PREDICTING PROSOCIAL TENDENCIES AMONG COLLEGE STUDENTS

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PREDICTING PROSOCIAL TENDENCIES

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Abstract

Prosocial behaviors inherently benefit oneself, others, and the larger society. Therefore, further investigation as to which factors influence positive social acts is beneficial to better understand what motivates prosocial behavior as well as how it may be promoted. Much of the literature on prosocial behavior targets the construct of empathy. However, little research has been done to differentiate between cognitive and affective empathy, and their relationship with prosocial behaviors. Moreover, proponents of rational compassion, consisting of rational thinking and compassion, contradict the positive assessment of empathy's contributions to positive social acts by proposing that empathy may not be the best predictor of prosocial behavior. Consequently, this project aimed to determine which among the constructs of empathy and compassion in addition to fairness and kindness best predict prosocial tendencies in a variety of contexts. The current study assessed prosocial tendencies, cognitive and affective empathy, rational compassion, fairness, and kindness among college-aged participants. The resulting data were analyzed using a hierarchical regression with empathy, compassion, fairness, and kindness as predictors, and prosocial tendencies as the outcome variable. Results indicated that cognitive empathy and kindness were the strongest predictors of positive social behavior. Sex was also explored as a moderator and indicated that the effect of kindness on prosocial tendencies depended on participant sex. Overall, this study elucidates the factors that influence prosocial behavior.

Keywords: prosocial behavior, empathy, fairness, kindness, compassion

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Prosocial behaviors influence our society as seen through activities like volunteer firefighting, caring for an elderly relative, or donating money. There are many factors said to prompt the development of prosocial behaviors including empathy and compassion. More specifically, prosociality in youth is predicted by self-compassion, sympathy, and empathy (Spinrad & Gal, 2018; Batson et al., 1991). Marshall (2019) supported this notion by finding that empathy positively predicted prosocial behavior across time. Nathania and colleagues (2019) added to this by saying that empathy is exhibited through prosocial behavior management and the capability to build peer relationships and regulate emotions. As such, empathy can be important for coping in society. Because of this, many interventions and programs are aimed at developing these traits. Spinrad and Gal (2018) explain that social and emotional skill-building can increase prosocial behavior since it often emphasizes empathy, self-regulation, and understanding of oneself and others. In schools, these interventions focus on similar skills like mindfulness, empathy, and impulse control to increase prosocial behavior in young children (Flook et al., 2015; Schonert-Reichl et al., 2012; as cited in Spinrad & Gal, 2018). Good parenting practices also seek to increase prosocial behaviors in children through promoting emotional competence and regulatory skills, often facilitated by attachment, praise, and encouragement, (Spinrad & Gal, 2018). Specifically, family-based intervention and prevention programs successfully increase prosocial behaviors in children (Spinrad & Gal, 2018). Although evidence exists for some of the factors that may influence prosocial behaviors, more research is needed to understand the interplay of empathy, compassion, fairness, and kindness. Therefore, this study aimed to examine these factors.

Prosocial Education and Social-Emotional Learning in K-12

Because prosociality is influenced by social environments, schools are an important location for the development of prosocial human behavior (Corrigan et al., 2013). In contrast to the psychological study of empathy and prosocial behavior development, prosocial education is considered to be broader (Corrigan et al., 2013). The essence of prosocial education is the combination of academic learning and the development of prosociality (Corrigan et al., 2013). As a result, school environments are maximized to include climates designed to be safe, socially and emotionally supportive, and engage communities and parents (Corrigan et al., 2013). Theoretically, deeper expressions of skills, actions, judgments, and attitudes are a result of prosocial education (Corrigan et al., 2013). Corrigan et al. (2013, p. 45) explain that "for the good of civilization, the goals of prosocial education are worth pursuing." They further justify this claim by stating that by focusing on the social and moral development of children nations around the world will be able to cooperate and thrive, producing a more peaceful and healthier world (Corrigan et al., 2013).

Social-emotional learning is one component of prosocial education in the school system. By allowing teachers to get to know their students well, social-emotional learning instruction can be personalized by teachers and culturally responsive (Mahoney et al., 2021). One problem area in social-emotional learning is how to implement it systematically across the country as programming expands broadly (Mahoney et al., 2021). Mahoney et al. (2021) says that to do this, new national policies that combine academic performance and social-emotional learning in the core of education will be required. At the state and district level, social-emotional learning will need ongoing support for its efforts including adopting K-12 and above social-emotional learning competencies that are developmentally appropriate in all

states and assessments that are well-developed to enhance and assess progress (Mahoney et al., 2021). The result of these aligned policies, actions, and resources can foster an inclusive culture that supports the community, school, and family partnerships aimed at strengthening student development (Mahoney et al., 2021).

Range of Prosocial Tendencies

Broadly, behaviors intended to benefit others are considered prosocial behaviors. Helping, donating, sharing, and cooperating are some examples of prosocial behaviors (Spinrad & Gal, 2018). Most prosocial behaviors are voluntary; however, compliant prosocial behaviors are the result of a request (Spinrad & Gal, 2018). There are many motivators and influences for prosocial behaviors. On one hand, altruistic prosocial behaviors are intrinsically motivated, but diverse motivations like social rewards, one's welfare, and avoiding punishment may motivate other prosocial behaviors (Spinrad & Gal, 2018). Costly prosocial behaviors such as comforting an individual in distress or sharing resources at one's own expense, anonymous prosocial behaviors, and spontaneous prosocial behaviors generally are more intrinsic in nature like altruistic prosocial behaviors (Spinrad & Gal, 2018). Conversely, less costly prosocial behaviors, prosocial behaviors that are public, and those that are more compliant tend to be more extrinsically motivated (Spinrad & Gal, 2018). Personal and situational factors can influence prosocial behaviors (Nathania et al., 2019). These factors may include empathy, personal values and norms for personal factor influences, bystander effects, diffusion of responsibility, mood, range of need for those in need of help, and kin selection for situational factors (Nathania et al., 2019). From this understanding, it can be concluded that the definition of and factors influencing prosocial behaviors are very broad (Spinrad & Gal, 2018).

Methods to assess prosocial behaviors likewise are broad. Due to their feasibility compared to behavioral and experimental measures, questionnaires are the primary method for collecting data on prosocial behavior (Luengo Kanacri et al., 2021). Researchers who value and support self-report assessments for prosocial behaviors in adults have argued that with the socio-cognitive developments during adolescence, the individuals themselves, compared to anyone else, are most likely to accurately report tendencies and habits to behave prosocially (Caprara et al., 2012; as cited in Luengo Kanacri et al., 2021). Although there are many self-report measures for prosocial tendencies and behaviors like the Values in Action Inventory of Strengths, these scales only assess narrow domains of prosocial tendencies and behaviors (VIA-IS; Peterson et al., 2005; as cited in Carlo & Randall, 2002). However, the Prosocial Tendencies Measure looks specifically at common types of prosocial behaviors rather than more theoretically related constructs (Carlo & Randall, 2002). Therefore, for this study, the Prosocial Tendencies Measure was used.

Prosocial Tendencies Measure Subscales

The Prosocial Tendencies Measure consists of six subscales of prosocial tendencies: altruism, dire, compliant, emotional, public, and anonymous. Voluntary prosocial behaviors motivated primarily by the concern for others' welfare and needs are considered altruistic (Carlo & Randall, 2002). Altruistic prosocial behaviors can sometimes result in a cost to the helper; but, due to internalized principles usually related to an individual's self-concept, individuals are likely to engage in altruistic prosocial behaviors (Carlo & Randall, 2002). Carlo and Randall (2002) found that adolescents who believe they are responsible and are obligated to act responsibly towards society were more likely to engage in altruistic prosocial behaviors. Next, dire prosocial behaviors are distinguished by the situation where individuals

help others in an emergency or crisis (Carlo & Randall, 2002). Like altruistic prosocial behaviors, they can also result in some cost to the helper and involve helping others who are in need. Compliant prosocial behaviors are distinguished by nonverbal or verbal requests to help (Eisenberg et al., 1981). Because of this, compliant prosocial behaviors are more common when compared to spontaneous prosocial behaviors (Carlo & Randall, 2002). Much of the research on compliant prosocial behaviors involves children rather than other age groups (Carlo & Randall, 2002). Eisenberg and colleagues (2009) and Luengo Kanacri and colleagues (2021) reiterate the lack of research on prosocial behavior in adolescents and adults. Therefore, this study aimed to offer some information about prosocial behavior in the emerging adult age group.

Emotional prosocial behaviors are conducted in circumstances that are emotionally evocative (Carlo & Randall, 2002). The situations in which an individual engages in emotional prosocial behaviors involve many factors, but all are highly emotionally evocative. Prosocial behaviors conducted before an audience are considered public (Carlo & Randall, 2002). Generally, public prosocial behaviors are motivated in part by the desire to increase one's self-worth and to gain the respect and approval of others such as peers or parents (Carlo & Randall, 2002). In contrast, anonymous prosocial behaviors are conducted without an audience present, and there is no knowledge of who helped by the recipient (Carlo & Randall, 2002).

