.e., Sex of Participant \times Target, Sex of Participant \times Big 5 Personality Traits, and Sex of Participant \times Target \times Big 5 Personality Traits) were not significant, $ps > 0.10$.

Discussion

Comparable to prior investigations focusing on other disorders (e.g., Ghanizadeh et al., 2006; Iobst et al., 2009; Nabors & Lehmkuhl, 2005), the

Table 1

Participants' Ratings of Children with Cancer (CWC) and Children in Remission (CIR) on the Big 5 Personality Traits: *M*s and *SD*s

	Target		Simple Effects $F(1, 190)$
	CWC	CIR	
Openness to Experience			
Mean	4.05	4.24	5.30*
(<i>SD</i>)	(1.29)	(1.22)	
Conscientiousness			
Mean	4.08	3.95	3.29
(<i>SD</i>)	(1.09)	(1.21)	
Extraversion			
Mean	4.04	4.37	15.18**
(<i>SD</i>)	(1.30)	(1.14)	
Agreeableness			
Mean	3.92	4.04	1.34
(<i>SD</i>)	(1.13)	(1.06)	
Emotional Stability			
Mean	3.85	4.34	26.54**
(<i>SD</i>)	(1.29)	(1.25)	

* $p < .05$; ** $p < .001$

Note. Openness to Experience denotes a willingness to try new things, intellectual curiosity, and creativity. Conscientiousness denotes a tendency to be careful, thorough, productive, and responsible. Extraversion denotes sociability and assertiveness. Agreeableness denotes pleasantness and respectfulness toward others, compassion, and trust in others. Emotional Stability (the inverse of Neuroticism) denotes relatively low levels of anxiety and depression.

present study revealed a positive relation between adults' knowledge about childhood cancer and more favorable attitudes toward children who have been diagnosed with this disease. However, it is noteworthy that this relation was found when the participants were asked to consider children whose cancer has been in remission for five or more years but not when they were asked to consider children who are currently undergoing treatment for cancer. Although the discrepancy in findings for these two targets cannot be explained by the present data, it is possible that adults' attitudes toward children whose cancer is "active" rather "under control" are associated with individual differences in the experience of strong emotional reactions to cancer (e.g., heightened fear that the children are in distress and may die) rather than individual differences in knowledge about cancer (see related discussion in Stern and Arenson, 1989).

As expected, the participants' ratings reflected more favorable attitudes toward children who are in remission than children who are currently undergoing treatment for cancer. Similarly, the participants agreed more strongly that children who are in remission have the

favorable traits of being open to experience, extraverted, and emotionally stable than do children with cancer. In comparison to children who have been cancer-free for five or more years, children who are undergoing treatment for cancer may be perceived as having to endure an unpleasant present and uncertain future that is assumed to have a negative, and potentially devastating, impact on various aspects of their physical, cognitive, and social-emotional development.

On the 11-item attitude measure, the female participants reported more favorable attitudes toward children whose cancer is in remission than did the male participants. With regard to the assessment of the Big 5 traits, however, the significant main effect of Sex of Participant reflected a general tendency for the female participants to have more favorable attitudes than the male participants toward children in remission *and* children who are currently undergoing treatment for cancer. This pattern of findings is consistent with prior research demonstrating that female adults tend to respond more favorably than male adults to children who have been diagnosed with cancer (Drury et al., 2005; Stern et al., 1991; Wiens & Gilbert, 2000), children who have been diagnosed with other disorders such as autism (Iobst et al., 2009) and cerebral palsy (Nabors & Lehmkuhl, 2005), as well as children with an undesirable characteristic, such as being extremely overweight or extremely aggressive (Wadian et al., 2019). The heightened favorable attitudes expressed toward these child-targets by women may be associated with their tendency to be more empathic than males (e.g., Rueckert & Naybar, 2008) as well as their general tendency to like children more than do males (Barnett & Sinisi, 1990).

Summary and Concluding Thoughts

The two primary goals of the present study were successfully addressed. With regard to the first goal, increased knowledge about childhood cancer was found to be (a) positively associated with relatively more favorable attitudes toward children who are in remission but (b) unrelated to

adults' attitudes toward children who are currently undergoing treatment for cancer. With regard to the second goal, whereas prior research has demonstrated that some adults have relatively unfavorable attitudes toward children who are in remission following treatment for cancer (Stern & Arenson, 1989; Stern et al., 1991; Vannatta et al., 1998; Wiens & Gilbert, 2000), the present findings suggest that the childhood cancer stereotype may actually be more severe for children who are currently undergoing treatment for cancer.

It should be noted that the results of the present study are limited by a reliance on self-report measures and a concern about external validity. More specifically, it is unclear whether the participants' reported attitudes toward *hypothetical* children who are undergoing treatment for cancer and children whose cancer is in remission accurately reflect the attitudes they would express if they had been asked to consider, or interact with, *actual* children from these two groups of young cancer patients. Future research, conducted in more naturalistic settings, is needed to identify those factors that may serve to mitigate adults' negative attitudes toward children in various phases of treatment for cancer so that these children may receive the support and love they need, not only to battle a terrible foe, but to live as normal a childhood as their condition allows.

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Appendix A

Knowledge About Childhood Cancer Questionnaire (KACCQ) (statement, *correct answer*, % of participants answering correctly)

1. In the United States, cancer is the leading cause of death by disease among children over 18 months of age. **True, 53.9%**
2. The chances of children with cancer living five or more years from the date of diagnosis are the same regardless of the specific type of cancer they have, including cancer of the bone marrow and blood (i.e., leukemia), immune system, bones, organs, and tissues. **False, 71.5%**
3. A large majority of cases of childhood cancer are first diagnosed during infancy. **False, 68.9%**
4. Today, the majority of children diagnosed with cancer are alive five years or more from the date of their initial diagnosis of cancer. **True, 71.5%**
5. Some children inherit DNA mutations from a parent that increase their risk of developing certain types of cancer. **True, 85.0%**
6. Children who are frequently exposed to high levels of radiation and/or other harmful pollutants (e.g., pesticides) are more likely to develop cancer than children who are not frequently exposed to these environmental factors. **True, 87.0%**
7. Leukemia (i.e., cancer of the bone marrow and blood) is the most common type of childhood cancer. **True, 89.6%**
8. A child with cancer tends to be more susceptible to bacterial infection than a child without cancer because of his/her weakened immune system. **True, 90.2%**
9. Cancer can spread (i.e., metastasize) to parts of a child's body that are far from the initial site of the tumor. **True, 89.1%**
10. If a child is diagnosed with having a tumor, it is always cancerous. **False, 88.6%**
11. Tumors can appear anywhere within a child's body, except his/her brain. **False, 89.1%**
12. Both boys and girls who are alive five years or more from the date of their initial diagnosis of cancer may experience infertility as adults as a result of being treated for cancer during their childhood. **True, 75.6%**
13. Children who are undergoing treatment for cancer, such as chemotherapy or radiation therapy, are a health risk to those around them. **False, 82.9%**

14. It is common for a child with cancer to undergo more than one form of treatment for the cancer (e.g., chemotherapy *and* radiation therapy). **True, 90.2%**
15. Children are often cured of cancer after a single treatment of chemotherapy or radiation therapy. **False, 80.3%**
16. All children with cancer who undergoing chemotherapy will lose their hair as a result of the chemotherapy. **False, 54.9%**
17. In general, children's bodies are less able to recover from high doses of chemotherapy than are adults' bodies. **False, 49.2%**
18. There are no medications available for children with cancer to help relieve the negative side effects of chemotherapy. **False, 81.3%**
19. Chemotherapy can only be administered to children with cancer through the use of oral medication (e.g., pills). **False, 78.8%**
20. For children with cancer, chemotherapy only kills cancer cells, not normal, healthy cells. **False, 79.8%**
21. Even if surgery performed on a child with cancer has successfully removed all of the cancer, chemotherapy and radiation therapy are always required as follow-up treatments. **False, 46.6%**
22. Unlike chemotherapy, radiation therapy does not cause cell damage in a child's body. **False, 81.9%**
23. When radiation therapy is used to treat cancer in a child, the same amount of radiation is used in the treatment regardless of the type of cancer the child has. **False, 76.2%**
24. Radiation therapy administered to a child with cancer can have a significant negative impact on the subsequent growth of the child's bones and muscles. **True, 80.8%**
25. Radiation therapy administered to a child with a particular kind of cancer (e.g., leukemia) can cause a second, unrelated cancer (e.g., brain tumor) to develop later in the child's life. **True, 56.5%**
26. Children who have undergone treatment for cancer and have been cancer-free for five years or more are a health risk to those around them. **False, 83.9%**
27. Children who have undergone treatment for cancer and have been cancer-free for five years or more are generally less physically healthy from that point on than children who have never had cancer. **False, 63.2%**
28. Children with cancer wear masks while they are being treated in a hospital because they pose a health risk to other individuals. **False, 83.4%**

29. Children who have been cancer-free for five or more years following their treatment for cancer generally do more poorly in school than children who have not had cancer. ***False, 80.8%***

30. Parents are often responsible for the onset of their child's cancer because of their failure to have their child fully vaccinated against serious diseases. ***False, 83.9%***

Appendix B

Attitude Questionnaire Regarding Children in Remission (CIR)

Instructions: In responding to this questionnaire, please complete the sentence with each of the words or phrases listed below. Then, please rate the extent to which you disagree or agree with each of the complete sentences using the 6-point scale below each of the words or phrases.

In comparison to children of the same age who have never had cancer, children who have undergone treatment for cancer and have been cancer-free for five or more years are generally ____ .

more emotionally fragile (-)

physically weaker (-)

sadder (-)

smaller in stature (-)

less angry

less empathic (i.e., less likely to share the feelings of others) (-)

more helpful to others

poorer students (-)

less athletic (-)

more sympathetic (i.e., more concerned about the welfare of others)

more anxious (-)

less willing to try new things (-)

more careful and thorough

less sociable (-)

more agreeable and pleasant

less emotionally stable (-)

Note. On the Attitude Questionnaire Regarding Children with Cancer (CWC), the statement read: "In comparison to children of the same age who have never had cancer, children who are undergoing treatment for cancer are generally ____ ."

The last five descriptors tap the Big 5 personality traits in order: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Emotional Stability (i.e., the inverse of Neuroticism).

