ISSN (P): 2960-1347 ISSN (O): 2960-1355

Vol (2), Issue (3), 2025

International Journal of Innovative Insights in the Social and Natural Sciences

The Role of Social Responsibility and Empathy in Prosocial Behavior during Global Crises

Arwa Abdullah Alsalman

Department of Educational Sciences, Majmaah University (MU), Al-Majmaah, 11952, Saudi Arabia, ar.alsalman@mu.edu.sa

Abstract

Prosocial behavior play a significant role during global crises. Furthermore, positive behaviors, such as empathy and social responsibility, can alleviate the severity stressful events. The current study investigated these positive behaviors and their role in developing prosocial behavior during COVID pandemic in 381 university undergraduate students at King Saud University in Saudi Arabia. To measure social responsibility, empathy and prosocial behavior, the researcher has used Social Responsibility Scale, Toronto Empathy Questionnaire, and Prosocial Behavior Scale. The *t*-test, the Pearson correlation coefficient, and Macro program Process have used to analyze the links between the research variables prosocial behavior, social responsibility, and empathy. In relation to the pandemic, social responsibility and empathy were associated with prosocial behavior. Moreover, empathy mediated the association between social responsibility and prosocial behavior. Furthermore, men had higher prosocial behavior and social responsibility then women while, women had higher empathy then men. Our results offer new insights into the roles that positive factors play in improving the mental health of university students during pandemics situation.

Keywords: prosocial behavior**;** social responsibility**;** empathy**;** global crises

Introduction

Globally, the stressful events such as COVID pandemic have triggered an unprecedented psychological and social crisis, especially among university students who experienced an absence of physical classes and a lack of social life, affected their mental health and social activity [1], [2], [3]. With increasingly negative impact of global crises on individuals, these crises must be confronted by endorsing more positive social behaviors [4], [5]. Therefore, it is crucial that we focus on factors that improve mental health, which in turn contribute to combating the effects of global crises.

Prosocial behavior, e.g., helping, donating, and sharing, plays a positive role in improving the mental health of students whose communities have been exposed to health crises or natural disasters. This type of positive behavior also increases the level of life satisfaction [4]. Moreover, prosocial behavior also benefits the recipients of help and thus contributes to the recovery from the

negative impact of global health crises [6]. Therefore, the levels of prosocial behavior of university students should be improved [7]. However, during COVID pandemic, little has been known about the prosocial behavior of university students and the factors influencing it.

Problem Statement

Prosocial behavior represents one of the most vital aspects of human interaction and becomes particularly evident during times of crises and disasters [1]. During the COVID-19 pandemic, a noticeable decline in prosocial behavior was observed among university students [5]. Dhar et al., (2020) reported that university students experienced social isolation, which adversely affected their social functioning. Therefore, it is essential to identify and examine the factors that contribute to enhancing prosocial behavior among this population.

Prosocial behavior, social responsibility, and empathy are highly influential factors in confronting health crises such as the COVID pandemic [8]. Previous studies found that social responsibility is related to social behavior [9]; [10]; [8]). Social responsibility can predict the social behavior of individuals [9]. Desrumaux et al., (2015) have reported that more responsible university students are more positive towards others. Responsible individuals are concerned about the needs of others and tend to help others, which is a form of prosocial behavior. Such students are more capable of feeling social responsibility towards members of their community and thus exhibit various positive prosocial behaviors, such as altruism, comforting, and donating [12]. Additionally, social responsibility is one of the main pillars of prosocial behavior during the health crises [13]. For example, in public areas, university students feel social responsibility and thus exhibit prosocial behavior, such as adhering to precautionary measures (e.g., wearing face masks and maintaining sufficient physical distance in public places) [14]. Additionally, they help those who are affected, either physically, socially, or even financially. For instance, responsible individuals donate to people who have lost their jobs due to the stressful events to alleviate negative consequences [15].

Social responsibility might affect the occurrence of social behavior through a certain path [9]. Cehajic et al., (2009) found that responsibility predicts empathy. Individuals who take responsibility are more empathetic towards others. Additionally, they tend to relate to others, sharing their emotions and feelings [16]. Conversely, lack of responsibility may produce negative feelings and decrease empathy [17]. Having sufficient empathy leads to wide forms of prosocial behavior such as cooperating and helping [18]; [19]. Empathy enhances an individual's ability to face crises and help others [20]. According to Hoffman (2008), empathy is the main driver of prosocial behavior. Furthermore, it is an essential topic of positive psychology and an important indicator of positive behaviors such as altruism [22]. University students with high empathy have a higher level of prosocial behavior [8]. Empathetic individuals perceive the negative feelings of others and feel their distress, which makes them more interested in others and willing to help them [23]. Although the relationships between social responsibility, empathy, and prosocial behavior

have not yet been investigated, it has been suggested that empathy links social responsibility with prosocial behavior.