Defining and Measuring Empathy

Because of the debate surrounding empathy, no general definition that is sufficient for scientific inquiry is agreed upon (Reniers et al., 2011). Specifically, the debate arises from the discussion on the components of empathy and whether it involves experiencing emotion,

recognizing emotion, or both (Reniers et al., 2011). Many argue that empathy consists of both experiencing and recognizing emotion, but the consideration of the inclusion of actual behavioral responses as a component of empathy's definition adds a layer to the debate (Reniers et al., 2011). Marshall and colleagues (2019) based their definition of empathy on Jolliffe and Farrington's (2006) work to encompass both affective and cognitive empathy components. Reniers and colleagues (2011) reinforce this definition by arguing that neurocognitive processes within empathy suggest a distinction between affective and cognitive empathy.

Empathy and sympathy can be differentiated from one another. Sympathy involves an other-oriented focus that is warm and a sense of concern for others, whereas empathy does not necessarily include these components (Marshall et al., 2019). Additionally, some argue that sympathy can result from empathy because understanding and perception of another's emotional state is the basis for sympathetic concern (Carlo & Randall, 2002). In this understanding of sympathy, empathy can be considered an emotional reaction that results from the emotional state of another (Carlo & Randall, 2002). Carlo and Randall (2002) further differentiate sympathy and empathy by discussing how personal distress can lead to sympathy. This means that the self is the focus of orientation in personal distress as opposed to others as the focus of orientation in empathy (Carlo & Randall, 2002).

Developmentally, empathic ability expands over time as socioemotional development continues. Initially, empathy is more self-oriented but conforms to others in later stages of childhood development (Nathania et al., 2019). It is thought that babies possess empathy within 18-72 hours after birth because a crying baby's reaction is enhanced when they hear another baby cry (Nathania et al., 2019). This example of empathy's affective component

demonstrates that similar emotions are developed in response to the emotion of others (Nathania et al., 2019). Because of this known relationship between the capability to understand others and empathy, prosocial behaviors, interactions with others, and other similar behaviors are motivated by empathy (Nathania et al., 2019). The empathy-altruism hypothesis developed by Batson and Coke (1981) expands on this by concluding that one's sense of empathy motivates prosocial behaviors aimed at promoting others' welfare without the need for reciprocity (Batson et al., 1991; Marshall et al., 2019; Nathania et al., 2019).

Additionally, there is a broad debate on how to measure empathy. Like measuring prosocial behavior, self-report measures are the most feasible way to measure empathetic behavior and experience because they are easy to administer (Reniers et al., 2011). Many empathy questionnaires are used including the Hogan Empathy Scale and Empathy Quotient (Baron-Cohen, Richler, Bisarya, Gurunathan, & Wheelwright, 2003; Hogan, 1969; as cited in Reniers et al., 2011). Both questionnaires and others rely on generalized definitions of empathy (Reniers et al., 2011). In contrast, the Questionnaire of Cognitive and Affective Empathy distinguished between cognitive and affective empathy within empathy as a whole (QCAE; Reniers et al., 2011). Therefore, this study uses the QCAE to measure empathy and subscales of cognitive empathy and affective empathy as opposed to other broad measures.

Cognitive versus Affective Empathy

In other definitions of empathy, the distinction between cognitive empathy and affective empathy is made. Cognitive empathy can be understood as the ability to comprehend the emotions that another is experiencing (Marshall et al., 2019). Individuals engaging in cognitive empathy rely on visual, situational, and auditory cues to comprehend the cognitive and emotional situation another person is experiencing (Reniers et al., 2011).

As such, this process requires the ability to hold information in one's mind and manipulate it, so cognitive empathy can be considered a working model in the mind of one individual concerning the experiences of another (Reniers et al., 2011). Many researchers equate cognitive empathy with theory of mind (ToM) because the same basic skills are required: understanding and representing the internal mental state of others (Reniers et al., 2011). However, cognitive empathy differs from ToM in that ToM is concerned with cognitions whereas cognitive empathy is concerned with emotions (Reniers et al., 2011). Hence, cognitive empathy and ToM are distinct constructs but rely on similar underlying skills (Reniers et al., 2011).

In contrast to cognitive empathy, affective empathy is the ability to experience the emotions that another is experiencing (Marshall, 2019). This vicarious experience of the emotions of others can be divided into a response to the emotions displayed by others and a response to emotional stimuli (Reniers et al., 2011). An important distinction to consider in the definition of affective empathy is that it does not include the aspect of being aware of others' feelings, rather it emphasizes the experience of another individual's feelings (Reniers et al., 2011). Therefore, affective empathy requires the recognition of facial expressions, voice prosody, and body language to determine the emotions of others (Reniers et al., 2011). From this, emotional response by the observer is elicited through self-reflection to identify a corresponding emotional incident or state of their own in response to the situation and emotions of another individual (Reniers et al., 2011).

Compassion and Kindness

The related constructs of empathy, altruism, sympathy, and prosocial behaviors can cloud broad definitions of compassion (Mascaro et al., 2020). In turn, this causes resistance

by some to the concept of compassion due to the other definitions by researchers and people (Gilbert et al., 2019). Some argue that compassion is a soft kindness; however, others postulate that compassion has both motivational and affective components (Gilbert et al., 2019; Mascaro et al., 2020). Evolutionarily, compassion is reasoned to be the combination of universal experiential and physiological responses to cognitive appraisals that are situation dependent (Mascaro et al., 2020). Moreover, compassion can be viewed as a psychological construct that influences prosocial behaviors (Mascaro et al., 2020). Mascaro et al. (2020) claim that compassion is a motivator for costly prosocial behaviors intended to reduce the suffering of others.

Compassion is thought to occur in response to the suffering of others, whereas empathy can apply to many other situations and emotions like anger, disgust, or joy (Pommier, 2010). Additionally, compassion is believed to be its own distinct emotion as opposed to empathy which is a vicarious experience (Goetz et al., 2010). Compassion can also be felt for humanity as a whole rather than only in specific interpersonal instances (Sprecher & Fehr, 2005). Bloom (2016) confirms this aspect of compassion's definition in his argument that empathy cannot be fed to a large group of individuals.

From this, compassion is generally accepted to be a response to the suffering of others that consists of the desire to ease the suffering of others (Goetz et al., 2010). All distinctions and definitions share the common ideas that compassion involves the desire to alleviate another’s suffering through prosocial behaviors and feeling touched by the suffering of another (Strauss et al., 2016). Therefore, compassion is a distinct construct from empathy, prosocial behaviors, and other similar constructs aimed at alleviating suffering.

Compassion in Healthcare

Compassion in the healthcare domain is believed to have wide-ranging benefits with numerous practical advantages such as increased patient satisfaction, improved quality of information from patients, and enhanced clinical outcomes (Epstein et al., 2005; Rendelmeir et al., 1995; Sanghavi, 2006; Patel et al., 2019; as cited in Strauss et al., 2016). For both the receiver and giver, immediate health benefits from compassion have been indicated by research (Fogarty et al., 1999; Steffen and Masters, 2005; Galante et al., 2014; as cited in Strauss et al., 2016). As a result, over 25 compassion interventions for nurses have been created to encourage compassionate care (McCaffrey and McConnell, 2015; Blomberg et al., 2016; as cited in Mascaro et al., 2020). The American Medical Association has also implemented compassion as a principle of medical ethics with compassion training developing into a more explicit goal in medical practice and training (Shih et al., 2013; American Medical Association, 2016; Rao and Kemper, 2017; as cited in Mascaro et al., 2020). Therefore, compassion has become an active component and core value in medical care (Mascaro et al., 2020).

Kindness

Kindness is commonly referred to as a component of compassion, often being defined as ‘intelligent kindness’ (Neff, 2003; Pommier, 2010). However, the main distinction is that suffering is not an essential component of kindness, whereas suffering is an essential component of compassion (Gilbert et al., 2019). For example, “remembering someone’s birthday” can be considered kind rather than compassionate (Strauss et al., 2016, p. 19). Additionally, Gilbert et al. (2019, p. 2265) found that “individuals naturally distinguish between kindness and compassion.”

From an evolutionary standpoint, there is a personal benefit to being kind. Although kindness generally involves actions that are intended to benefit others, there may be a genetic payoff to engaging in kind behaviors (Curry et al., 2018; Gilbert et al., 2019). Historically, kindness can be rooted in the treatment of others like kin and is connected to the interdependence of humans (Dalai Lama, 2001; Phillips & Taylor, 2009; as cited in Gilbert et al., 2019). Yet, in contrast to other related constructs like empathy and compassion, kindness focuses more on the motive of others' happiness (Dalai Lama, 2001; as cited in Gilbert et al., 2019). Overall, kindness is distinct from compassion in that it does not include a component of suffering; it is motivated by treating others like kin; and it involves the happiness of others.

Fairness

While fairness can be defined as impartial treatment or without discrimination, psychology research on fairness has produced the assumptions that fairness has a strong motivational basis and is subjective in regard to how people are fair (Greenberg, 1990; Cropanzano et al., 2001; as cited in Collins & Strelan, 2021). Instrumental, moral, and relational motives all motivate an individual to value fairness (Collins & Strelan, 2021). More specifically, instrumental motives involve control and self-interest, moral motives denote norms and internalized moral duties, and relational motives highlight esteem and belonging (Collins & Strelan, 2021). Collins and Strelan (2021) explain that these motives are the result of the intrapersonal and interpersonal benefits of fairness, but the world inherently is not fair. As such, individuals experience dissonance and harm to their self-esteem if they highly value fairness and believe the world is not fair (Collins & Strelan, 2021). Conversely, a sense of belonging and the need to feel good about oneself motivate

individuals to act fairly and value fairness (Dalbert, 1999; Greenberg, 1990; as cited in Collins & Strelan, 2021).