(-) denotes items that were reverse scored

Effects of parenting styles and socioeconomic status on state-trait anxiety in college students

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Abstract - Research on the development of state-trait anxiety in children and adolescent has highlighted the role of parenting styles, but there is a breadth of research when it comes to connecting parenting styles and state-trait anxiety in young adults and in particular, college students. The way parental figures discipline, encourage, nurture, and raise their children can affect the child's development cognitively, psychologically, and physically. If parenting is not done properly and in ways that benefit the child, the overall functioning and development of the child can be severely impacted throughout adolescence and adulthood. The present study investigated the relationship between perceived parenting styles during childhood and state-trait anxiety in college students, socioeconomic status (SES) during childhood and state-trait anxiety in college students, and how the two variables of parenting styles and SES together correlated with state-trait anxiety. Surveys were administered that included four vignettes, each based on one of the four parenting styles and a State-Trait Anxiety Inventory for Adults to 112 undergraduate students at a small public university. When comparing parenting styles and SES to levels of both state and trait anxiety in college students, a non-statistically significant relationship was determined. When the variables were separated, a statistically significant relationship was found between state-trait anxiety and SES, but there was no relationship between parenting styles and reported state-trait anxiety. In addition, statistically significant relationships between state-trait anxiety and other variables were found in the study that were not originally hypothesized by researchers. Implications of these findings and future research are discussed.

Keywords: State-Trait Anxiety; Parenting Styles; Family Structure; Socioeconomic Status; Young Adults

Anxiety disorders are one of the most prevalent classes of psychiatric problems experienced by children; these disorders also remain consistent through childhood and into young adulthood (McLeod, Wood, & Weisz, 2006). Typically, anxiety can be placed into two categories: state and trait. State anxiety is characterized by the unpleasant feelings that present when exposed to specific situation, demands, and/or a particular object/event (Endler & Kocovski., 2001). Once that anxiety provoking object, situation, event, etc. diminishes, so does the anxiety. In contrast, trait anxiety is seen as a more stable personality characteristic rather than a temporary feeling as with state anxiety. Often with individuals that experience trait anxiety, their anxiety is prolonged and does not diminish after the threat has passed,

therefore, resulting in an intense and prolonged reaction. Additionally, the scope of anxiety-provoking events is much larger with those that experience trait anxiety. Unlike state anxiety, events that would not normally produce high levels of anxiety (e.g., walking past a fenced in yard) does for those that experience trait anxiety.

Research has suggested that parenting styles (authoritarian, authoritative, permissive, and neglectful) may be related to the development of state-trait anxiety in adolescents and young adults (Silva, Dorso, Azhar, & Renk 2007). Wolfradt, Hempel, and Miles (2001) examined perceived parenting styles and their effect on depersonalization, anxiety, and coping behaviors in adolescents who had been exposed to each style as child. Results indicated that perceived parental

psychological pressure (e.g., authoritarian parenting style) correlated positively with depersonalization and anxiety. In addition, perceived parental warmth (e.g., authoritative parenting style) had a positive association with active coping skills and a negative correlation with anxiety among adolescents.

In accordance with young adults, Aka and Gencoz (2014) examined the possible link between parenting styles, emotion recognition, and regulation, relative to psychological well-being in terms of social anxiety symptoms. Based on the models of emotional regulation development, maternal warmth (e.g., authoritative parenting style) correlated positively with the development of emotion regulation during childhood, therefore, reducing the likelihood of developing anxiety in young adulthood. Those who perceived their parent(s) as rejecting or aggressive (e.g., authoritarian parenting style) were more prone to becoming introverted, which may play a role in their development of anxiety symptoms in adulthood. Studies examining the relationship between early parenting styles and later psychopathology (e.g., clinical levels of anxiety) provide a few pieces of evidence that parenting styles, characterized by overprotection and low amount of nurture, may have predictable and meaningful influences on the development of anxiety (Erozkan, 2012).

Baumrind (1967) was one of the first researchers to define distinct parenting styles; she defined three styles of parenting based on research with pre-school aged children (authoritative, authoritarian, and permissive). In later years, researchers added a fourth parenting styles known as “uninvolved parenting”, more commonly known as “neglectful” (Maccoby and Martin, 1983). Baumrind defined authoritative parenting as high warmth, characterized by the granting of autonomy. Conversely, Baumrind conceived of authoritarian parenting as hostile and controlling. Permissive parenting is characterized as high in warmth but lacking in control. The most recently added as well as the least commonly practiced parenting style, “neglectful”, is defined by hostile parental figures who do not exert any control over

their children (Vignoli, et al., 2003). In terms of overall prevalence, the two most common parenting styles are authoritarian and authoritative.

Children raised with parent(s) that practice the authoritarian style typically grow up to be extremely self-centered and judgmental in adulthood, the same way their parent(s) were judgmental of them (Kulaksizoğlu, 1998). Based on this research, as they begin adulthood, children raised in an authoritarian parenting environment usually become either very aggressive, or withdrawn and tremendously anxious (Baumrind, 1967). Giakoumaki, et al. (2013) conducted a study in which 369 healthy adult males were administered an extensive amount of personality scales, including the State-Trait Anxiety Inventory and the Parental Bonding Instrument (PBI) to shed light on the effects of parenting on personality configuration. Findings of the study indicated that when compared to the optimal parenting group (low overprotection and high paternal care), anxiety was significantly higher in participants that experienced high maternal overprotection and low paternal care. Reitman and Asseff (2010) examined similar variables as Giakoumaki et al., (2013) however, they looked at maternal and paternal influences separately and the impact it had on anxiety in young adulthood. Results indicated that for all participants, perceptions of maternal control and paternal acceptance showed to have the strongest relation to anxiety in college-aged students. Based on the characteristics of parenting styles in the previously mentioned studies, it is easy to categorize these characteristics under a pessimistic parenting style (i.e., authoritarian, permissive, or neglectful), which can act as a potential predictor for anxiety symptoms later in life (Erozkan, 2012).

Although some linkage between parenting styles and psychopathology has been specifically established, the broader relationship between parenting styles and state-trait anxiety has only recently been explored. Specifically, this relationship has been studied in children and not as much in early adulthood typical of traditional college-age students. In varied clinical and sub-clinical samples of children, there are strong

links between parental rejection, control, anxiety symptoms, and diagnosed anxiety disorders (Chorpita, Brown, & Barlow, 1998). Similarly, various theorists have suggested that children and adolescents with parent(s) who adopt authoritarian parenting styles will experience greater anxiety (Seibel & Johnson, 2001).

Seibel and Johnson (2001) conducted a study on the development of psychopathology in college students and the role parental behavior played. Acceptance by both parent(s) was positively correlated with satisfaction of life, and negatively correlated with anxiety. Contradictorily, college students who viewed either of their parent(s) as rejecting or controlling (authoritative) were more likely to have higher scores on anxiety and lower scores on satisfaction of life. This study is one of the few that targets the role of parenting styles practiced in childhood, and also one of the few that has examined the effects of parenting styles on psychopathology in young adults. In addition, this study discovered a statistically significant relationship between anxiety and parenting styles. This was replicated by Mannuzza et al. (2002), who found that perceived parental pressure correlated positively with anxiety and anxiety sensitivity. Conversely, parental warmth was positively correlated with active coping and negatively correlated with general anxiety. These previous studies have all looked at parent(s) as a pair and not separately. Looking at parent(s) separately can give another perspective to the development of anxiety in correlation to parenting styles because each parent does not always practice the same parenting style.

Previous literature suggests that one of the important parenting roles for fathers is to engage in challenging parenting behavior. Furthermore, research suggests that fathers typically engage in challenging parental behaviors more often than mothers. Challenging parental behavior can include rough-and-tumble-play, encouragement of risk-taking, teasing, giving the child a fright, encouraging assertiveness, and letting the child lose a game. Research suggests that exposure to safe risks such as rough-and-tumble play are beneficial for the child and if fathers do not encourage these

interactions, the child is at risk of developing anxiety (Bögels & Phares, 2008). Additional research in this area suggests that challenging parenting behavior may buffer early separation, stranger, novelty and social anxiety.

A recent study implemented by Lazarus, et al. (2016) found results similar to that of previous literature: fathers reported more challenging parenting behaviors than mothers and the children of the fathers that engaged in challenging parental behaviors reported lower levels of anxiety, but only at the symptomatic level. For mothers, a significant relationship was found between challenging parenting behavior and child anxiety at both symptomatic and diagnostic levels: more challenging parenting behavior was associated with less child anxiety. Overall, results indicate that when both parent(s) engage in these challenging parental behaviors, the development of symptomatic anxiety is much lower than if these behaviors were not practiced. More specifically, if mothers engage in these challenging parental behaviors, the risk of diagnostic level anxiety is much lower, therefore, indicating that if mothers were to not engage in these behaviors, children would be at much higher risk for diagnostic level anxiety, but this is not the case with the parenting behaviors of the father. Although researchers have found a significant relationship between parenting styles and anxiety, other studies may indicate a low variance amongst the variables. McLeod, Wood, and Weisz (2006) found that parenting only accounted for 4% of the variance in children diagnosed with anxiety. The researchers did state that their findings were "...encouraging because they establish a reliable association between parenting and childhood anxiety (p. 169)." However, these findings are qualified by the fact that the association is modest.

The literature cited earlier certainly affirms that a strong association between parenting styles and childhood anxiety exist, but there is a lack of research on how the parenting styles of authoritarian, authoritative, permissive, and neglectful correlate to typical college students. College students are often overlooked in this particular area of study, due to the immense

number of studies analyzing the anxiety levels of children and adolescents in correlation to parenting styles. Yet college students tend to experience higher levels of academic stress within their lives, eventually leading to a large number of college-aged individuals struggling immensely with anxiety (Misra & McKean, 2000).

The intention of the present study is to find a main effect between parenting styles and state-trait anxiety in college students. Parenting styles that will be assessed are authoritarian and authoritative. Due to low sample size in the parenting style categories of permissive and neglectful, the researcher thought it would be most practical to exclude the two groups from the study. It is expected that those who indicate their parent(s) as having an authoritarian type of parenting style will report higher levels of state-trait anxiety than those who indicate their parent(s) as having an authoritative type of parenting style. In addition, the researcher intends to find a main effect between socioeconomic status (SES) of parent(s) during childhood and state-trait anxiety in college students. Researchers anticipate that participants who report their parent(s) as having a low SES (\$0 to \$49,999) during their childhood will have higher levels of state-trait anxiety when compared to those who report their parent(s) as having a higher SES (\$100,000 or higher). A third research question that will be assessed is if SES could influence parenting styles and if those variables together create a significant interaction effect with state-trait anxiety.

Method

Participants

Participants in this study included 112 on-campus, undergraduate Fort Hays State University students. Of these participants there were 76 females, 34 males, one selected "prefer not to say", and one indicated "other". To avoid sampling from protected populations, individuals under the age of 18 and above the age of 65 were excluded from the study. Participants ages ranged from 18 to 41 where the mean age of the sample was 19.36 years ($SD = 2.53$). The sample was primarily Caucasian ($n = 91$), which was suspected based

upon the geographical location of Midwest Kansas. All participants were volunteers and those that participated received some type of extra course credit established by their professor.