Furthermore, gender may strongly affect the level of prosocial behavior [24]. It is believed that women are more prosocial than men [25]; [26]; [27]. Nevertheless, men contribute more than women to prosocial behavior [28]. Moreover, gender determines the type of prosocial behavior. Men are superior to women in prosocial behavior that requires physical effort, such as the work of firemen and lifeguards, whereas women participate emotionally and financially [24]. On the other hand, previous research has reported gender differences in empathy, indicating that women tend to demonstrate a higher ability to empathize with others across various situations [28] ; [29]. However, Deng et al.,(2023) found no significant gender differences in empathy. With regard to social responsibility, some studies have shown that men exhibit higher levels of social responsibility than women [30] ; [31]. In contrast, women have been found to play a crucial role in social responsibility, particularly in its emotional and social dimensions [32]. Nonetheless, differences in the levels of prosocial behavior, empathy, and social responsibility between men and women during global crises are still unknown.

The abovementioned studies suggest that social responsibility, empathy, and gender influence prosocial behavior. However, these studies such as the study of Silke et al., (2021) showed the effect of social responsibility on prosocial behavior in general. Thus, this study attempted to delve deeper by examining social responsibility factors and the extent of their effects on empathy and prosocial behavior among students at King Saud University in Saudi Arabia during the COVID pandemic. Furthermore, empathy probably plays a crucial role as a mediator in the relationship between social responsibility and prosocial behavior.

Significance of the Study

This study is significant because its findings contribute to enhancing the prosocial behavior of university students. In addition, the research highlighted the importance of factors such as social responsibility and empathy, and their roles in improving prosocial behavior. The study provided substantial value by examining the mediating role of empathy in the relationship between social responsibility and prosocial behavior. Moreover, the results offered important evidence that enriches the existing literature on prosocial behavior and its influencing factors. Finally, this study may assist professionals who focus on student-related issues and affairs.

ISSN (P): 2960-1347 ISSN (O): 2960-1355

Vol (2), Issue (3), 2025

International Journal of Innovative Insights in the Social and Natural Sciences

Objective of the Study

This study objected to identify the relationships between social responsibility, empathy, and prosocial behavior. Moreover, this study examined the mediating influence of empathy in the relationship between social responsibility and prosocial behavior. Finally, the study compared the differences between men and women in social responsibility, empathy and prosocial behavior.

Study Hypothesis

The following hypothesis were formulated:

Hypothesis 1.

A positive and statistically significant association exists between social responsibility (self-responsibility, religious responsibility, collective responsibility, and national responsibility) empathy among university students.

Hypothesis 2.

A positive and statistically significant association exists between social responsibility (self-responsibility, religious responsibility, collective responsibility, and national responsibility) prosocial behavior among university students.

Hypothesis 3.

A positive and statistically significant association exists between empathy and prosocial behavior among university students.

Hypothesis 4

Empathy is a mediator in the association between social responsibility and prosocial behavior.

Hypothesis 5.

There is a statistically significant difference in prosocial behavior among university students according to the gender variable (men, women).

Hypothesis 6.

There is a statistically significant difference in empathy among university students according to the gender variable (men, women).

Hypothesis 7.

There is a statistically significant difference in social responsibility among university students according to the gender variable (men, women).

ISSN (P): 2960-1347 ISSN (O): 2960-1355

Vol (2), Issue (3), 2025

International Journal of Innovative Insights in the Social and Natural Sciences

Limitations

The location of the study was in Riyad, Saudi Arabia. Additionally. The sample of this study was only university students.

Operational Definition

prosocial behavior: the prosocial behavior's operational definition in the study referred to the score of university students on the Adult Prosocialness Instrument (API) Caprara et al. (2005).

Empathy: The operational definition of empathy in the study referred to score of university students on the Toronto Empathy Questionnaire (TEQ) (Spreng et al, 2009).