Summary and Study Overview

Based on the understanding of prosocial behaviors, empathy, compassion, kindness, and fairness, prosocial behaviors are behaviors that are intended to help others. Although there are many prosocial behaviors, this study focused on public, dire, anonymous, emotional, compliant, and altruistic prosocial tendencies. For this study, empathy will be understood as the combination of cognitive and affective empathy and will be measured with emphasis on both components of empathy. Next, compassion targets the alleviation of suffering, and kindness is a component of compassion. Therefore, compassion and kindness were measured using the same scale, with kindness measured as a subscale of compassion. Lastly, fairness will be defined as impartial treatment. Using these definitions, this study was conducted with the principal focus of assessing the predictive value of cognitive empathy, affective empathy, fairness, kindness, and compassion for prosocial tendencies. The secondary aim of this study was to determine if demographic effects exist. Specifically, sex was also explored as a moderator of the relationship between kindness and prosocial tendencies based on previous research suggesting that both females and males prefer mates who possess traits of kindness (Hou et al., 2022) and that females and males take on roles based on gender differences across various domains, including prosocial behaviors (Croft et al., 2021).

Method

Participants

The population utilized were students from Angelo State University and primarily consisted of undergraduate psychology students. Participants (N = 193) were university students who received course credit in exchange for their participation. The mean age of participants was 20 years (SD = 3.72). Most of the sample was female (N = 146; 75.6%), and males accounted for 24.4% of the sample (N = 47).

Procedure

All participants were asked to answer five questionnaires assessing prosocial tendencies, cognitive and affective empathy, rational compassion, fairness, and kindness. Questionnaires were administered via the Angelo State University SONA Systems using the online platform, Qualtrics. Participants were presented with a consent document (Appendix A, B), followed by the questionnaires in random order, and finished with a general demographic questionnaire (Appendix H). Once participants completed the questionnaires, they were shown a debriefing statement and thanked for their participation.

Measures

Prosocial Tendencies Measure

The Prosocial Tendencies Measure (PTM; Carlo & Randall, 2002; M = 64.63, SD = 13.22, Cronbach's α = 0.88; Appendix C) was designed from prior prosocial and behavioral scales along with interviews of college-aged students. The PTM is a 23-item scale assessing the six subscales of public (four items; Cronbach's α = 0.83), compliant (two items; Cronbach's α = 0.82), anonymous (five items; Cronbach's α = 0.81), emotional (four items; Cronbach's α = 0.76), altruism (five items; Cronbach's α = 0.81), and dire (three items;

Cronbach's α = 0.72) prosocial tendencies (Carlo & Randall, 2002). Participants respond to each question by rating how well the statement describes themselves on a five-point Likert scale with 1 being 'does not describe me at all and 5 being 'describes me greatly' (Carlo & Randall, 2002).

Questionnaire of Cognitive and Affective Empathy

The Questionnaire of Cognitive and Affective Empathy (QCAE; Reniers et al., 2011; *M* = 95.0, *SD* = 15.1, Cronbach's α = 0.87; Appendix D, J) is a 31-item scale with five subscales assessing cognitive empathy (perspective taking and online simulation; *M* = 60.69, *SD* = 9.96, Cronbach's α = 0.88) and affective empathy (emotional contagion, proximal responsivity, and peripheral responsivity; *M* = 35.01, *SD* = 5.84, Cronbach's α = 0.75). Participants respond to the QCAE on a four-point Likert scale with responses of strongly disagree (one) to strongly agree (four). Convergent and construct validity of the QCAE have been shown through observed relationships, previous research, and theoretical expectation (Reniers et al., 2011).

Fairness Scale

To assess the construct of fairness, the 10-item scale developed by Collins and Strelan (2021) was used (Cronbach's α=0.85; *M* = 52.08, *SD* = 6.3, Cronbach's α = 0.80; Appendix E). This six-point scale ranges from strongly disagree (one) to strongly agree (six).

Compassion Scale with Kindness Subscale

The Compassion Scale (CS) was designed to measure positive and negative aspects of kindness, mindfulness, and humanity about others (Pommier et al., 2019; *M* = 66.45, *SD* = 9.96, Cronbach's α = 0.87; Appendix F). This 16-item questionnaire is measured on a 5-point

Likert scale from ‘almost rarely most always’ (Pommier et al., 2019). The kindness subscale was used to measure kindness (Cronbach’s α = 0.86, *M* = 17.04, *SD* = 3.08).

Cognitive Reflection Test 2

The Cognitive Reflection Test 2 (CRT-2; Thomson & Oppenheimer, 2016; *M* = 2.48, *SD* = 1.1; Cronbach’s α = 0.54; Appendix J) consists of four short questions measuring cognitive processing that have high face validity, do not require extensive mathematical computation, and are not frequently seen by participants of other studies as with the CRT. The CRT-2 was found to be reliable by Thomson & Oppenheimer (2016; Cronbach’s α = 0.85), but this study did not find the CRT-2 reliable. This scale is measured by summing correct and incorrect answers; thus, participants were asked to write in responses as opposed to multiple-choice to avoid answering correctly by guessing.

Demographics Questionnaire

A demographics questionnaire was used to collect data on collegiate year, gender/sex, and age. One of the items, gender, asked participants to categorize themselves in an open-ended question. All participants responded with male or female (male = 0, female = 1; Appendix H).

Results

Predictors of Prosocial Tendencies

The principal focus of this study was to assess the predictive value of cognitive empathy, affective empathy, fairness, kindness, and compassion for prosocial tendencies. Data from participants’ responses for each of these constructs were analyzed using a hierarchical regression with prosocial tendencies as the criterion and cognitive empathy and affective empathy loaded into the first block then compassion, fairness, and kindness loaded

into the second block. Cognitive and affective empathy entered simultaneously in model 1 reliably predicted prosocial tendencies: R^2 = .11; F(2, 190) = 11.62, p < 0.001 (Table 1).

Table 1. Summary of Simultaneous Hierarchical Regression Analysis Summary for Predicting Prosocial Tendencies Measure (N = 193)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	36.560	6.695		5.461	.000
	Cognitive Empathy	.422	.098	.318	4.323	.000
	Affective Empathy	.070	.166	.031	.423	.673
2	(Constant)	62.557	8.944		6.995	.000
	Cognitive Empathy	.432	.095	.325	4.550	.000
	Affective Empathy	-.133	.166	-.059	-.799	.425
	Fairness Total	-.413	.154	-.197	-2.680	.008
	CS Total Compassion	-.777	.187	-.549	-4.154	.000
	Total kindness subscale of compassion	3.149	.596	.733	5.284	.000
	Note. Adjusted R2 = 0.24; F(5,187) = 11.79, p < 0.001					

One of the predictors, cognitive empathy, contributed reliably to the prediction: β= .32. Model 2, with all five predictors entered simultaneously, also reliably predicted prosocial tendencies: R^2 = .24; F(5, 187) = 11.79, p < 0.001. Cognitive empathy, fairness, compassion, and kindness were all reliable individual contributors to the prediction. Standardized beta coefficients for model 2 showed that positive unit changes in cognitive empathy (β = 0.33) and kindness (β = 0.73) predict increases in prosocial tendencies. Unexpectedly, increases in compassion (β = -0.55) and fairness (β = -0.20) both predict decreases in prosocial empathy. The adjusted R squared value for model two (0.22) was improved compared with model one (0.1), indicating an additional 12% of the variance in prosocial behavior can be explained by model two. Table 2 shows the means, standard deviations, and intercorrelations for the predictors and outcome variable.

Table 2. Means, Standard Deviations, and Intercorrelations for Predictor and Outcome Variables (N = 193)

Outcome Variable	***M***	***SD***	**1**	**2**	**3**	**4**	**5**
Prosocial Tendencies Measure	64.63	13.22	0.33	0.15	0.09	-0.02	0.25
Predictor Variables							
1. Cognitive Empathy	60.69	9.96	1	0.36	0.32	0.31	0.35
2. Affective Empathy	35.01	5.84		1	0.34	0.23	0.44
3. Compassion	66.45	9.34			1	0.45	0.87
4. Fairness	52.08	6.30				1	0.46
5. Kindness	17.04	3.08					1

Evaluating the Model for Multi-collinearity

The study aimed to assess the predictive utility of the overall model as well as each variable, so it is important to look for multi-collinearity among predictors. Kindness and compassion are similar constructs with a Pearson *r* value of 0.87, indicating a high magnitude positive relationship with substantial overlap of paired values in their respective distributions. Visual inference factor (VIF) values for compassion and kindness are high (4.29 and 4.74, respectively) relative to the remaining variables in the model (all VIFs $\leq$ 1.33). Moreover, compassion and kindness have a very high proportion of variance, 0.91 and 0.84 respectively, loading onto the same dimension-#6, with an Eigenvalue of 0.003 (Table 3).