Materials

Informed consent forms were used and handed out to participants prior to participating in the survey. The consent form included: purpose of research, why participants are being asked to participate, what the study involves, possible benefits and risk to participating, possible forms of compensation, privacy protection protocol, availability of counseling services, and contact information of the researchers. The survey included four basic demographic questions along with a question specific to their current family structure (e.g., parent(s) together, divorced, absent mother/father, both absent parent, adopted, foster care). A section was included that also asked participants what their parent(s)' approximate range of annual income was, and whether or not that annual income ever drastically increased or decreased throughout any point in their childhood.

Parenting Style Scale

Based on previous literature, four self-compiled vignettes were created and used in the survey to describe the four identified parenting styles (e.g., authoritarian, authoritative, permissive, and neglectful). Participants were asked to select which description best fit their parent(s) parenting style during childhood. Each vignette was compiled of several descriptors. The authoritative vignette included descriptors like, "parent(s) had clear rules and expectations", "punishments were given along with explanation", etc. The authoritarian vignette included descriptors like: "parent(s) were demanding and had very strict rules", "parent(s) had a low amount of patience", etc. The permissive vignette included descriptors like: "parent(s) had little to no set rules within the home", "parent(s) seemed more like a friend rather than an authority figure", etc. Neglectful vignette: "parent(s) did not supervise you", "parent(s) expressed little love/affection towards you", etc. Participants were not informed of what parenting style matched with

what vignette. See appendix A to review the parenting styles vignettes.

Anxiety Measure

Additionally, the State-Trait Anxiety Inventory for Adults (STAI) (Spielberger et al. 1983), was administered to all participants. The STAI was measured on a 4-point Likert-scale in which participants were asked to select what number on the scale indicated how they feel right now, that is, at this moment. Participants were asked to answer all 40 scaling items in the STAI. The first 20 scaling items indicated state anxiety and the last 20 items indicated trait anxiety. Participants were not informed of what scale items matched with the specific anxiety measure. Examples of scale items to which participants were exposed included “I am presently worrying over possible misfortunes (state anxiety measure)” and “I lack self-confidence (trait anxiety measure).”

Procedure

All studies were conducted in classrooms on Fort Hays State University campus and all participants were exposed to the study/survey in the beginning of class. Four researchers assisted in implementing the study in the participants’ classroom. Researchers waited until all participants were in class (each classroom had classes ranging from approximately 30 to 60 students) to begin the study. All participants were given two consent forms and asked to read and sign one and keep the other for themselves. After obtaining consent, the consent forms were collected and stored; participants were then given the survey packet. The researcher explained that they may cease participation at any time without penalty. The researcher then asked participants to read all questions carefully and fill them out to the best of their ability. After the surveys were completed and collected, participants were administered debriefing forms, were verbally debriefed by the research, and were told the study was looking for a correlation between parenting styles, SES and state-trait anxiety. The participants were then given the opportunity to ask any questions and were thanked for their participation and cooperation in

this study. The survey took approximately ten minutes to complete and the study took a total time of 15 to 20 minutes.

Results

Standard data cleaning procedures were utilized. The data were screened for missing data; for missing raw scores, the average score was inserted in place of the missing data. Participants who did not complete at least 10% of the survey were not used in the analyses. Examination of the histograms indicated that the distribution shapes for each of the variables were normally distributed; skewness and kurtosis were used as an additional measure of distribution. For each variable of interest, the skewness and kurtosis were acceptable. Furthermore, reliability for the state-trait anxiety inventory was assessed using Cronbach’s alpha. It was determined that the items used to assess anxiety possess strong reliability ($\alpha = .96$). Factorial ANOVAs were used to assess the effect of parenting style (i.e., authoritative and authoritarian) and parent(s) socioeconomic status (i.e., \$0-\$49,999; \$50,000-\$99,999; \$100,000 or higher) on trait and state anxiety.

State Anxiety

A between subjects 2x3 factorial ANOVA was conducted. Results indicate a significant main effect of socioeconomic status on state anxiety [$F(2, 93) = 3.26, p = .04, \text{partial } \eta^2 = .07$]. Post-hoc comparisons using the Tukey HSD multiple comparison procedure were used to determine if participants that identified their parent(s) as having the lowest level of annual income (\$0-\$49,999) reported more state anxiety than the \$50,000 to \$99,999 and \$100,000 or higher groups. The post-hoc test revealed that participants indicating that their parents had an average annual income of \$0 to \$49,999 ($M = 45.11, SD = 11.17$) reported more state anxiety than participants in the \$100,000 or higher ($M = 35.03, SD = 10.21$) category. Additionally, those that selected the \$50,000 to \$99,999 ($M = 43.82, SD = 12.20$) range reported more state anxiety than those who selected the \$100,000 or higher ($M = 35.05, SD = 10.21$) range. However, there was no difference

between those that selected \$0-\$49,999 ($M = 4.11$, $SD = 11.17$) and \$50,000 to \$99,999 ($M = 43.82$, $SD = 12.20$) as their parent(s) annual income during their childhood. Overall, the results support the tested hypothesis. However, a significant main effect of parenting styles on state anxiety was not found [$F(1, 93) = .29$, $p = .59$, partial $\eta^2 = .003$]. Further, a significant interaction between parenting styles and parent(s) SES was not found [$F(2, 93) = .60$, $p = .55$, partial $\eta^2 = .01$]. See Table 1 for a complete list of descriptive information.

Table 1

Means and standard deviations for state anxiety as a function of a 2(parenting style) X 3(parent(s) average annual income range) design

Parenting Style	Parent(s) Average Annual Income Range						Total Parenting Style	
	\$0 - \$49,999		\$50,000 - \$99,999		\$100,000 or higher		M	SD
	M	SD	M	SD	M	SD		
Authoritative	43.58	10.76	44.12	13.00	34.94	10.63	40.13	12.33
Authoritarian	50.00	12.27	42.17	6.79	36.00	1.73	43.64	9.72
Total Income Range	45.11	11.17	43.82	12.20	35.03	10.21		

Note. M and SD represent mean and standard deviation, respectively.

Trait Anxiety

A between subjects 2x3 factorial ANOVA also was used to assess for the effect of parenting styles and parents' SES on trait anxiety. Results indicate a significant main effect of socioeconomic status on trait anxiety [$F(2, 93) = 3.63$, $p = .03$, partial $\eta^2 = .07$]. Post-hoc comparisons using the Tukey HSD multiple comparison procedure were also used to determine if participants that identified their parent(s) as having the lowest level of annual income (\$0-\$49,999) reported more trait anxiety than the \$50,000 to \$99,999 and \$100,000 or higher groups. Similar to that of state anxiety, the post-hoc test revealed that participants who indicated that their parents had an average annual income of \$0 to \$49,999 ($M = 45.95$, $SD = 11.38$) reported more trait anxiety than participants in the \$100,000 or higher ($M = 36.44$, $SD = 11.34$) category. Additionally, those that selected the \$50,000 to \$99,999 ($M = 47.38$, $SD = 11.83$) range reported more trait anxiety than those who selected the \$100,000 or higher ($M = 36.44$, $SD = 11.34$) range. However, there was no difference between

those that selected \$0 to \$49,999 ($M = 45.95$, $SD = 11.38$) and \$50,000 to \$99,999 ($M = 47.38$, $SD = 11.83$) as their parent(s) annual income during their childhood. Overall, these results also support the tested hypothesis. Similar to the results found for state anxiety, a significant main effect was not found with parenting styles and trait anxiety [$F(1, 93) = 1.69$, $p = .20$, partial $\eta^2 = .02$]. A significant interaction also was not found [$F(2, 93) = .95$, $p = .39$, partial $\eta^2 = .02$]. See Table 2 for a complete list of descriptive information.

Table 2

Means and standard deviations for trait anxiety as a function of a 2(parenting style) X 3(parent(s) average annual income range) design

Parenting Style	Parent(s) Average Annual Income Range						Total Parenting Style	
	\$0 - \$49,999		\$50,000 - \$99,999		\$100,000 or higher		M	SD
	M	SD	M	SD	M	SD		
Authoritative	43.38	10.25	47.33	12.48	36.25	11.76	41.89	12.70
Authoritarian	54.20	11.90	47.67	8.24	38.67	3.79	48.07	10.34
Total Income Range	45.95	11.38	47.38	11.83	36.44	11.34		

Note. M and SD represent mean and standard deviation, respectively.

Additional Analyses

The researcher also found statistically significant relationships with other variables that were not originally planned to be tested in this study. A one-way between subjects ANOVA was conducted to compare current family structure on state anxiety. Eight types of family structures were induced (i.e., parents together; parents divorced; absent mother; absent father; both parents absent; adopted; foster care; other). Results of the omnibus test indicated that there was a significant difference between family structure and levels of state anxiety [$F(4, 107) = 2.85$, $p = .03$]. Participants that currently have both parents still together ($M = 39.71$, $SD = 11.81$) tend to have less state anxiety, whereas those with an absent father ($M = 56.20$, $SD = 12.95$) have the highest amount of state anxiety.

Corresponding with state anxiety, the researcher also found statistically significant relationships with other variables when compared to trait anxiety. An additional one-way between subjects ANOVA was conducted to compare current family structure on trait anxiety. Again, eight types

of family structures were induced (i.e., parents together; parents divorced; absent mother; absent father; both parents absent; adopted; foster care; other). Results of the omnibus test indicated that there was a significant difference between family structure and levels of trait anxiety [$F(4, 107) = 2.76, p = .03$]. Participants that currently have both parents still together ($M = 42.39, SD = 12.37$) tend to have less trait anxiety, whereas those with an absent father ($M = 58.20, SD = 9.86$) have the highest amount of trait anxiety.

Additionally, an independent samples *t*-test was performed to assess whether trait anxiety scores differed significantly for a group of 34 male participants and a group of 76 female participants. The assumption of homogeneity of variance was assessed by Levene's test, $F = 2.75, p = .10$. This indicated no significant violation of the equal variance assumption; therefore, the equal variances assumed version of the *t*-test was used. Trait anxiety scores differed significantly between the groups, $t(108) = -2.39, p = .02$. Mean trait anxiety levels for the female participants ($M = 45.72, SD = 13.10$) were higher than mean trait anxiety levels for the male participants ($M = 39.65, SD = 1.77$). These results support previous research that women tend to experience more anxiety than men.

Discussion

As initially hypothesized, there was a statistically significant relationship between parents' socioeconomic status and both state and trait anxiety. The lower the income range of parent(s) during the participants' childhood indicated higher levels of state-trait anxiety in young adulthood. In support of previously conducted research, those that grew up in a household that was classified at the poverty or low-income level experienced high levels of trait anxiety. Santiago, Wadsworth, and Stump (2008) examined SES, income, neighborhood disadvantage, and poverty-related stress as a predictor of a wide range of psychological problems. With their findings, they came to the conclusion that those living in poverty experienced a toll on their mental health and were more likely to experience psychological problems, like anxiety.