Social Responsibility: the operational definition of social responsibility in this study referred to score of university students on the Social responsibility scale (Osman, 2010).

Materials and Methods

Sample Of the Study

This study was conducted among university students between November 2021 and April 2021 after the pandemic had been relatively controlled and normal daily life was being restored in Saudi Arabia. Paper questionnaires were collected from 381 university students from King Saud University, of which 188 (49%) were male and 193 (51%) female.

Study Instruments

Social Responsibility: to measure the social responsibility of university students, the Social Responsibility Scale was used that prepared by Osman (2010). It contains 43 phrases distributed over 4 factors (self-responsibility 12 items (1-12), religious 10 items(13-22), collective11 items (23-33), and national responsibility 10 items (34-43). The scale follows the 5-point Likert scale: 5=strongly agree,4= agree, 3=not sure, 2=disagree, and 1=strongly disagree. Thus, the minimum total score for the scale is 43, while the maximum total score is 215 with higher scores indicating higher level of social responsibility.

Social Responsibility Scale Reliability

Table 1: Social Responsibility Reliability

Scale	Cronbach's alpha	N of items
Personal Responsibility	0.81	12

Religious Responsibility	0.74	10
Collective Responsibility	, 0.84	11
National Responsibility	0.69	10

Cronbach's alpha was used to ensure the reliability of this scale, and the following α values were obtained: 0.81, 0.74, 0.84, and 0.69 for personal, religious, collective, and national responsibility, respectively, indicating good reliability.

Empathy: to measure empathy, the Toronto Empathy Questionnaire by Spreng et al, (2009) was used. It contains 16 positive or negative statements, which are rated as always (4), often (3), sometimes (2), rarely (1), or never (1). The minimum possible score on the scale is 1, while the maximum possible score is64, with higher scores reflecting higher level of empathy.

Empathy Scale Reliability

Table 2: Empathy Reliability

Scale	Cronbach's alpha	N of items
Empathy	0.84	16

Cronbach's alpha was 0.84, indicating high reliability.

Prosocial Behavior: to measure prosocial behaviors (e.g., helping, donating, and sharing), the Prosocial Behavior Scale was used that prepared by Caprara et al. (2005). It includes 16 items, which are rated by the Likert scale: 4=permanently, 3=sometimes, 2=rarely, and 1=never. The minimum possible score on the scale is 16, while the maximum possible score is 64, with higher scores reflecting higher level of prosocial behaviors [33].

Prosocial Behavior Scale Reliability

Table 3: Prosocial Behavior Reliability

Scale	Cronbach's alpha	N of items
Personal Responsibility	0.87	16

Cronbach's alpha was 0.87, indicating high reliability.

Procedure

This research was approved by the Scientific Research Ethics Board at King Saud University, Riyadh, Saudi Arabia. Participants were informed that the data collected would be used for scientific purposes and that they had the right to withdraw from participating whenever they wished.

Students first completed a form with their demographic information. The questionaries were completed in the following order: social responsibility, empathy, and prosocial behavior. Afterwards, thanks and gratitude were extended to the participating students, questionnaires were collected, and the purpose of the study was revealed. This process took approximately 25–35 min.

Data Analysis

SPSS 24.0 was used to analyze the links between the research variables. The *t*-test was conducted to assess whether there is a gender difference in prosocial behavior. The Pearson correlation coefficient was used to assess the association between prosocial behavior, social responsibility, and empathy. Macro program Process 3.4 was used to examine the role of empathy as a mediator in the relationship between social responsibility and prosocial behavior.

Results

Hypothesis 1.

A positive and statistically significant association exists between social responsibility (self-responsibility, religious responsibility, collective responsibility, and national responsibility) empathy among university students.

Table 4: Correlations Between Social Responsibility, and Empathy.

Social Responsibility	Empathy	
	Correlation value	***P***
Self-responsibility	.065	.053
Religious responsibility	.455	.000
Collective responsibility	.105	.01
National responsibility	.161	.000

ISSN (P): 2960-1347 ISSN (O): 2960-1355

Vol (2), Issue (3), 2025

International Journal of Innovative Insights in the Social and Natural Sciences

Religious (r = 0.455, $p < .000$), collective (r = 0.105, $p < .000$), and national responsibility (r =0.161, $p < .000$) were positively linked with empathy (Table 4). Hence, hypothesis 2 is mostly supported.

Hypothesis 2.