Table 3. Collinearity Diagnostics for Prosocial Tendencies Measure

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Cognitive Empathy	Affective Empathy	CS Total Compassion	Total kindness subscale of compassion	Fairness Total
1	1	2.971	1.000	.00	.00	.00			
	2	.017	13.251	.00	.63	.73			
	3	.012	15.646	1.00	.37	.26			
2	1	5.934	1.000	.00	.00	.00	.00	.00	.00
	2	.024	15.867	.02	.25	.07	.04	.11	.00
	3	.018	18.174	.03	.07	.78	.00	.01	.10
	4	.015	19.809	.13	.69	.04	.00	.04	.12
	5	.007	29.047	.51	.00	.04	.05	.00	.77
	6	.003	46.816	.31	.00	.06	.91	.84	.01

a. Dependent Variable: PTM Total prosocial tendencies measure

In short, compassion and kindness share far too much variance to be included as individual predictors in a model predicting prosocial tendencies. Because the construct kindness is more conceptually distinct than compassion, the latter predictor was removed from the remainder of the analyses.

Model of Variables Predicting Prosocial Tendencies

Hierarchical regression was used to assess the revised model with prosocial tendencies as the criterion and cognitive empathy and affective empathy loaded into the first block then fairness and kindness loaded into the second block. Cognitive and affective empathy entered simultaneously in Model 1 reliably predicted prosocial tendencies: R^2 = .11; $F(2, 190) = 11.62$, $p < 0.001$ (Table 4). Only cognitive empathy contributed reliably to

Table 4. Simultaneous Hierarchical Regression Analysis Summary for Predicting Prosocial Tendencies without Compassion (N = 193)						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	36.560	6.695		5.461	.000
	Cognitive Empathy	.422	.098	.318	4.323	.000
	Affective Empathy	.070	.166	.031	.423	.673
2	(Constant)	47.319	8.502		5.566	.000
	Cognitive Empathy	.422	.099	.318	4.269	.000
	Affective Empathy	-.067	.173	-.030	-.390	.697
	Fairness Total	-.477	.160	-.228	-2.989	.003
	Total kindness subscale of compassion	1.110	.352	.259	3.150	.002
	Note. Adjusted R2 = 0.17; F(4,188) = 9.59, p < 0.001					

the prediction: β= .32. Model 2, with all four predictors entered simultaneously, also reliably predicted prosocial tendencies: R^2 = .17; F(4, 188) = 9.59, p < 0.001. Cognitive empathy, fairness, and kindness were reliable individual contributors to the prediction. Standardized beta coefficients for Model 2 showed that positive unit changes in cognitive empathy (β = 0.32) and kindness (β = 0.26) predict increases in prosocial tendencies. Unit changes in fairness (β = -0.23) predict decreases in prosocial tendencies. The adjusted R squared value for Model 2 (0.15) was improved compared with Model 1 (0.10), indicating an additional 5% of the variance in prosocial behavior can be explained by including fairness and kindness as predictors (Model 2).

Predicting Individual Dimensions of Prosocial Tendencies

Tables 5-10 show the values of standardized and unstandardized beta, standard error of beta, *t*, and significance of predictors for each of the models used to predict one of prosocial tendency's dimensions. Positive unit changes in standardized beta for cognitive empathy (all βs $\geq$ 0.16) predict increases in every dimension of prosocial tendencies. Positive unit changes in standardized beta for kindness (all βs $\geq$ 0.20) predict increases in four

dimensions of prosocial tendencies: dire, compliant, anonymous, and emotional. Increases in standardized beta for fairness (both βs $\geq$ -0.35) predict decreases in two dimensions of prosocial tendencies: public & altruistic. The prosocial tendencies measure comprised multiple subscales including, public, dire, emotional, compliant, altruism, and anonymous. Hierarchical regression was used to assess the predictive value of cognitive empathy, affective empathy, fairness, and kindness for each dimension of prosocial tendencies. The model with all four predictors was reliable for all six dimensions of prosocial tendencies: all *Fs* (4, 188) $\geq$ 5.64, p $\leq$ 0.001 (tables 5-10). One of the predictors, cognitive empathy, was individually reliable in all six models. Kindness was individually reliable in 4 (dire, compliant, anonymous, emotional) of 6 models. Fairness was individually reliable in 2 (public, altruistic) of 6 models. The amount of variability in predicting dimensions of prosocial tendencies ranged from 11% (anonymous) to 28% (compliant) (tables 5-10).

Table 5. Simultaneous Hierarchical Regression Analysis Summary for Predicting Public Prosocial Tendencies (N = 193)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.648	1.872		4.085	.000
	Cognitive Empathy	.048	.027	.135	1.761	.080
	Affective Empathy	-.083	.047	-.137	-1.788	.075
2	(Constant)	14.976	2.319		6.459	.000
	Cognitive Empathy	.081	.027	.227	2.992	.003
	Affective Empathy	-.053	.047	-.087	-1.121	.264
	Fairness Total	-.196	.044	-.349	-4.496	.000
	Total kindness subscale of compassion	-.010	.096	-.009	-.106	.916
	Note. Adjusted R2 = 0.12; F(4,188) = 7.3, p < 0.001					

Table 6. Simultaneous Hierarchical Regression Analysis Summary for Predicting Emotional Prosocial Tendencies (N = 193)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.125	1.714		1.823	.070
	Cognitive Empathy	.091	.025	.258	3.648	.000
	Affective Empathy	.151	.043	.251	3.549	.000
2	(Constant)	1.993	2.118		.941	.348
	Cognitive Empathy	.068	.025	.192	2.753	.006
	Affective Empathy	.077	.043	.127	1.785	.076
	Fairness Total	-.042	.040	-.076	-1.065	.288
	Total kindness subscale of compassion	.432	.088	.378	4.920	.000
	Note. Adjusted R2 = 0.26; $F(4,188) = 17.62$, $p < 0.001$					

Table 7. Simultaneous Hierarchical Regression Analysis Summary for Predicting Compliant Prosocial Tendencies (N = 193)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.301	.814		4.057	.000
	Cognitive Empathy	.051	.012	.303	4.261	.000
	Affective Empathy	.051	.020	.179	2.512	.013
2	(Constant)	.983	.994		.989	.324
	Cognitive Empathy	.033	.012	.200	2.877	.004
	Affective Empathy	.015	.020	.051	.723	.470
	Fairness Total	.034	.019	.130	1.833	.068
	Total kindness subscale of compassion	.167	.041	.311	4.059	.000
	Note. Adjusted R2 = 0.26; $F(4,188) = 18.06$, $p < 0.001$					

Table 8. Simultaneous Hierarchical Regression Analysis Summary for Predicting Altruistic Prosocial Tendencies (N = 193)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.299	2.118		4.863	.000
	Cognitive Empathy	.019	.031	.046	.600	.549
	Affective Empathy	-.072	.053	-.105	-1.360	.175
2	(Constant)	19.835	2.568		7.725	.000
	Cognitive Empathy	.062	.030	.155	2.069	.040
	Affective Empathy	-.029	.052	-.042	-.554	.581
	Fairness Total	-.251	.048	-.399	-5.215	.000
	Total kindness subscale of compassion	-.033	.106	-.026	-.309	.758
	Note. Adjusted R2 = 0.14; $F(4,188) = 8.87$, $p < 0.001$					

Table 9. Simultaneous Hierarchical Regression Analysis Summary for Predicting Anonymous Prosocial Tendencies (N = 193)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.358	2.404		3.476	.001
	Cognitive Empathy	.136	.035	.290	3.878	.000
	Affective Empathy	-.039	.060	-.049	-.659	.511
2	(Constant)	6.875	3.109		2.211	.028
	Cognitive Empathy	.116	.036	.248	3.210	.002
	Affective Empathy	-.096	.063	-.120	-1.523	.129
	Fairness Total	-.013	.058	-.018	-.224	.823
	Total kindness subscale of compassion	.314	.129	.208	2.440	.016
	Note. Adjusted R2 = 0.09; $F(4,188) = 5.65$, $p < 0.001$					

Table 10. Simultaneous Hierarchical Regression Analysis Summary for Predicting Dire Prosocial Tendencies (N = 193)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.828	1.323		2.894	.004
	Cognitive Empathy	.078	.019	.292	4.033	.000
	Affective Empathy	.063	.033	.138	1.902	.059
2	(Constant)	2.656	1.683		1.578	.116
	Cognitive Empathy	.062	.020	.235	3.192	.002
	Affective Empathy	.019	.034	.042	.560	.576
	Fairness Total	-.009	.032	-.021	-.279	.781
	Total kindness subscale of compassion	.240	.070	.278	3.434	.001
	Note. Adjusted R2 = 0.17; $F(4,188) = 10.997$, $p < 0.001$					

Does Sex Moderate the Association between Predictors and Prosocial Tendencies?

Using the collected demographic information, moderation analyses were conducted. With gender (recategorized as sex) used as a binary moderation variable (male = 0; female = 1), hierarchical regression was used to determine whether sex reliably moderated any of the predictors for prosocial tendencies. A moderation analysis including each individual predictor was conducted with the total prosocial tendencies score as the criterion, sex as a moderator variable, and the remaining predictors as covariates. Sex was found to be a reliable

moderator only for kindness when predicting prosocial tendencies overall (p = 0.027) and was found to be reliable when predicting the prosocial tendencies of dire, emotional, and compliant. Figure 1 shows the relationship between kindness and prosocial tendencies was stronger for males, compared to females. However, at low levels of kindness, males and females have non-significantly different prosocial tendencies. Additionally, Figures 2 and 3 show males with high kindness are higher in dire and emotional prosocial tendencies than females, but males and females with low levels of kindness are non-significantly different. In contrast to this trend, Figure 4 indicates that females low in kindness are higher in compliant prosocial tendencies than males, but high kindness males and females are the same in this measure.