Furthermore, those that grew up in a home with their parent's annual income being \$100,000 or higher experienced the lowest level of trait anxiety. Our findings provide promising evidence that parenting styles directly correlate with the development of trait anxiety in young adults. In addition, we explored an area that hasn't been studied in-depth and found a statistically significant relationship between SES growing up and trait anxiety later on in life.

Family structure also had a significant relationship with trait anxiety—both parent(s) together negatively correlated with trait anxiety. Siebel and Johnson (2001) found similar results—acceptance by both parent(s) was positively correlated with satisfaction of life and negatively correlated with trait anxiety. In addition, those that had either an absent father or mother experienced the most trait anxiety in the present day. There is a breadth of literature that has found a relationship amongst these variables, nonetheless with young adults. With our results indicating a statistically significant relationship between family structure and trait anxiety, we are able to come to the conclusion that having both a maternal and paternal parental figure in the home decreased the likelihood of the child developing trait anxiety in young adulthood, whereas having a less structurally sound home (e.g. separation of parent(s), absent parent(s), etc.) increases the likelihood of developing trait anxiety in young adulthood.

Limitations

When further examining the groups for parenting styles, the sample sizes appeared to be fairly skewed - there were 88 people in the authoritative group, only 15 in the authoritarian group, five in permissive, and two in neglectful. This unequal sample size between groups could account for why there is not a main effect of parenting styles. It would be beneficial for future studies to have a larger and equal sample size amongst all parenting styles to make the results more reliable and conceptually accurate. Results indicated there were fairly low effect sizes for both state and trait anxiety (partial $\eta^2 = .07$). Although there was a significant difference in both

state and trait anxiety in relation to the parent(s) SES, the difference between the groups is fairly small and weak. However, even though the effect size was weak amongst the groups, these findings still contribute useful information with respect to state and trait anxiety indicated by the significance found in the analysis.

College students were asked to make a retrospective recollection of how their parent(s) practiced parenting throughout their childhood. As a result, the findings of this particular study are at a risk for possible memory gaps and incorrect recall of events. Furthermore, the sample consisted of college students primarily on Fort Hays State University campus. These participants represent a convenience sample. The generalizability of these findings needs to be shown through replication in more settings and geographical locations. Finally, our study did not account for predisposed factors (e.g., relationships with non-parental figures, presence of traumatic events, other psychological problems) that could contribute to the development of state-trait anxiety. Therefore, we cannot say the causation for the development of state and/or trait anxiety in young adults is the direct result of parenting styles and/or SES. These variables are only one factor that can lead to the development of state-trait anxiety.

Despite these limitations, there is still a clear problem in accordance with family structure and parent(s) average annual income (socioeconomic status) in comparison to the development of state-trait anxiety in young adulthood. It is difficult to educate individuals on how to minimize the effects of these specific variables on state-trait anxiety, but that does not mean the information is of less importance and should be ignored. Although these variables are difficult to control, they could be mitigated by counteracting them with other controllable variables like positive parental figures and a nurturing home. Children are more likely to mimic their parents' actions, thus, if the parent(s) engaged in hostile or negative behaviors towards their child, the child will likely behave in a negative way and engage in more hostile behaviors, therefore, making them more prone to anxious tendencies. Whereas,

if parent(s) are nurturing or use positive reinforcement, that child is more likely to thrive off of those actions and experience life in a positive light. Knowing this, it would be best to minimize these "uncontrollable" variables by educating parent(s) on the importance of positive parenting styles, making them more aware of how their parenting can affect the development of their children. Continuing research in this area may provide valuable feedback to parent(s) about adequate parenting styles, as well as mitigating factors that could be beneficial in decreasing the likelihood of their child developing state-trait anxiety in young adulthood.

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Appendix A

Please check *ONE* of the following boxes that best describes your parent(s) or guardian(s) parenting style throughout the majority of your life before college.

<input type="checkbox"/> This description best fits my parent(s)/guardian(s):	<input type="checkbox"/> This description best fits my parent(s)/guardian(s):
<ul style="list-style-type: none"> - parent(s) were demanding and had very strict rules - parent(s) expected rules to be followed without question - parent(s) viewed as authority figures - if rules were broken, punishment was the consequence - punishments were often harsh, even for minor mistakes, and sometimes without explanation - choices/options were not given to children; “my way or the highway” - parent(s) had low amount of patience - you feel your parent(s) didn’t trust you to make good choices on your own - your parent(s) often made you feel ashamed of your mistakes 	<ul style="list-style-type: none"> - parent(s) had clear rules and expectations - parent(s) give reasons for the rules they set; NOT just “because I said so” - punishments were given along with explanations - parent(s) listened to your opinions and had a democratic attitude - open line of communication between you and your parent(s) - you were given independence and/or freedom to make your own decisions - you feel your parents trust you to make good decisions - criticism and praise were given in balanced amounts - parent(s) did not make you feel ashamed of your mistakes - parent(s) had high amounts of patience
<input type="checkbox"/> This description best fits my parent(s)/guardian(s):	<input type="checkbox"/> This description best fits my parent(s)/guardian(s):
<ul style="list-style-type: none"> - parent(s) had little to no set rules within the home - parent (s) did not clearly expect mature behavior - parent (s) seemed more like a friend rather than an authority figure - parent (s) seemed to give you what you wanted when you wanted it regardless of consequences - you had no set bedtime or curfew - praise was given more than criticism within your household - Parent (s) prioritized your needs above their own - Parent (s) seemed to be encouraging/indifferent of risky behavior 	<ul style="list-style-type: none"> - parent(s) did not supervise you - parent(s) expressed little love/affection towards you - parent(s) had few or no expectations or demands for behavior - parent(s) often did not spend time with you or were too busy with their own problems - parent(s) often uninvolved and unaware of what children or doing or where they are - parent(s) were indifferent and dismissed concerns or problems children had - you feel you had to learn most life lessons on your own, without parental guidance

Irish and U.S. adults' religious, sexual, and feminist beliefs

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Abstract - We examined the shame and guilt surrounding sexual, feminist, and religious views. To expand the current knowledge, we recruited both an American and Irish sample, the first study to do so. Because of highly publicized tensions in Ireland related to Catholicism and abortion laws, we hypothesized that Irish adults would score higher on shame and guilt regarding sex and feminism. We also explored their attitudes toward religious fundamentalism. Participants were 134 young adults (60% women; 50% Caucasian) with a mean age of 21.26 ($SD = 5.17$). Sixty percent were United States citizens, and 40% were Republic of Ireland citizens. Participants responded to the following scales: Religious Fundamentalism, Liberal Feminist Attitude and Ideology, Feminist Self-Identification, and Brief Sexual Attitudes. After each scale, participants responded to the State Shame and Guilt Scale. We also asked participants to evaluate how similar they were to their friends, family, and society regarding each of these issues. Young adults across cultures were similar in their support of feminism but differed in their religious and sexual beliefs. Irish participants held more religiously traditional attitudes, but were less likely to attend church and share religious beliefs with their family. Across participants, traditional religious views predicted more shame and secretiveness. Irish participants' sexuality was more conservative and influenced by their society. Across participants, matching societal values was associated with sexual conservatism, while matching family values was associated with sexual openness. These findings suggest that the influence of family versus society may differentiate Irish and American young adults.

Ireland has historically been primarily Catholic with Protestants as the second most dominant religious group (Goeke-Morey et al., 2015). Religious affiliation, ethnic identity, social standing and national loyalty are strongly intertwined with very homogeneous geographic regions (Shirlow & Murtagh, 2006). However, the recent influx of immigrants has increased the religious diversity (Faas, Smith, & Darmody, 2018) and led to dramatic changes in social laws, such as those related to abortion (Bloomer & O'Dowd, 2014). Thus, an examination of Irish adults' religiosity and sexuality in the midst of this cultural shift is both timely and socially relevant. A comparison between Irish and U.S. adults is also timely, as the changes in Ireland have been largely attributed to western influences (Canavan, 2012).

Cross-cultural research between the United States and the Republic of Ireland is relatively limited. Recent researchers have focused on a

variety of health issues, such as the prevalence of hypertension (Mosca & Kenny, 2014), rates of antidepressant use (Wilby, Herrmann, & Mamdani, 2013), treatment method for children with autism (Robinson & Bond, 2017), and clinical supervision practices (Ellis, Creaner, Hutman, & Timulak, 2015). Other researchers have compared the United States and Ireland as part of a larger multi-national comparison of children and adolescents (e.g., Gantschnig, Fisher, Page, Meichtry, & Nilsson, 2015; Labhart, Ferris, Winstock, & Kuntsche, 2017; terBogt et al., 2014). We could not find recent research comparing these two countries regarding their citizens' religiosity and sexual behavior.

Despite the lack of research comparing the sexuality and religion of the United States and Ireland, researchers have examined these factors with U.S. samples. The data suggest that religion and sexuality are highly interconnected.

Religion and Sexuality

Previous research with U.S. samples provides consistent evidence that religion affects sexuality. For example, Regnerus (2005) reported that commitment to conservative religious beliefs predicted more conservative sexual attitudes. More recently, researchers found that adherence to traditional religiosity served as a protective factor against risky sexual behavior, but also increased negative feelings about sex (Murray, Ciarrocchi, & Murray-Swank, 2007; Sellers, 2017; Van Tongeren, Newbound, & Johnson, 2016). Sexuality also affects religiosity. Aalsma et al. (2013) reported that as young women first became sexually active, their sexual conservatism and religiosity decreased for a period of 12 months then returned to baseline levels after one year.

Religion and sexuality reveal emotional connections. Researchers have specifically identified shame and guilt as two relevant affective states. Thus, we included those in our study.

Shame and Guilt

Shame and guilt are two negative emotions linked to both sexuality (e.g., Mercer, 2018) and religious commitment (e.g., Park, 2016). Hackathorn et al. (2016) found that sexual guilt is negatively associated with sexual satisfaction and positively associated with conservative religiosity. Shame is a passive emotion that elicits a negative self-perception in individuals experiencing it, while guilt is attached to the behavior rather than the transgressor and motivates reconciliation (Helm, Berez, & Nelson, 2001; Tangney, 1995). The concepts of shame and guilt are culturally driven (Lewandowska-Tomaszczyk & Wilson, 2017); however, cross-cultural research on this topic has been primarily limited to Asian (collectivist) versus Western (individualistic) cultures (e.g., Bedford & Hwang, 2003; Sznycer et al., 2012).

There are also gender differences associated with shame and guilt, with women reporting higher levels of shame and guilt than men (Orth, Robins, & Soto, 2010). Thus, we also examined beliefs about women's rights.