A positive and statistically significant association exists between social responsibility (self-responsibility, religious responsibility, collective responsibility, and national responsibility) prosocial behavior among university students.

Table 5: Correlations Between Social Responsibility, and Prosocial Behavior.

Social Responsibility	**Prosocial behavior**	
	Correlation value	***P***
Self-responsibility	.108	.016
Religious responsibility	.481	.000
Collective responsibility	.251	.000
National responsibility	.157	.001

Moreover, university students who had religious (r =0. 481, $p < .000$), collective (r =0. 251, $p < .000$), and national responsibility (r = 0.157, $p < .001$) exhibit prosocial behavior during the COVID-19 pandemic. Hence, hypothesis 2 is mostly supported.

Hypothesis 3.

A positive and statistically significant association exists between empathy and prosocial behavior among university students

Table 6: The Association Between Empathy and Prosocial Behavior.

Empathy	**Prosocial Behavior Correlation**	***P***
	.209	.000

ISSN (P): 2960-1347 ISSN (O): 2960-1355

Vol (2), Issue (3), 2025

International Journal of Innovative Insights in the Social and Natural Sciences

University students who exhibited positive behavior towards others during the COVID-19 pandemic were empathetic (r= 0.209, $p < .000$). Hence, hypothesis 3 is supported.

Hypothesis 4

Empathy is a mediator in the association between social responsibility and prosocial behavior.

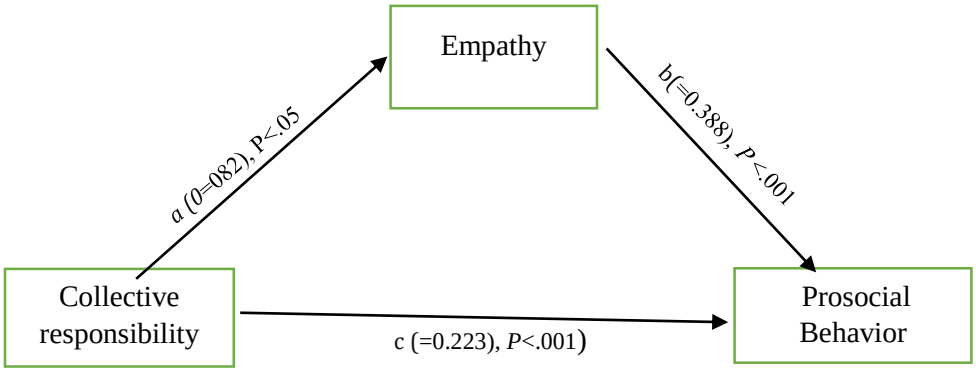

Figure 1: Empathy is a Mediator Between Collective Responsibility and Prosocial Behavior.

Collective responsibility predicted empathy (β =0. 082, SE =0.031, $P < .05$), indicating a direct relationship between collective responsibility and empathy (Figure 1). Additionally, collective responsibility (β =0.223, SE= 0.046, $P < .001$) and empathy (β =388, SE=0.057, $P < .001$) predicted prosocial behavior. Furthermore, the indirect coefficient (β =0.033, SE=0.017, 95% CI = 0.0030, 0.0637) was significant. Hence, hypothesis 3 is supported. This finding reveals that empathy is a mediator in the relationship between collective responsibility and prosocial behavior.

Hypothesis 5.

There is a statistically significant difference in prosocial behavior among university students according to the gender variable (men, women).

Hypothesis 6.

There is a statistically significant difference in empathy among university students according to the gender variable (men, women).

Hypothesis 7.

There is a statistically significant difference in social responsibility among university students according to the gender variable (men, women).

ISSN (P): 2960-1347 ISSN (O): 2960-1355

Vol (2), Issue (3), 2025

International Journal of Innovative Insights in the Social and Natural Sciences

Table 7: Independent Sample *t*-test of Gender Difference.

Constructs	Gender	M	SD	T	*P*
Prosocial Behavior	Men	3.762	.406	-4.047	.000
	Women	3.584	.450		
Empathy	Men	3.804	.557	-3.736	.000
	Women	4.004	.473		
Social Responsibility	Men	3.863	.402	-4.035	.000
	Women	3.664	.460		

Note: M=mean; SD=standard deviation.