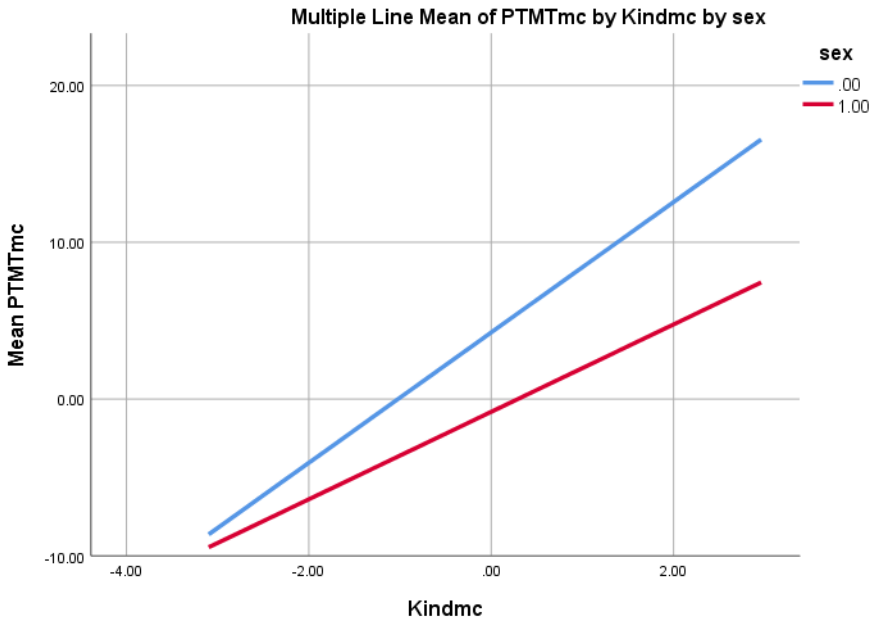

Figure 1. Multiple Line Mean of Prosocial Tendencies Measure Total and Kindness Moderated by Sex (Male = 0; Female = 1).

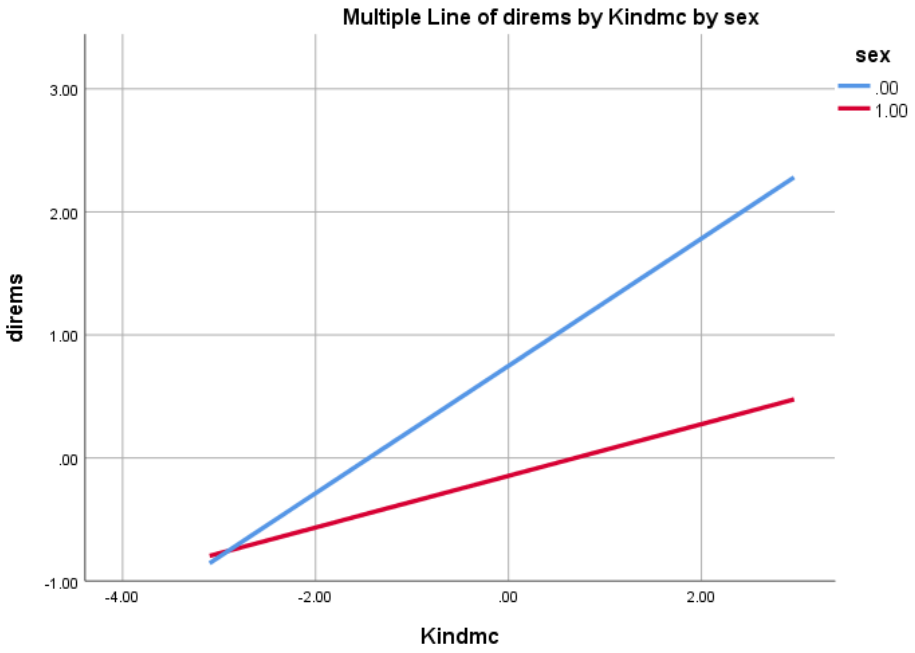

Figure 2. Multiple Line Mean of Dire Prosocial Tendencies and Kindness Moderated by Sex (Male = 0; Female = 1).

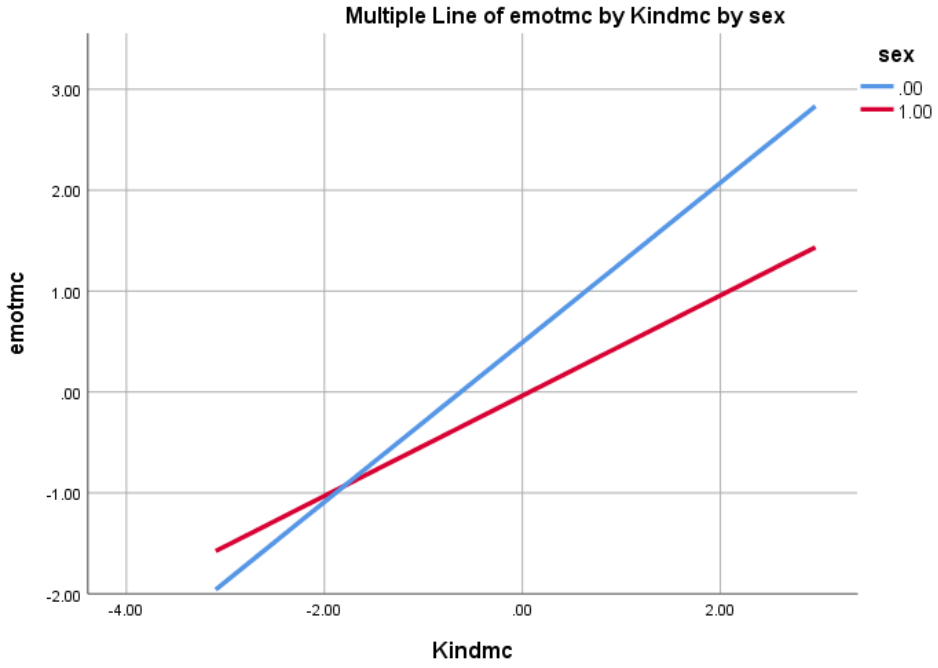

Figure 3. Multiple Line Mean of Emotional Prosocial Tendencies and Kindness Moderated by Sex (Male = 0; Female = 1).

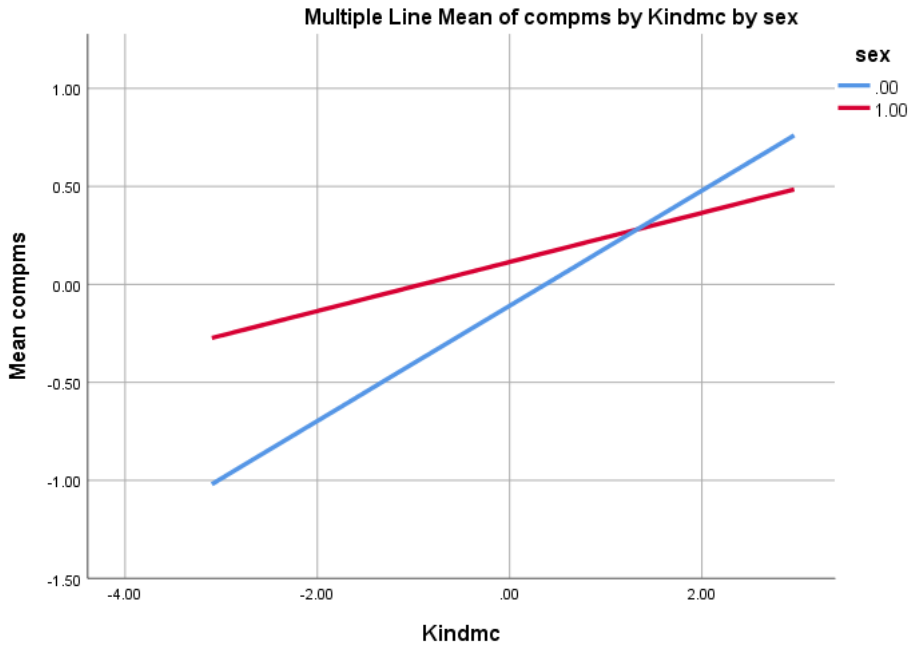

Figure 4. Multiple Line Mean of Compliant Prosocial Tendencies and Kindness Moderated by Sex (Male = 0; Female = 1).

Discussion

Cognitive Empathy and Kindness

This study's purpose was to determine which among the constructs of empathy, compassion, fairness, and kindness best predict prosocial behavior. Given the data from the preliminary analyses, individuals who score higher on self-reported measures of cognitive empathy and kindness also report greater participation in behaviors that benefit others. Furthermore, in conjunction with Bloom's (2016) argument, this study suggests that rational thinking, in the case of cognitive empathy, influences prosocial tendencies more so than affective empathy. Similarly, previous studies have indicated a relationship between prosocial tendencies and kindness; however, many have defined kindness as both prosocial acts and the underlying motivation (Knafo & Israel, 2012). The primary analyses support the

role of the motivational aspect of kindness in prosocial behavior but did not examine kindness as a specific prosocial act.