Feminism

Feminism is another topic studied in the United States in the context of religion and sex. For example, Shulman and Horne (2006) reported a negative relationship between feminist beliefs and sex guilt, while Nelson-Blake (2019) reported conflict between feminist ideology and conservative religious ideals. Agreement with feminism also predicts social behaviors. Conlin and Heesacker (2016) revealed a strong, positive association between feminism and activism for gender equality. Conversely, Linder (2015) found that feminists who experienced feelings of shame or guilt related to their feminist beliefs were less likely to participate in feminist-related behaviors such as marches or rallies. A cross-cultural study revealed that educated women in Afghanistan had similar feminist beliefs to those in Western countries (Brotsky et. al, 2012). Additional research on cross-cultural feminist beliefs is scarce.

Current Study

Given the interconnections among religiosity, sexual behavior, and feminism and the lack of cross-cultural examinations, we compared Irish and U.S. adults on these variables.

Participants responded to a set of scales related to religion, feminism, and sexuality. After each of these sections, participants responded to a shame and guilt scale. We had four predictions for our study:

- 1) Because of the historical religious conservatism of Ireland, we hypothesized that Irish participants would have more fundamentalist beliefs and be more religiously fundamental than U.S. citizens.
- 2) We hypothesized that, similar to previous researchers (e.g., Hackathorn et al., 2016), having more fundamentalist views would relate to increased levels of shame and guilt.
- 3) Again, because of the historical religious conservatism of Ireland, we hypothesized that U.S. adults would be more open about sex than Irish participants.
- 4) We hypothesized that U.S. adults and Irish adults would have similar levels of feminist beliefs, reflecting the changing Irish culture and in line

with (the limited) previous research documenting cross-cultural similarities (Brodsky et al., 2012).

Method

Participants

Participants were 122 young adults with a mean age of 21.33 ($SD = 5.19$); all participants were over the age of 18. Winthrop University's Institutional Review Board approved the protocol. Our participants were 73 women, 21 men, and 1 gender fluid individual; 27 participants did not provide gender data. Regarding race, 61 participants were White/Caucasian, 22 were Black/African American, and the remainder reported other racial identities. Participants were comprised of 60% United States citizens and 40% citizens of the Republic of Ireland. Irish participants were recruited with the permission of Dublin Business School's Psychology department through undergraduate classrooms.

A comparison of our two cultural groups revealed that Irish participants ($M = 23.26$, $SD = 3.47$) were significantly older than U.S. participants ($M = 20.18$, $SD = 6.84$), $t(117) = -3.25$, $p = .002$. Chi-squares tests of independence confirmed that the two groups were equivalent for gender $\chi^2(1) = 3.77$, $p = .71$, *ns*; however, they differed in terms of reported ethnic identity, with the Irish sample not including any Black/African Americans $\chi^2(5) = 34.90$, $p < .001$.

Materials

We used the Religious Fundamentalism Scale of the Minnesota Multiphasic Personality Inventory to measure conservative or traditional religious beliefs (Helm, Berecz, & Nelson, 2001). This scale has two 8-item sub-scales, measuring traditional and pluralistic religious beliefs. A sample statement from the traditional sub-scale is "As society changes, religion should change too." A sample statement from the pluralistic sub-scale is "Religions other than mine are half-truths at best." Participants responded on a 4-point scale, where 1 represented "totally agree" and 4 represented "totally disagree." We achieved a reliability of .83 on the traditional beliefs sub-scale, and .57 on the pluralistic beliefs sub-scale.

We used the short form of the Liberal Feminist Attitude and Ideology Scale (LFAIS) to measure feminist beliefs (Morgan, 1996). The higher a participant scored on this scale, the more feminist beliefs they held. A sample statement from this scale is "Women should have equal job opportunities as men," with response options ranging from 1 representing "strongly disagree" to 5 representing "strongly agree." The author's published reliability for the scale is .94 (Morgan, 1996), and we achieved a reliability of .83. Participants also responded to the Feminist Self-Identification (Conlin & Heesacker, 2016), a single question that asked participants to self-identify as a feminist or not.

To assess attitudes toward casual sex, we used the permissiveness sub-scale of the Brief Sexual Attitudes Scale (Hendrick, Hendrick, & Reich, 2006). A sample statement of this scale is "I do not need to be committed to a person to have sex with him/her," with responses on a 5-point scale from "strongly agree" to "strongly disagree." A higher score indicated greater acceptance of casual sex. The authors' published reliability for the scale is .92 (Hendrick et al., 2006), and we achieved a reliability of .91.

We also used the State Shame and Guilt Scale (SSGS) to assess levels of shame and guilt (Marschall, Sanftner, & Tangney, 1994). The shame and guilt sub-scales had five items each, with a higher score indicating greater shame or guilt. An example of a shame statement is "I want to sink into the floor and disappear." An example of a statement assessing guilt is "I feel remorse, regret." Responses were made on a 5-point scale where 1 represented "not feeling this way at all" and 5 represented "feeling this way very strongly." The published reliability for shame is .89, and for guilt is .82 (Wright & Gudjonsson, 2007). We provided this scale after each section (e.g., religiosity, sex, feminism) of our survey. The reliability we achieved was .89 for religious shame, .90 for religious guilt, .93 for feminism shame, .96 for feminism guilt, .95 for sex shame, and .95 for sex guilt.

We developed three statements to assess how closely participants believed their attitudes aligned with those of their friends, family, and

society. A sample statement is “My religious beliefs are similar to those of my family.” We developed three additional statements to assess how comfortable participants felt talking openly about their beliefs (see appendix). A sample statement is “I feel comfortable talking openly in public about my religion.” Participants responded to the researcher-developed statements on a Likert-type scale where 1 represented “strongly disagree” and 5 represented “strongly agree.”

Procedure

Participants responded to scales in the following order: Religious Fundamentalism (Helm et al., 2001), LFAIS (Morgan, 1996), Feminist Self-Identification (Conlin & Heesacker, 2016), and Brief Sexual Attitudes (Hendrick, Hendrick & Reich, 2006). After each section, participants responded to the SSGS (Marschall, Sanftner & Tangney, 1994) and the three statements regarding how similar participants’ beliefs were to their friends, family, and society. The SSGS was used after each section of the survey in order to assess shame and guilt related specifically to that topic (religion, sex and feminism). Last, participants responded to demographic questions that assessed gender, ethnicity, age, sexual orientation, and country of origin, and three statements evaluating how comfortable participants were talking about their sexual and religious beliefs.

Results

We compared U.S. and Irish participants using independent *t*-tests. We assessed relations among variables with Pearson’s correlations.

Religion

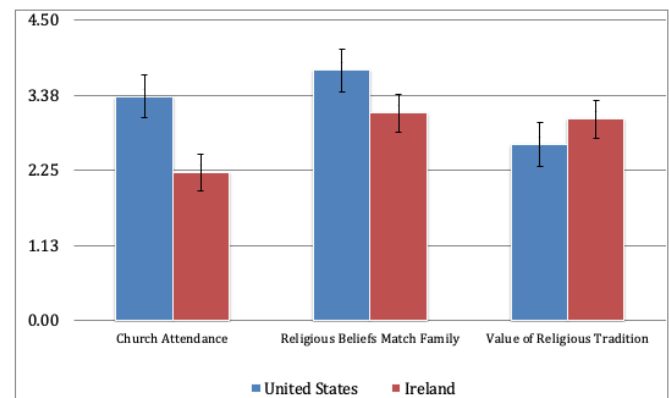
Compared to U.S. adults, Irish participants valued religious tradition more, $t(119) = -3.69, p < .001$, but attended church less, $t(119) = 4.77, p < .001$. Irish participants’ beliefs matched those of their families less than U.S. adults, $t(119) = 2.85, p = .005$. See Figure 1. Levels of religious-related shame, $t(117) = .017, p = .97, ns$, and guilt, $t(117) = .222, p = .83, ns$, were similar for the two groups. Both cultures collectively reported low levels of shame and guilt related to their religion (shame M

$= 1.90, SD = 1.00$; guilt $M = 2.06, SD = 1.10$).

Across cultures, the more traditional participants’ religious views were, the more shame they reported, $r(134) = .21, p = .016$, and the less comfortable they were talking openly about religion, $r(124) = -.21, p = .021$. These represent weak correlations.

Figure 1

Participants’ religious comparisons in the United States and Ireland.



Note. Compared to U.S. adults, Irish participants valued religious tradition more, $t(119) = -3.69, p < .001$, but attended church less, $t(119) = 4.77, p < .001$. Irish participants’ beliefs matched those of their families less than U.S. adults, $t(119) = 2.85, p = .005$.

Sex

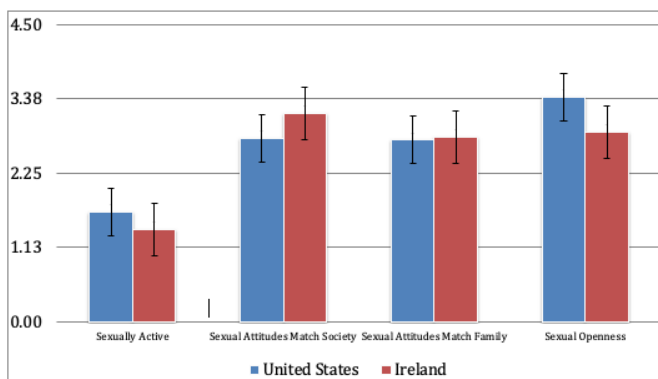
Compared to U.S. adults participants, Irish adults were less sexually active, $t(119) = 2.11, p = .037$, less sexually open, $t(199) = 3.03, p = .003$, and more likely to agree that their sexual attitudes mirrored their society, $t(118) = -2.02, p = .046$. The two groups did not differ on how much they agreed their sexual attitudes matched their families, $t(121) = .67, p = .46, ns$. See Figure 2.

Levels of sexuality-related shame $t(115) = .322, p = .75, ns$, and guilt $t(115) = -.116, p = .91, ns$, were similar for the two groups. Both cultures collectively reported low levels of shame and guilt related to their sexuality (shame $M = 1.57, SD = .94$; guilt $M = 1.67, SD = .99$). Across cultures, the more participants’ sexual attitudes matched those of their

family, the lower their sexual shame $r(122) = -.21$, $p = .026$, a weak correlation, and the higher their sexual openness $r(124) = .35$, $p < .001$, a moderate correlation [KW1]. Sexually open adults perceived themselves to be less similar to the society around them $r(123) = -.34$, $p < .001$, a moderate correlation. Across cultures, participants who felt more shame associated with religion were also less sexually open $r(126) = -.18$, $p = .047$, representing a weak correlation.

Figure 2

Figure 2. Participants' sexuality comparisons in the United States and Ireland.



Note. Compared to U.S. adults participants, Irish adults were less sexually active, $t(119) = 2.11$, $p = .037$, less sexually open, $t(199) = 3.03$, $p = .003$, and more likely to agree that their sexual attitudes mirrored their society, $t(118) = -2.02$, $p = .046$. The two groups did not differ on how much they agreed their sexual attitudes matched their families, $t(121) = .67$, $p = .46$, ns.