Kindness and Sex as a Moderator

In consideration of the moderation analyses, gender differences may offer some explanation. For the finding that females who scored low on kindness scored high on compliant prosocial behaviors, this may be due to the types of prosocial behaviors. Females generally engage in prosocial behaviors that are more communal and align with more stereotypically feminine traits like nurturing and warmth (Croft et al., 2021). Additionally, females are perceived as more effective caregivers (Croft et al., 2021). This may raise the baseline in females' self-reported responses to their prosocial tendencies and kindness as they succumb to the self-fulfilling prophecy about gender roles. In other words, females may not perceive that they are kind or prosocial because their perception of how good or prosocial females should be is higher than their perception of kindness or prosociality in males.

Males generally seek out more agentic prosocial behaviors that tend to align with more stereotypically masculine traits like risk-taking and status-seeking (Croft et al., 2021). Thus, males are typically more likely and expected to engage in high-risk and heroic prosocial behaviors including helping in emergencies or assisting individuals they do not know (Becker & Eagly, 2004; Rankin & Eagly, 2008; as cited in Croft et al., 2021). This relates to the finding of this study that males higher in kindness are more likely than females higher in kindness to engage in dire prosocial tendencies. In addition, chivalry, one of the most common forms of male prosociality, may contribute to the findings that males higher in kindness scored higher on the emotional subscale of the prosocial tendencies measure. In this instance, chivalry can be understood as a prosocial behavior where one group that is usually

more competent or powerful seeks to protect and carry out courteous behaviors toward another group (Croft et al., 2021). Carlo and Randall (2002) reaffirm the link between chivalry and heroic prosocial behaviors in males due to social role theory. These ideas relate to the finding that males high in kindness are more likely to participate in dire and emotional prosocial tendencies. As kindness increases, emotional prosocial tendencies tend to increase among males; this relationship is also positive among females, but the association is stronger for males.

Overall, females and males exhibit different types of prosocial tendencies. Specifically, gender stereotypes reinforce this differentiation with masculine stereotypes reinforcing chivalry and heroism in males and feminine stereotypes reinforcing communal prosocial tendencies like nurturing in females (Croft et al., 2021). From these stereotypes, actual gender differences manifest in prosocial tendencies which may indicate the results found in the moderation analyses (Croft et al., 2021).

Limitations and Future Directions

There are a few limitations to the current study that offer areas for future directions. The correlational methodology does not allow for a cause-and-effect claim, but the goal of this study was to establish constructs of interest for future experimental approaches. Therefore, expanding the study to incorporate other age groups and/or considering an experimental approach based on the results are possible future directions. In terms of measures, finding the CRT-2 not reliable resulted in not being able to use the data from this questionnaire. This discrepancy between our study and previous research may be because the CRT-2 is a smaller version of the original cognitive reflection task. To remedy this, using the original cognitive reflection task or a similar measure may increase reliability as there are

only four questions on the CRT-2. Lastly, the consistent negative beta weight for compassion across all measures of prosocial tendencies may be due to how it was operationalized. Because kindness and compassion are highly correlated a suppression effect may have occurred. This study remedied the issue of multi-collinearity by evaluating the model both with compassion and without. Future research could use separate measures for compassion and kindness to reduce this problem.

Broader Implications

Opportunities in Higher Education

Within the context of higher education, the results from this study can be implemented across the college experience. Brandenberger and Bowman (2015) found that key college experiences like active learning and engagement with multiple perspectives predicted growth in prosocial outcomes in over 14,000 undergraduate students. For example, study abroad opportunities, cross-race discussions, interactions with faculty, and participation in service-learning experiences are examples of some key college experiences that were found to facilitate prosocial orientation in undergraduates by their junior year (Brandenberger & Bowman, 2015). Beyond the classroom, the Delight-Ful challenge by Chartwells offered 300 campuses the opportunity to simultaneously participate in 500,000 random acts of kindness nationwide (PR Newswire, 2022). Opportunities such as the Delight-Ful challenge are ways in which universities can use the findings of this study to promote kindness among the student body.

Pedagogically, face-to-face collaboration and classroom experiences prioritizing empathy are other areas where universities can implement the findings from this study (Carlson & Dobson, 2020). Because empathy is most effectively developed in community

settings, classrooms can be a prime setting for empathy development (Carlson & Dobson, 2020). Written reflections, especially those centered around examining perspectives, can facilitate empathy development (Carlson & Dobson, 2020). In K-12 in the United States of America, the Universal Design for Learning (UDL) framework offers individuals choices for how students interact with the curriculum, thus reducing barriers to learning (Carlson & Dobson, 2020). Implementation of a similar framework focused on sharing and understanding others' perspectives is one-way universities can promote empathy (Damianidou & Phtiaka 2017; as cited in Carlson & Dobson, 2020).

In terms of individual factors, religious engagement and majoring in social sciences predicted higher prosocial outcomes (Brandenberger & Bowman, 2015). While these are not areas where universities can directly influence individuals, universities can use this information to support prosocial outcomes for other fields where students may not be as exposed to public and social issues (Brandenberger & Bowman, 2015). By offering access to broad-based college experiences focused on diversity, universities can promote prosociality, kindness, and empathy among the student body (Brandenberger & Bowman, 2015). Thus, the incorporation of empathy as a pedagogical deliverable is necessary to prepare college students for the workplace and to serve the needs of diverse learners (Carlson & Dobson, 2020). Overall, universities should be caregiving organizations aimed at helping students learn skills that are transferable to the professional world (Waddington, 2018).

Empathy and Prosociality in the Workplace and Economics

Recently, the workplace has shifted to favor employees who are empathetic and culturally aware in all areas of their work (Carlson & Dobson, 2020). There is an increased demand for individuals who are empathetic because many workplaces now highly value

human-centeredness (Carlson & Dobson, 2020). From this demand, opportunities for prosociality such as donations and collaborative work have become popular in the workplace to increase the promotion of human-centeredness. More specifically, Aknin and Whillans (2021) explain that prosocial opportunities in the workplace should promote group work rather than independent work because working together can foster the emotional benefits of giving and stronger connections.

Aknin and Whillans (2021) additionally discuss corporate social responsibility programs and how they offer employees the chance to donate to corporate causes (Aknin & Whillans, 2021). Companies also may have annual fundraising campaigns to support the local community through partnership between the company, employees, and local nonprofits (Aknin & Whillans, 2021). Aknin and Whillans (2021) argue that companies should examine the option of allowing employees to have personal choice over these campaigns through voting rather than choosing the target for fundraising.

Kessler et al. (2019) demonstrated the effectiveness of providing choice in fundraising campaigns through their study. They presented 32,174 Ivy League university alumni with a prompt that either provided possible fundraising options to choose from or a prompt that did not (Kessler et al., 2019). Individuals who exerted control over their decision contributed donations that were 100-350% larger compared to the no-choice group (Kessler et al., 2019). Their findings are consistent with other research related to choice and control over daily actions. Therefore, the consideration of allowing employees a choice in their company-based donations may be effective in increasing engagement (Aknin & Whillans, 2021). Because many undergraduate students can lack empathy for projects they are not passionate about, this can become a problem in the workplace since many

professional careers do not allow individuals to choose the projects they work on (Carlson & Dobson, 2020). So, the addition of choice-based donation endeavors may help increase motivation for projects workers are not passionate about.

Like in the workplace, allowing choice in prosociality can boost satisfaction and increase involvement (Aknin & Whillans, 2019). Various studies have shown that kindness-oriented mediation programs enhanced prosocial behaviors resulting in increased economic donations (Mascaro et al., 2020). Although it is improbable for governments to allow total choice in where citizens' tax dollars go, the feeling of choice can be provided through voting (Mascaro et al., 2020). By offering voting as an outlet for choice, citizens can voice their personal preferences regarding services they personally are vital for society's functioning (Mascaro et al., 2020). Lamberton et al. (2013) found that when given the chance to voice personal preferences, American citizens were 16% more compliant with paying taxes when compared with citizens who did not receive this chance. From these studies, it is suggested that policymakers promote this perception of choice to increase compliance and tax revenue (Aknin & Whillans, 2021).

Because the move toward prosociality and human-centeredness in the workplace and the desire for more empathetic workers, individuals could benefit from increasing their own tendencies toward empathy, prosociality, and kindness. Collaboration and donations, facilitated through options for choice, are two ways individuals can increase these traits and tendencies. The present finding that empathy relates to prosocial behavior highlights the importance of being empathetic for workplace success.

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APPENDIX A

Institutional Review Board Approval Letter

ANGELO STATE UNIVERSITY
College of Graduate Studies
Institutional Review Board

8/17/2021

Dr. James Forbes
Dept. of Psychology and Sociology
Angelo State University
San Angelo, TX 76909

Dear James:

The project that you submitted with your student, Cassidy Martin, titled *"Assessing Predictors of Prosocial Behaviors*" was reviewed and approved by Angelo State University's Institutional Review Board for the Protection of Human Research Subjects in accordance with federal regulations 45 CFR 46.

This protocol has been approved effective August 17, 2021. If the study will continue past next year, please submit a notification of continuation at that time. Please note that any revisions to these approved materials must be approved by the IRB prior to initiation. All unanticipated problems involving risks to subjects or others, and any unexpected adverse events must be reported promptly to this office.

The approval number for your protocol is #FOR-081721. Please include this number in the subject line of in all future communications with the IRB regarding the protocol.

Sincerely,

Teresa (Tay) Hack, IRB Chair
Digitally signed by Teresa (Tay) Hack, IRB Chair
Date: 2021.08.17 14:55:58 -05'00'

Teresa (Tay) Hack, Ph.D.
Chair of the Institutional Review Board

Dr. Teresa Hack, IRB Chair | ASU Station #11025 | San Angelo, Texas 76909
Phone: (325) 486-6121 | Fax: (325) 942-2194
Member, Texas Tech University System | Equal Opportunity Employer

APPENDIX B

Institutional Review Board Consent Form

Top of Form

Angelo State University

Institutional Review Board (IRB) - Approved Online Research

Project Title: Assessing Predictors of Prosocial Behaviors

Investigator Name/Department: Cassidy Martin/Department of Psychology and Sociology

Investigator Phone: 603-759-4398

Faculty Advisor Name/Department: Dr. James Forbes/Department of Psychology and Sociology

Faculty Advisor Phone: 325-486-6120

You are being asked to participate in a research event conducted with the approval of the Angelo State University Institutional Review Board (and if applicable, other relevant IRB committees). In order to participate, you are required to give your consent after reading this document.

An explanation of the project is written below, which includes information about the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. Please read and, should you decide to participate, indicate your agreement on this form. Upon request, you will be given an unsigned copy of this form for your records.

Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time without penalty. I understand also that it is not possible to identify all potential risks in an experimental procedure, and I believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

1. Nature and Purpose of the Project

You are being asked to participate in a research study for Cassidy Martin at Angelo State University. The purpose of this study is to assess whether empathy and rational compassion overall, or specific dimensions of both constructs best predict six different prosocial behaviors. You are only permitted to participate once in the current study.

2. Explanation of Procedures.

The study consists of participants completing, online, six questionnaires. Questionnaires will ask participants to rate how often they behave in the stated manner regarding constructs of prosocial behavior, empathy, fairness, and compassion. Additionally, participants will write in responses to a cognitive reflection test and demographics questionnaire. Completing the study will take at least 30 minutes. By completing this study, you will receive 1 SONA credit for your participation.

3. Discomfort and Risks.

APPENDIX B CONTINUED

The risks of participating in this study are minimal and not expected to be greater than experienced in daily life. Some of the questions may cause some individuals to feel uncomfortable, and everyone has the right to omit answers to any questions without penalty.

4. Benefits.

Your involvement in this research study is completely voluntary, and you may discontinue your participation in this study at any time without penalty. The findings from this study can add to the existing knowledge related to empathy and prosocial behaviors.

5. Confidentiality.

Your confidentiality is important. Data will be accessible only to the researchers through a secure password-protected online data collection host, Psychdata, which uses secure protocols and data encryption. Data will be stored for a period of at least 3 years after which all data will be deleted. You may risk a loss of confidentiality if you choose to email the researchers to ask for results of the study. If you choose to email the researchers, then the researchers will immediately delete such emails after responding to them. There is a potential risk of loss of confidentiality in all email, downloading, and internet transactions.

Agreement: By clicking on the continue button below you are indicating that you have read the above procedures and that you are consenting to voluntarily participate in this study.

This project has been reviewed and approved by the Angelo State University Institutional Review Board (IRB) for the protection of human subjects in research and research related activities. **IRB #FOR-081721 – August 17, 2021.**

Any questions regarding the conduct of the project, questions pertaining to your rights as a research subject, or research-related injury should be brought to the attention of the IRB administrator, Dr. Drew Curtis (drew.curtis@angelo.edu) TEL: (325) 486-6932.

Any question about this specific research project should be brought to the attention of the investigator listed at the top of this form.

To participate in this research, click Continue.

Continue »

APPENDIX C

Prosocial Tendencies Measure

Below are a number of statements that may or may not describe you. Please indicate how much each statement describes you by using the following scale: 1 (Does not describe me at all), 2 (Describes me a little), 3 (Somewhat Describes me), 4 (Describes me well), and 5 (Describes me greatly)

1. I can help others best when people are watching me.
2. It is most fulfilling to me when I can comfort someone who is very distressed.
3. When other people are around, it is easier for me to help needy others.
4. I think that one of the best things about helping others is that it makes me look good.
5. I get the most out of helping others when it is done in front of others.
6. I tend to help people who are in a real crisis or need.
7. When people ask me to help them, I don't hesitate.
8. I prefer to donate money anonymously.
9. I tend to help people who hurt themselves badly.
10. I believe that donating goods or money works best when it is tax-deductible.
11. I tend to help needy others most when they do not know who helped them.
12. I tend to help others particularly when they are emotionally distressed.
13. Helping others when I am in the spotlight is when I work best.
14. It is easy for me to help others when they are in a dire situation.
15. Most of the time, I help others when they do not know who helped them.
16. I believe I should receive more recognition for the time and energy I spend on charity work.
17. I respond to helping others best when the situation is highly emotional.
18. I never hesitate to help others when they ask for it.
19. I think that helping others without them knowing is the best type of situation.
20. One of the best things about doing charity work is that it looks good on my resume.
21. Emotional situations make me want to help needy others.
22. I often make anonymous donations because they make me feel good.
23. I feel that if I help someone, they should help me in the future.

Carlo, G., & Randall, B. (2002). The development of a measure of prosocial behaviors for late adolescents. *Journal of Youth and Adolescence, 31*, 31-44. https://www.researchgate.net/publication/225454728_The_Development_of_a_Measure_of_Prosocial_Behaviors_for_Late_Adolescents

APPENDIX D

Questionnaire for Cognitive and Affective Empathy

Please, read each statement and indicate the degree to which a particular statement relates (or does not relate) to you.

Items are rated on the level of agreement using a 4-point Likert scale with the following response options: 4 (strongly agree), 3 (slightly agree), 2 (slightly disagree), and 1 (strongly disagree)

1. I sometimes find it difficult to see things from the "other guy's" point of view.
2. I am usually objective when I watch a film or play, and I don't often get completely caught up in it.
3. I try to look at everybody's side of a disagreement before I make a decision.
4. I sometimes try to understand my friends better by imagining how things look from their perspective.
5. When I am upset at someone, I usually try to "put myself in his shoes" for a while.
6. Before criticizing somebody, I try to imagine how I would feel if I was in their place.
7. I often get emotionally involved with my friends' problems.
8. I am inclined to get nervous when others around me seem to be nervous.
9. People I am with have a strong influence on my mood.
10. It affects me very much when one of my friends seems upset.
11. I often get deeply involved with the feelings of a character in a film, play, or novel.
12. I get very upset when I see someone cry.
13. I am happy when I am with a cheerful group and sad when the others are glum.
14. It worries me when others are worrying and panicky.

APPENDIX D CONTINUED

15. I can easily tell if someone else wants to enter a conversation.

16. I can pick up quickly if someone says one thing but means another.

17. It is hard for me to see why some things upset people so much.

18. I find it easy to put myself in somebody else's shoes.

19. I am good at predicting how someone will feel.

20. I am quick to spot when someone in a group is feeling awkward or uncomfortable.

21. Other people tell me I am good at understanding how they are feeling and what they are thinking.

22. I can easily tell if someone else is interested or bored with what I am saying.

23. Friends talk to me about their problems as they say that I am very understanding.

24. I can sense if I am intruding, even if the other person does not tell me.

25. I can easily work out what another person might want to talk about.

26. I can tell if someone is masking their true emotion.

27. I am good at predicting what someone will do.

28. I can usually appreciate the other person's viewpoint, even if I do not agree with it.

29. I usually stay emotionally detached when watching a film.

30. I always try to consider the other fellow's feelings before I do something.

31. Before I do something, I try to consider how my friends will react to it.

Reniers, R., Corcoran, R., Drake, R., Shryane, N., & Völlm, B. (2011). The QCAE: A Questionnaire of Cognitive and Affective Empathy. *Journal of Personality Assessment*, 93:1, 84-95. DOI:10.1080/00223891.2010.528484

APPENDIX E

Fairness Questionnaire

Please read each statement carefully before answering. Indicate how often you behave in the stated manner, using the following scale: 1-strongly disagree 2 3 4 5 6-strongly agree

1. I behave fairly most of the time
2. Behaving fairly is important to me
3. I try to treat all people equally
4. I always try to tell the truth
5. I am a trustworthy person
6. I always try to follow the rules
7. I feel better when everyone gets a fair go
8. I don't care about treating people equally
9. I don't mind lying to get ahead
10. I only care about what is best for me

Collins, E., & Strelan, P. (2021). Being fair in an unfair world: The deleterious effect on self-esteem. *Personality and Individual Differences*, https://doi-org.easydb.angelo.edu/10.1016/j.paid.2020.110602

APPENDIX F

Compassion Scale

Please read each statement carefully before answering. Please answer according to what really reflects your experience rather than what you think your experience should be. Indicate how often you behave in the stated manner, using the following scale: 1-almost never 2 3 4 5-almost always

1. I pay careful attention when other people talk to me about their troubles.
2. If I see someone going through a difficult time, I try to be caring toward that person.
3. I am unconcerned with other people's problems.
4. I realize everyone feels down sometimes, it is part of being human.
5. I notice when people are upset, even if they don't say anything.
6. I like to be there for others in times of difficulty.
7. I think little about the concerns of others.
8. I feel it's important to recognize that all people have weaknesses and no one's perfect.
9. I listen patiently when people tell me their problems.
10. My heart goes out to people who are unhappy.
11. I try to avoid people who are experiencing a lot of pain.
12. I feel that suffering is just a part of the common human experience.
13. When people tell me about their problems, I try to keep a balanced perspective on the situation.
14. When others feel sadness, I try to comfort them.
15. I can't really connect with other people when they're suffering.
16. Despite my differences with others, I know that everyone feels pain just like me.