Feminism

Both cultures shared similar and high levels of pro-feminist attitudes $t(119) = .429$, $p = .67$, ns. On a 5-point scale, the mean for Irish participants was 4.27 ($SD = .44$), and the mean for U.S. adults participants was 4.22 ($SD = .59$). Levels of feminism-related shame $t(115) = .488$, $p = .63$, ns, and guilt $t(115) = .297$, $p = .77$, ns, were also similar for the two groups. Both cultures reported low levels of shame and guilt related to their feminist

beliefs (shame $M = 1.57$, $SD = .94$; guilt $M = 1.67$, $SD = .99$). Across cultures, our only significant correlation was that feminist adherents were more likely to agree that their beliefs were similar to their close friends $r(127) = .21$, $p = .016$, representing a weak correlation.

Discussion

Religion

Supporting our first hypothesis, Irish participants placed more value on traditional religious theology than did U.S. adults. As previously discussed, Irish culture is deeply interwoven with Catholicism, the longest-standing denomination of Christianity, characterized by strong traditions. Thus, Irish culture encourages adherence to traditional religious theology. Despite the importance they attached to religious tradition, Irish adults attended church less frequently than did U.S. adults. Furthermore, Irish adults were more likely to agree that their religious beliefs matched those of their family. Our participants were young adults, and these outcomes might reflect generational differences in the midst of a changing Irish culture. As Ireland slowly diverges from its historical affiliation with Catholicism, younger people experience greater freedom from Catholic social norms in comparison to older adults (Bloomer & O'Dowd, 2014). A recent church-sanctioned study found that young adults perceive church attendance as an optional aspect of their religious faith, while older adults do not (MacDonald, 2017).

Adults in both cultures reported low levels of shame and guilt related to their religious beliefs and practice. However, supporting our second hypothesis, the more traditional participants' religious views were, the more religious shame they reported and the less comfortable they were talking openly about their religion. One explanation receiving recent media attention in the United States is that traditional religions have clear expectations about moral behavior, which elicits shame in young adults who fail to meet the standard (Ley, 2017).

Sex

Supporting our third hypothesis, Irish adults were less sexually active and open than their U.S. counterparts. In Ireland, most schools, both private and publicly funded, are Catholic and thus, the sex education taught in schools is from this denominational perspective (Faas, Darmody, & Sokolowska, 2016; Sherlock, 2012). Catholic tradition forbids sex outside of marriage, which could explain the lower openness about and frequency of sex that we found in the Irish participants. The consistency in sex education and religious commonality may also explain why our Irish participants were more likely than U.S. adults to agree that their sexual attitudes were aligned with those of their society. Fischer (2016) argues from a similar perspective, suggesting that society assigned, and even institutionalized, moral purity and shame to women in the early 1900s in Ireland, an identity that has been difficult for women to escape, even in modern times. In contrast, U.S. adults engage in and appreciate an increasing range of sexual behaviors (Herbenick, 2017), with the diversity perhaps making it difficult for one individual's beliefs to be a perfect match with overall societal values.

We also found that, across both cultures, the more participants' sexual attitudes matched those of their families, the lower their sexual shame and the higher their sexual openness. This link suggests that healthy family communication about sex leads to healthier sex lives in young adults, an idea supported by previous researchers (e.g., Holman & Kellas, 2015). In contrast to family support leading to sexual openness, adults who perceived themselves to be more similar to their society were less sexually open. Recall that Irish participants were more likely to align with their more conservative societal values, which would explain the link between similarity to society and sexual conservatism; our Irish participants' close connection to their conservative society may have been driving these results. Similarly, we found that participants who experienced greater religious shame were also less sexually open. Again, a possible explanation could be that young adults who are experiencing religious shame come from

religious traditions that emphasize abstinence and more restrictions on sexual freedom (which characterizes a large part of our sample).

Feminism

In support of our fourth hypothesis, we found that Irish and U.S. adults shared similar and high levels of feminist attitudes. This similarity may reflect current, cross-cultural social movements regarding women's equality. In the United States, women's groups are fighting for expanded choice in abortion, gender equality, and increased protection against sexual assault (Estes, 2018). In Ireland, feminist efforts focus on repealing their eighth amendment, which afforded equal protection to women and their unborn children (Kaveny, 2018). Participants across cultures who identified as feminists also agreed their beliefs were similar to their close friends. This finding could indicate that friends influence social beliefs such as feminism, an idea supported by previous researchers (e.g., Bachmann, 2014). Conversely, it could mean that friendships form based on socio-behavioral similarities, another idea supported by previous researchers (e.g., McDonald et al., 2013).

Limitations and Future Directions

One limitation of our study was that we measured shame and guilt three times across the survey without counterbalancing the order of the surveys. Our goal was to assess these feelings in the context of our religion, sex, and feminism scales; however, it is possible that participants' may have experienced an order effect for the shame and guilt surveys.

Another limitation was that our reported correlations were weak to moderate, perhaps reflecting the fact that religion and sexuality are multi-faceted constructs not predicted by single variables. Additionally, our two samples had differing demographic characteristics. However, the racial difference was proportionate to racial distribution in the two countries, and our two groups fell squarely in the young adult category despite the slight difference in mean ages.

Future researchers may want to examine the influence of ethnic identity within the Irish culture.

They may also further examine why young adults' similarity to family versus society predicted different sexual outcomes. Similarly, they could investigate why Irish young adults adhered more closely to societal than family values. Last, future researchers may want to assess shame and guilt differences between the Republic of Ireland and its predominantly Protestant counterpart, Northern Ireland, to better understand the role of religion in the development of these emotions.

Conclusion

In sum, young adults across cultures were similar in their support of feminism but differed in their religious and sexual beliefs. Irish participants held more religiously traditional attitudes but were less likely to attend church and share religious beliefs with their family. Across participants, traditional religious views predicted more shame and secretiveness. Irish participants' sexuality was more conservative and influenced by their society. Across participants, matching societal values was associated with sexual conservatism, while matching family values was associated with sexual openness. These findings suggest that the influence of family versus society may differentiate Irish and U.S. young adults. They also add to the limited research comparing these two cultures that share a Judeo-Christian background but with unique historical trajectories.

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Appendix. Researcher Developed Questions

Social Comparison Questions: Religion

My religious beliefs are similar to those of my family.

My religious beliefs are similar to those of my closest friends.

My religious beliefs are similar to those of society.

Social Comparison Questions: Feminism

My feminist beliefs are similar to those of my family.

My feminist beliefs are similar to those of my closest friends.

My feminist beliefs are similar to those of society.

Social Comparison Questions: Sexuality

My sexual attitudes are similar to those of my family.

My sexual attitudes are similar to those of my closest friends.

My sexual attitudes are similar to those of society.

Researcher Developed Comfort Questions

I feel comfortable talking openly in public about my sexual orientation.

I feel comfortable talking openly in public about my religion.

I feel comfortable talking openly in public about my feminist beliefs.

Social psychological analysis: Factors explaining how conspiracy theories affect attitudes toward COVID-19

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Abstract - When the novel viral infection COVID-19 was identified in the United States, it was necessary for the government to establish regulations to prevent the spread of the virus. However, the emergence of various conspiracy theories made enforcement of regulations difficult. This paper provides three social psychological explanations for why individuals may support conspiracy theories regarding COVID-19 and, therefore, be less compliant with government regulations to control and prevent the spread of the virus. Specifically, the current paper applies empirical social psychological literature to explain how three concepts – self-efficacy, confirmation bias, and mistrust – contribute to explaining individuals' belief in misinformation related to COVID-19. The application of three social psychological concepts (and associated empirical literature) demonstrates the value of social psychology to understanding individuals' reactions to real-world events and explaining their behaviors in response to the current health pandemic.

Keywords: COVID-19, Coronavirus, conspiracy, self-efficacy, confirmation bias, mistrust

At the end of September 2020, only nine months after the World Health Organization declared a Public Health Emergency in response to a novel viral infection called COVID-19, over one million people worldwide have lost their lives (World Health Organization, 2020). On March 13, 2020, soon after the WHO declared a Public Health Emergency, the United States (U.S.) declared COVID-19 a national emergency and, since that declaration, the U.S. has led the world in total COVID-19 cases (7,115,008) and deaths (204,756) (Dong et al., 2020). Although the U.S government attempted to implement restrictive guidelines to stop the spread of the virus, which involved stay at home orders, use of personal protective equipment (PPEs), and physically distancing from others (Kandel et al., 2020), the guidelines were difficult to enforce, resulting in many individuals defying them.

Individuals' defiance of the guidelines has been explained, in part, by the presence of

misinformation and misbeliefs (e.g., the virus is not a serious health threat, individuals cannot do anything to prevent the spread of the virus) stemming from various conspiracy theories that permeated the nation's consciousness. Conspiracy theories reflect explanations for events that rely on rejecting standard, often evidenced-based, explanations while supporting and advancing more covert explanations (Douglas et al., 2017). Although conspiracy theories related to COVID-19 abound, several include ideas reflecting that the virus was made in a lab in China, that the virus is caused by 5G and is a form of radiation, and that the virus was created by powerful groups to reduce the world population (Freeman et al., 2020).

Interestingly, conspiracy theories tend to proliferate when available ways of making sense of a complex world seem inadequate and, instead, simple explanations for unfamiliar situations are used to describe the world as ordered and controllable (Freeman et al., 2020). By

understanding the factors that may promote individuals' support of conspiracy theories, it may be possible to challenge these false beliefs and, therefore, increase safety-related beliefs and behavior related to COVID-19. The current paper uses the empirical social psychological literature to identify and explain three factors (i.e., self-efficacy, confirmation bias, and mistrust) that may contribute to individuals' beliefs in COVID-19 conspiracy theories.

Self Efficacy

Self-efficacy refers to individuals' beliefs about their ability to control their actions and achieve desired outcomes in their lives (Bandura, 2010). These feelings of control may affect how conspiracy theories impact individuals' attitudes and behaviors related to COVID-19. Specifically, with health-related conditions or diseases, such as COVID-19, heightened feelings of self-efficacy may be associated with greater preventative measures because individuals believe they have the ability to execute behaviors necessary to remain healthy. For COVID-19, such preventative measures include proper handwashing, maintaining adequate social distancing, and using face coverings in public areas (Kandel et al., 2020). Although heightened self-efficacy may promote behaviors that prevent contracting and spreading COVID-19, recent research suggests that conspiracy theories may attenuate individuals' self-efficacy beliefs, thereby reducing preventative actions.