Pommier, E., Neff, K., & Tóth-Király, I. (2019). The development and validation of the Compassion Scale. *Assessment*, 21-39.

APPENDIX G

Cognitive Reflection Task - 2

Please read each question carefully before answering. Please type in your response to each question.

1. If you're running a race and you pass the person in second place, what place are you in? _____
2. A farmer had 15 sheep and all but 8 died. How many are left? _____
3. Emily's father has three daughters. The first two are named April and May. What is the third daughter's name? _____
4. How many cubic feet of dirt are there in a hole that is 3' deep x 3' wide x 3' long? _____

Thomson, K., & Oppenheimer, D. (2016). Investigating an alternate form of the cognitive reflection test. *Judgment and Decision Making*, 11(1), 99–113.

APPENDIX H

Demographic Questionnaire

1. Collegiate year _____
2. Gender _____

Age _____

APPENDIX I

Cronbach Alpha Reliability Analyses

Cronbach alpha for total prosocial tendencies measure

Reliability Statistics

Cronbach's Alpha	N of Items
.876	23

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
q1	62.62	163.669	.412	.873
q2	60.99	162.426	.442	.872
q3	62.47	158.229	.543	.868
q4	63.02	162.663	.444	.872
q5	63.12	162.671	.489	.870
q6	60.93	163.232	.483	.871
q7	60.64	166.662	.390	.873
q8	61.39	165.934	.275	.877
q9	61.28	160.970	.481	.870
q10	62.87	162.468	.464	.871
q11	61.69	159.594	.536	.869
q12	60.93	162.374	.493	.870
q13	63.12	162.033	.538	.869
q14	61.30	160.928	.492	.870
q15	61.70	157.442	.603	.867
q16	63.29	166.766	.408	.873
q17	61.79	158.233	.526	.869
q18	60.70	169.476	.270	.876
q19	61.53	161.819	.465	.871
q20	62.75	164.197	.407	.873
q21	61.36	162.641	.424	.872
q22	62.14	159.143	.458	.871
q23	62.84	163.610	.404	.873

Cronbach alpha for prosocial tendencies measure subscales:

Public Prosocial Tendencies

Reliability Statistics

Cronbach's Alpha	N of Items
.828	4

APPENDIX I CONTINUED

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
q1	5.53	7.580	.607	.803
q3	5.38	6.824	.649	.789
q13	6.04	7.607	.720	.757
q5	6.03	7.690	.659	.781

Emotional Prosocial Tendencies

Reliability Statistics

Cronbach's Alpha	N of Items
.755	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
q2	10.19	7.962	.472	.739
q12	10.12	7.614	.619	.665
q17	10.97	7.015	.550	.701
q21	10.57	7.277	.577	.683

Altruistic Prosocial Tendencies

Reliability Statistics

Cronbach's Alpha	N of Items
.808	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
q4	7.22	10.629	.546	.787
q10	7.07	10.938	.517	.795
q16	7.49	11.567	.608	.773
q20	6.97	9.844	.717	.732
q23	7.04	10.180	.611	.766

Anonymous Prosocial Tendencies

Reliability Statistics

Cronbach's Alpha	N of Items
.812	5

APPENDIX I CONTINUED

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
q8	11.94	14.736	.497	.808
q11	12.23	14.219	.650	.761
q15	12.25	13.990	.674	.754
q19	12.08	14.385	.649	.762
q22	12.69	13.872	.555	.792

Compliant Prosocial Tendencies

Reliability Statistics

Cronbach's Alpha	N of Items
.821	2

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
q7	4.05	.811	.696	.
q18	4.11	.812	.696	.

Dire Prosocial Tendencies

Reliability Statistics

Cronbach's Alpha	N of Items
.716	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
q6	6.92	3.814	.558	.608
q9	7.27	3.454	.508	.664
q14	7.29	3.371	.549	.612

Questionnaire for Cognitive and Affective Empathy

Reliability Statistics

Cronbach's Alpha	N of Items
.866	31

APPENDIX I CONTINUED

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
eq1	93.72	146.983	.245	.866
eq2	93.71	151.056	.053	.870
eq3	93.19	145.991	.340	.864
eq4	93.09	145.656	.411	.862
eq5	93.56	141.335	.510	.860
eq6	93.45	141.543	.476	.860
eq7	93.74	143.696	.371	.863
eq8	93.80	145.998	.243	.867
eq9	93.17	146.568	.290	.865
eq10	93.46	145.456	.368	.863
eq11	93.62	144.118	.308	.865
eq12	93.92	143.864	.335	.864
eq13	93.52	145.273	.337	.864
eq14	93.50	145.262	.341	.864
eq15	93.37	143.463	.425	.862
eq16	93.43	142.376	.453	.861
eq17	94.12	147.671	.154	.870
eq18	93.24	138.598	.511	.859
eq19	93.31	139.879	.496	.860
eq20	92.64	139.981	.593	.858
eq21	92.99	137.842	.576	.857
eq22	92.73	138.416	.607	.857
eq23	92.74	138.280	.583	.857
eq24	92.66	143.039	.398	.862
eq25	93.61	143.663	.457	.861
eq26	93.46	144.141	.472	.861
eq27	93.70	145.136	.363	.863
eq28	93.34	145.441	.358	.863
eq29	93.51	148.393	.165	.868
eq30	93.42	143.896	.478	.861
eq31	93.52	144.925	.377	.863

Cognitive Empathy

Reliability Statistics

Cronbach's Alpha	N of Items
.881	19

APPENDIX I CONTINUED

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
eq1	58.43	81.094	.319	.881
eq3	57.89	80.140	.442	.876
eq4	57.79	80.352	.491	.875
eq5	58.26	77.302	.559	.872
eq6	58.16	77.937	.490	.875
eq15	58.08	78.657	.490	.875
eq16	58.13	78.277	.487	.875
eq18	57.95	74.443	.595	.871
eq19	58.02	76.070	.545	.873
eq20	57.35	76.760	.613	.871
eq21	57.70	75.484	.571	.872
eq22	57.43	75.225	.648	.869
eq24	57.37	78.473	.447	.877
eq25	58.31	78.651	.542	.873
eq26	58.16	80.147	.472	.876
eq27	58.40	79.415	.467	.876
eq28	58.04	80.711	.386	.878
eq30	58.12	79.758	.495	.875
eq31	58.23	81.057	.352	.879

Affective Empathy

Reliability Statistics

Cronbach's Alpha	N of Items
.749	12

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
eq2	32.41	31.041	.114	.760
eq7	32.44	27.706	.430	.726
eq8	32.51	26.517	.511	.715
eq9	31.89	28.770	.389	.732
eq10	32.18	27.999	.510	.720
eq11	32.34	26.715	.467	.721
eq12	32.65	26.570	.511	.715
eq13	32.24	28.068	.446	.725
eq14	32.20	27.690	.503	.719
eq17	32.82	29.670	.169	.762
eq23	31.44	28.928	.273	.746
eq29	32.22	28.671	.340	.737

APPENDIX I CONTINUED

Fairness scale

Reliability Statistics

Cronbach's Alpha	N of Items
.802	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
fq1	47.21	29.955	.537	.778
fq2	46.95	31.331	.539	.780
fq3	46.84	31.118	.465	.786
fq4	47.23	30.507	.482	.784
fq5	46.83	31.633	.480	.785
fq6	47.24	29.970	.495	.782
fq7	46.98	31.264	.487	.784
fq8	46.72	31.760	.354	.799
fq9	47.06	29.610	.466	.787
fq10	47.26	28.682	.508	.782

Compassion scale

Reliability Statistics

Cronbach's Alpha	N of Items
.869	16

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
cq1	62.18	70.463	.765	.851
cq2	62.18	70.372	.741	.852
cq3	62.70	73.823	.355	.869
cq4	62.13	75.374	.370	.867
cq5	62.41	71.706	.593	.857
cq6	62.30	70.107	.725	.852
cq7	62.69	73.753	.310	.873
cq8	62.00	73.274	.656	.857
cq9	62.26	70.760	.681	.854
cq10	62.48	72.188	.534	.860
cq11	62.91	74.338	.350	.869
cq12	62.92	76.894	.199	.876
cq13	62.36	71.906	.619	.857
cq14	62.42	69.666	.732	.851
cq15	62.89	73.288	.360	.869
cq16	62.46	72.691	.453	.864

APPENDIX I CONTINUED

Kindness subscale

Reliability Statistics

Cronbach's Alpha	N of Items
.855	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
cq2	12.65	5.533	.740	.800
cq6	12.77	5.396	.736	.800
cq10	12.95	5.755	.563	.874
cq14	12.89	5.183	.768	.785

CRT-2

Scale Reliability Statistics

	Cronbach's α
scale	**0.535**

Item Reliability Statistics

	if item dropped
	Cronbach's α
Q1	**0.375**
Q2	**0.318**
Q3	**0.485**
Q4	**0.614**

APPENDIX J

Descriptive Statistics for QCAE Total and CRT-2

Descriptives

	QCAE Total
N	195
Missing	788
Mean	95.0
Median	96.0
Standard deviation	15.1
Minimum	4.00
Maximum	128

Descriptives

	CRT-2
N	196
Missing	787
Mean	2.48
Median	3.00
Standard deviation	1.10
Minimum	0.00
Maximum	4.00