When conspiracy theories question or directly challenge the reason for engaging in various preventative measures, the theories change individuals' attitudes toward preventative actions by lowering individuals' feelings of self-efficacy. For example, in research demonstrating the role of conspiracy theories on health-related self-efficacy, Patev et al. (2018) examined how individuals' beliefs in HIV-related conspiracy theories affected their self-efficacy for preventing HIV. Across a series of studies, Patev et al. measured participants' belief in HIV-related conspiracy theories (e.g., "HIV was created and spread by the CIA", p. 665) as well as their self-efficacy beliefs for preventing the contraction of HIV and other STIs. Results revealed

that individuals endorsing greater beliefs in HIV-related conspiracy theories reported less self-efficacy for preventing HIV and other STIs. Specifically, a single point increase in participants' scores on the HIV-related conspiracy theory measure was associated with 1.82 times greater likelihood of endorsing that they could do *almost nothing* to prevent HIV on the self-efficacy measure.

The research by Patev et al. (2018) demonstrates how conspiracy theories affect individuals' health-related self-efficacy beliefs and, therefore, their likely behaviors. When applied to COVID-19, if individuals endorse conspiracy theories about the origin, existence, or risk of the virus, they may believe they cannot contribute to the prevention of the virus. Such beliefs will then reduce their safety-related behaviors potentially promoting the spread of COVID-19. Consequently, it is important to challenge COVID-19 conspiracy theories so the theories cannot negatively affect individuals' self-efficacy and decrease their motivation to engage in preventative measures.

Confirmation Bias

Confirmation bias is a tendency whereby individuals tend to search for, interpret, and weigh evidence more favorably when the evidence aligns with some pre-existing belief (Hernandez & Preston, 2013). Therefore, if a conspiracy theory related to COVID-19 supports or otherwise reinforces some pre-existing belief about the world, the conspiracy theory is likely to be accepted and supported (Freeman et al., 2020). For example, when people hear the conspiracy theory that COVID-19 "was created in a Chinese lab," they search their beliefs for ideas that align with or support this evidence. Given that some individuals may believe that China is a dangerous and corrupt country, false beliefs about the creation of a deadly virus in a Chinese lab are likely to receive support (Devlin et al., 2020). Such false beliefs then promote people's indifference toward COVID-19, reducing their safety-related behaviors and increasing their risk of contracting and spreading the virus.

There is a growing empirical literature demonstrating how conspiracy theories can powerfully affect people's attitudes and behaviors – and such research has demonstrated individuals' tendency to experience confirmation bias in response to conspiracy theories. For example, in one recent study, Jolley and Douglas (2017) examined if exposure to conspiracy theories prior to (versus after) exposure to accurate information heightens the conspiracy theories' effects on individuals' beliefs and behaviors. In the study, Jolley and Douglas examined the common conspiracy theories associated with vaccine refusal. Because anti-vaccine conspiracy theories are so prominent, it is important to examine if exposure to anti-vaccine conspiracy theories affect individuals' beliefs even after accurate information about vaccines is known – thereby demonstrating confirmation bias. In the study, Jolley and Douglas randomly assigned participants to groups, where they heard information reflecting pro- and anti-vaccine theories presented in one of two orders: 1) anti-vaccine (i.e., conspiracy theory) prior to pro-vaccine (i.e., true information, anti-conspiracy) or 2) pro-vaccine (i.e., true information, anti-conspiracy) prior to anti-vaccine (i.e., conspiracy theory). All participants were then asked to report the extent to which they perceived vaccinations to be dangerous. Subsequently, participants read a scenario and were asked to decide if they would vaccinate a hypothetical child. Results revealed that when anti-vaccine (i.e., conspiracy theory) information was presented prior to true information (i.e., anti-conspiracy), participants perceived vaccines to be more dangerous and were less likely to support vaccinating the fictitious child. These results demonstrate that early exposure to conspiracy theories increases individuals' susceptibility to the false information, increasing their tendency to later deny accurate information and confirm their false beliefs.

The research by Jolley and Douglas (2017) is an excellent example of how conspiracy theories receive support, because individuals tend to weigh evidence in support of the conspiracy theory more favorably and deny or reject later accurate

information in order to confirm their beliefs. Such research, if applied to individuals' conspiracy-related beliefs regarding COVID-19, suggests that individuals who are exposed to COVID-19 conspiracy theories before being exposed to credible information may perceive the virus as less dangerous and less serious. These people, then, may exhibit behaviors that exacerbate the spread of COVID-19. Therefore, dramatically increasing access to accurate and credible information and limiting (early) exposure to conspiracy theories may be one way to promote more positive public health behaviors and combat individuals' tendencies to demonstrate confirmation bias for false beliefs.

Mistrust

Although all people may be susceptible to conspiracy theories, some individuals may be more susceptible than others. One explanation for some individuals' greater susceptibility is the degree to which they are legitimately distrusting of various entities (e.g., government) as a result of marginalization and systematic mistreatment. For example, research has demonstrated that individuals who experience significant marginalization, particularly from the government or as a result of governmental policies, may be more tolerant of conspiracy theories that de-legitimize the government (e.g., “the spread of the [COVID-19] virus is a deliberate attempt by governments to gain political control”, p. 5) because of their mistreatment. That is, when individuals cannot trust sources with presumably accurate or legitimate information, they become more accepting of ideas that challenge the source.

Among researchers examining how social marginalization impacts support for conspiracy theories, Freeman et al. (2020) examined if individuals' race/ethnicity can help explain the relationships between COVID-19 conspiracy theories and non-compliance with government-issued guidelines. In the study, Freeman et al. asked participants from various racial/ethnic demographic groups to rate their agreement with various conspiracy-related statements, some of which reflected skepticism and

concern with authority as a result of mistrust due to social marginalization and experiences with systematic inequalities (i.e., doctors, scientists, and the government). Results revealed that racially diverse participants (but not White participants) reported greater support for COVID-19 conspiracy theories when the theories questioned the legitimacy of the authorities that mistreated them. It appears that the mistrust that people of color legitimately have for powerful authorities that mistreat them may fuel their support for conspiracy theories. Consequently, people of color may be less compliant with public health recommendations for preventing the spread of COVID-19 because they have little reason to place their trust in entities that marginalize and mistreat them. Although the work by Freeman et al. (2020) needs replication and extension, such findings may help explain why people of color are disproportionately diagnosed with and die from COVID-19 (Neuman, 2020).

Conclusion

In summary, the social psychological ideas of self-efficacy, confirmation bias, and mistrust help to explain how COVID-19 conspiracy theories are detrimental to promoting compliance with government mandated safety-related behaviors that may flatten the curve associated with COVID-19 cases and deaths. Working to decrease beliefs in COVID-19 conspiracy theories is crucial to stop the spread of the virus, because conspiracy-related beliefs have a strong impact on whether individuals comply with safety-related regulations. As misinformation and conspiracy theories continue to gain traction, and the COVID-19 infection and death rates rise, decreasing beliefs in COVID-19 conspiracy theories should be a top priority.

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A social psychological analysis: Reasons for corporate prosocial behavior during time of crisis

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Abstract - The COVID-19 pandemic has negatively impacted the lives of many people. Changes in routines, health, and employment have created a burden felt around the world. In the face of these hardships, impressive charitable contributions have been made to help mitigate, even if only slightly, the hardships experienced during the pandemic. For example, donations of footwear by Crocs' *Share a Pair for Healthcare* campaign and the availability of free oil changes by Mazda North America are just two examples of the countless positive contributions that corporations have made during the pandemic. Social psychological theory and research can provide a lens to examine and explain how and why corporations, such as Crocs and Mazda North America, chose to engage in these prosocial behaviors during times of crisis. Specifically, social exchange and social responsibility theories offer particularly powerful explanations for why corporations may choose to help during the COVID-19 pandemic. The current paper applies social exchange and social responsibility theories and research to explain corporations' prosocial behavior during times of crisis. Although both theories provide a meaningful explanation of corporate donations during the COVID-19 pandemic, future research should test which of these potentially competing theories best explains corporate giving during times of crisis.

Keywords: corporate prosocial behavior; corporate social responsibility; social-exchange theory; social responsibility theory; pandemic; COVID-19

In January of 2020, the World Health Organization declared a Public Health Emergency in response to a viral infection, called COVID-19, caused by SARS-CoV-2 (World Health Organization [WHO], 2020). By March of 2020, COVID-19 was declared a pandemic (WHO, 2020). COVID-19 appears to be closely related to SARS-COV, a virus originating from a bat, that caused the SARS epidemic of 2003 (CDC, 2020). Although COV-SARS originated in bats, the cause of COVID-19 is currently unknown. COVID-19, the cause of a respiratory illness, was first reported in Wuhan, China and has spread throughout the world (CDC, 2020). The common physical symptoms associated with the virus, as reported by the CDC, include fever, chills, shortness of breath, fatigue, body aches, headache, loss of taste or smell,

sore throat, congestion, nausea, and diarrhea. As of January 2021, there have been over 90 million confirmed cases of COVID-19 and over 2 million COVID-19 related deaths globally (WHO, 2020). The Americas lead the world in confirmed cases (over 40,000,000), with Europe coming in second (over 30,000,000).

The death toll associated with COVID-19 is not the only contributor to the crisis created by the pandemic. The United Nations has described COVID-19 as a human, economic, and social crisis. For example, the shutdown of businesses, schools, and other social institutions for an extended period of time has contributed to economic instability and feelings of isolation. According to the CDC, the stress caused by pandemics can lead to changes in eating or sleeping patterns, worsening mental

health, and increased substance abuse. In a recent empirical example supporting the CDC's claims, a web-based study examining the impact of the COVID-19 pandemic on Chinese individuals' mental health revealed that of the 7,236 participants sampled, one third experienced anxiety-related symptoms and one fifth experienced depressive symptoms (Huang & Zhao, 2020). The key risk factor for experiencing these symptoms (i.e., anxiety and depression) was spending too much time thinking about the pandemic, with 43.6% of participants spending over three hours per day thinking about the pandemic.

Clearly, feelings of anxiety and depression related to experiencing a pandemic are not unfounded. Even among individuals who may not spend time ruminating about the COVID-19 pandemic, the virus will likely impact their lives. According to reports by the Congressional Research Service, the economic effects of the pandemic could lead to recession and mass unemployment not seen since the Great Depression in the 1930s. Although an economic downturn as significant as the Great Depression may not occur, the Wall Street Journal recently reported that no matter how unemployment is measured, COVID-19 has contributed to "historically high unemployment [rates] and [is] likely to leave [a] lasting mark on the U.S. economy". Estimates of job losses or layoffs in the U.S., as a result of the COVID-19 pandemic, range from 30 to 40 million positions (Morath, 2020). Because of the significant impact of COVID-19 on the economic (and, therefore, social and emotional) wellbeing of the nation, it is imperative to understand some of the positive actions taken during these times of crisis that may help prevent or mitigate suffering. These positive actions – from the self-sacrificing behaviors of healthcare and essential workers to the noteworthy philanthropic behaviors of major corporations – demonstrate the important and pervasive tendency for prosocial behavior in human society. The current paper provides a social psychological perspective on corporate prosocial behavior during the COVID-19 pandemic.

Kathy Calvin, the CEO and President of the United Nations Foundation recently said, "Giving is not just about making a donation. It is about making a difference". The sentiment in Calvin's quote has likely resonated globally because, since the outbreak of COVID-19, there has been a dramatic increase in corporate charitable donations, many of which serve to aid individuals affected by the virus. For example, since March 25th of 2020, a well-known shoe manufacturer, Crocs, has donated over 860,000 pairs of shoes to healthcare workers across the globe. As addressed on their website, Crocs sought to promote a feeling of comfort for healthcare workers on the front lines of the pandemic. In addition to companies that are donating resources, other companies have provided services to aid essential workers. For example, on April 15th of 2020, Mazda North America pledged to offer free oil changes for healthcare workers, regardless of whether they own a Mazda or not. Finally, in addition to these impressive charitable contributions, there have been strikingly large monetary donations to support COVID-19 relief. Specifically, one of the largest financial contributions included \$1 billion donated by Jack Dorsey, the CEO of Twitter. Google was the second largest contributor, donating \$907 million. Although the philanthropic efforts described are significant, they are only a few of the many examples of corporate charitable contributions during the pandemic.

There are likely many reasons why corporations engage in charitable contributions during times of crisis, such as the COVID-19 pandemic. However, the social psychological literature is replete with theoretical (and therefore empirical) explanations for why corporations, such as Crocs, Mazda, Twitter, and Google may contribute to COVID-19 relief efforts. Because corporate giving is a form of prosocial behavior, theories of helping, such as social exchange theory and social responsibility theory, may help explain corporate prosocial behavior during COVID-19. Additionally, although not the central focus of the present paper, attribution theory may help explain how consumers respond to such prosocial behavior.

Social exchange theory is one theoretical explanation for why corporations may be motivated to donate during times of crisis, such as the COVID-19 pandemic. Broadly, social exchange theory describes that “human interactions are [akin to] transactions that attempt to maximize rewards and minimize costs” (Myers & Twenge, 2019, p. 353), with such transactions benefiting the helper (i.e., corporations) as well as the helped (i.e., consumers). Although the rewards and costs of corporate philanthropy may not be consciously considered, such considerations likely precede donation decisions. For example, corporate donations may be partly altruistic (i.e., to help consumers), but they may also be self-serving (i.e., to help the organization) by creating goodwill with the community, differentiating the corporation’s image from competitors, promoting positive public perceptions of the brand, and increasing revenue and profit. One example for how social exchange theory may predict corporate philanthropic behavior reflects the idea of corporate social responsibility. Although there are varied definitions of corporate social responsibility, it generally describes “the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time” (Carroll, 1997, p. 500), yet often goes beyond what is *expected*, to include “actions on the part of the [corporation] that appear to advance or acquiesce in the promotion of some good, beyond the immediate interests of the [corporation] and its shareholders and beyond which is required by law” (Waldman et al., 2006, p. 1703). Corporate social responsibility can range from endorsing social causes and supporting charities to making public commitments and contributions to relief efforts during and after disasters and pandemics, such as COVID-19.

Research demonstrates that consumers’ responses to corporate social responsibility are generally positive, leading to increased positive views toward companies and increased intent to purchase their products (Deng & Xu, 2015). Such ideas are consistent with social exchange and attribution theory, whereby in the context of corporate social responsibility, consumers

reciprocate the corporate prosocial behavior by attributing positive characteristics to the companies. For example, research conducted by Nan and Heo (2007) examined the relationship between corporate social responsibility and consumer attitudes toward companies engaging in prosocial behavior. One hundred undergraduate students from a midwestern American university read one of three possible advertisements for a fictional orange juice company. All three orange juice advertisements were identical, except for the presence or absence of a message about a fictional charity that the juice brand claimed to support. After viewing the advertisement, participants’ consumer responses to the company were measured using a seven-point scale anchored by bipolar adjectives, such as dislike/like, unfavorable/favorable, and negative/positive. The orange juice advertisement containing the message of corporate social responsibility elicited more favorable consumer responses compared to the identical orange juice advertisements that did not contain such a message. These results demonstrate how corporate social responsibility serves as an example of social exchange and attribution theory, because philanthropic behaviors are rewarded by positive consumer attitudes (see additional consistent ideas by Barone et al., 2000).

The findings by Nan and Heo (2007) are important because positive consumer attitudes, as a result of corporate social responsibility, powerfully affect purchasing intentions and decisions, even in response to high product prices – and such consumer attitudes may sustain corporate giving during times of crisis, such as the COVID-19 pandemic. Although high product prices typically lead to decreases in consumers’ intention to purchase, social exchange theory would predict that corporate social responsibility may help overcome consumers’ reduced inclinations to purchase high-cost products. In fact, research has demonstrated that perceived corporate social responsibility is a stronger predictor of consumers’ intention to purchase than product price. For example, Mohr and Webb (2005) examined if corporate social responsibility affects consumers’ purchase intentions, even when product costs are

high. One hundred ninety-four American adults completed a survey that was mailed to them evaluating their support for a fictional shoe brand. Participants were asked to imagine shopping for the relatively expensive or inexpensive fictional shoe brand after reading a description of the company that did or did not reflect it was engaged in corporate social responsibility, such as “having an excellent environmental record” (p. 130). Participants’ purchase intentions were measured using a seven-point scale anchored by terms such as unlikely/very likely, impossible/very possible, no chance/certain. Results revealed that purchase intentions were higher when the company engaged in corporate social responsibility, and this was true even when the company’s product prices were high. The results found by Mohr and Webb clearly demonstrate that consumers respond positively to corporate social responsibility and reciprocate the helpful corporate behavior by increasing their intentions to purchase products. The research by Nan and Heo (2007) and Mohr and Web (2005) clearly demonstrate how the social psychological ideas of social-exchange and attribution theory can explain corporate philanthropic behavior during COVID-19.

Although corporations *may* engage in corporate social responsibility as a transactional attempt to maximize their brand and, therefore, the likelihood of selling their products, there may also be a more altruistic (i.e., selfless) explanation for corporate philanthropy during times of crisis. A *potentially* more altruistic example of corporate philanthropy is Pearle Vision’s \$45,000 donation to the Children’s Miracle Network, when the donation was not linked or tied to corporate sales (i.e., the absence of cause-related marketing; Barone et al., 2000). Arguably, it is possible that corporate philanthropy may be particularly altruistic during times of mass distress, such as what is occurring during the COVID-19 pandemic. Specifically, social responsibility theory describes that people tend to help those *in need* without expectation of reward (Berkowitz, 1972; Schwartz, 1975). According to social responsibility theory, it is common for people to feel obligated to help others, particularly needy others, even when the others are strangers (Myers

& Twenge, 2019). Therefore, social responsibility theory may explain why, in response to the COVID-19 pandemic, corporations may feel compelled to provide aid in whatever way they can.

Although it may be challenging to demonstrate that financial incentives do not necessarily (always) drive corporate prosocial behaviors, some researchers have examined the motivations behind corporate social responsibility. Such research provides support for applying social responsibility theory to a company’s philanthropic contributions during times of crisis. For example, in a study conducted by Graafland and Mazereeuw-van der Dujin Schouten (2012) examining the intrinsic (i.e., ethical and altruistic) and extrinsic (i.e., financial) motives behind corporate social responsibility, 473 executives across different types of industries (e.g., manufacturing, wholesale and retail, financial) reported the extent to which their company is motivated to engage in environmentally and socially responsible behaviors. The results revealed that for both environmentally and socially responsible behaviors, executives’ intrinsic motivations (i.e., having an ethical and moral duty) predicted corporate social responsibility more than extrinsic motivations (i.e., financial benefits). The results by Graafland and Mazereeuw-van der Dujin Schouten demonstrate that non-financial motives can meaningfully explain corporate philanthropic behavior, such that corporations may donate during times of crisis because “it is right” (p. 380) or because it contributes to the “common good [as a result of] a genuine concern for the well-being of others” (p. 381), not because it is financially lucrative. Consequently, consistent with social responsibility theory, corporate social responsibility may be explained by feeling a moral or ethical responsibility to help, such as what might be happening with corporate philanthropic behavior during the COVID-19 pandemic.

Additional support for applying social responsibility theory to understanding corporate social responsibility is derived from research examining consumers’ responses to corporate donations when the donations are or are not conditional on revenue-generating transactions

(i.e., whether the corporation's purpose for a donation is or is not to make a profit, respectively). For example, as part of a larger study, Dean (2003) asked undergraduate students to review information about a hypothetical athletic shoe company who engaged in corporate social responsibility that was described as conditionally or unconditionally linked to revenue-producing transactions. Results revealed that corporate social responsibility *not* linked to revenue-providing transactions was perceived more positively than corporate social responsibility linked to revenue-providing transactions. These results are consistent with other research (see, for example, Bae & Cameron, 2006 or Muller & Kräussl, 2011) demonstrating that perceiving a prosocial motive behind corporate social responsibility affects consumers' purchasing decisions, even when price and quality among competing products are equal. It should be noted, however, that even if a prosocial motive is not linked to a revenue-producing benefit for a corporation, the corporation may still benefit from the goodwill the prosocial motive engenders in consumers.

Although, as described previously, it may be challenging to demonstrate that financial motivations do not necessarily (always) drive corporate prosocial behaviors, as is needed to apply social responsibility theory to corporate donations during times of crisis, what appears to matter most is the public's *perception* of the behaviors. Specifically, public perceptions (and, therefore, subsequent attributions) of corporate social responsibility appear to be affected when the behavior is viewed as beneficial to a cause versus exploitative of a cause. For example, Reebok's support of Amnesty International "Human Rights Now" campaign demonstrates the different ways a corporation's socially responsible actions could be interpreted. Many people perceived Reebok's support as purely altruistic and beneficial to the cause, whereas others only saw it as an attempt to promote sales (exploiting the cause; Baron et al, 2000). However, not all corporate social responsibility is scrutinized. For example, American Express's "Charge Against Hunger" was less controversial than Reebok's support of

Amnesty International, as people largely perceived American Express's contributions as a desire to help others with no reward. No matter the company's intentions, corporations have played a major role in providing relief to individuals and communities during times of crisis, including the COVID-19 pandemic – and it is clear that the social psychological theories of social exchange and social responsibility can reasonably explain such actions.

In summary, the charitable contributions described and explained in this paper, such as Crocs' *Share a Pair for Healthcare* and Mazda North America's free oil change program, are just a few of the many contributions that corporations have made during times of crisis, like the COVID-19 pandemic. During the ongoing COVID-19 pandemic, corporate prosocial behaviors have helped mitigate (even if only slightly) the suffering of people around the world, and the social psychological theories of social exchange and social responsibility help explain such behaviors. Future research could test (although potentially unrealistic and ethically questionable) these competing theories to identify which more powerfully explains corporate social responsibility during crises such as the COVID-19 pandemic.

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