There was a difference between genders regarding prosocial behavior (Table 7): men exhibited higher prosocial behavior (M = 3.762, SD = .406) than women (M = 3.584, SD = .450). While, women exhibited higher empathy (M = 4.004, SD = .473) than men (M = 3.804, SD = .557).Moreover, men exhibited higher social responsibility (M = 3.863, SD = .402) than women (M = 3.664, SD = .450) Hence, hypothesis 5, 6 and 7 are supported.

Discussion

This work investigated the links between social responsibility, empathy, prosocial behavior, and gender as well as the role of empathy among university students during stressful events such as the COVID-19 pandemic. Our results revealed that there was a relationship between social responsibility, empathy, and prosocial behavior. Additionally, empathy exhibited mediation in the association between social responsibility and prosocial behavior. Furthermore, there was a gender difference in prosocial behavior, empathy and social responsibility. This result is valuable for specialists and researchers because it reveals the considerable role of prosocial behavior and the factors affecting it for preventing and controlling epidemics.

This study demonstrated that the social responsibility of university students was related to their prosocial behavior. Students with collective, religious, and national responsibility were more involved in prosocial activities, which is in accordance with the results of past studies Manzano and Valero(2019); Gutierrez et al., (2011), and Steele et al., (2008). Conversely, individual responsibility was not linked to prosocial behavior. This is because of individual self-interest and

a stronger focus on personal responsibilities, which leads to an ignorance regarding one's responsibilities towards others. Furthermore, our results revealed that empathetic university students act positively in their societies, which is in agreement with the results of Van der Graaff et al., (2018), Yoo et al., (2013), and Morelli et al., 2014). Based on the empathy and altruism hypothesis, if one is empathetic towards others who are going through crises, this individual feels their distress, realizes the need to change their situation, and is thus motivated to help them and increase their level of well-being. This signifies that empathy is an essential component of prosocial behavior. Additionally, some researchers such as Wang and Todd (2021) have indicated that empathy towards others contributes to relieving one's own distress. Regardless of the motivation, empathy is a major driver of prosocial behavior. Hence, it is important to stimulate empathy, as empathy greatly contributes to the development of prosocial behavior in university students.

Moreover, our findings revealed that empathy partially mediated social responsibility and prosocial behavior. In university students, social responsibility can increase empathy towards communities affected by COVID pandemic, and this empathy increases participation in prosocial activities such as helping and donating. The mediating model of empathy revealed that social responsibility could predict empathy, which is consistent with the results of Cehajic et al., (2009), Mattila and Hanks (2012), and Silke et al.,(2021). During the pandemic, university students experienced a high sense of social responsibility and thus empathy towards others. The mediating model also revealed that empathy predicts prosocial behavior, which is in agreement with previous studies Silke et al.,(2021), Roberts and Strayer (1996). Otherwise, Zheng et al., (2023)Schoofs et al., (2019) have reported no significant role of empathy. In fact, individuals who feel responsibility spend more time with community members and thus recognize their thoughts, feelings, and pains. As such, they empathize with community members, which leads to a desire to help. Furthermore, social and health conditions, such as the pandemic, have an important effect on human behavior [8]. In relation to the pandemic, medical students, paramedics, and doctors have great responsibilities and represent positive models that help raise the positive behavior of university students [43]. Enhancing the prosocial behavior of university students greatly contributes to alleviating the negative influence of global crises and raising the level of their mental health. Our results reveal that empathy partially mediated the influence of social responsibility on prosocial behavior. This partial mediation suggests that also other variables are involved, e.g., gratitude and social intelligence, and warrant further investigation in future research [44]; [45].

Furthermore, the results of the current study showed that men outperform women in prosocial behavior. This result was consistent with the work of McMcMahon et al., (2006; however, most previous studies such as work of Charbonneau and Nicol (2002), and Abdullahi and Kumar(2016) have found that women exhibit more prosocial behavior than men. A possible explanation is that help during the COVID-19 pandemic required physical effort, whether engaging in helping patients or exposing oneself to risk and leaving the house to help others. To protect others, e.g., from viral infection, women conform more with public health measures than men, which may have limited their prosocial behavior during the COVID-19 pandemic [32]. Moreover, the study found that women exhibited higher levels of empathy compared to men. This result aligns with the findings

of the majority of previous studies such as Rueckert and Naybar (2008) and Rueckert et al., (2011), although Clarke et al., (2016) reported no significant gender differences in empathy. With regard to social responsibility, the findings indicated that men demonstrated greater social responsibility than women. This result is consistent with the work of Rosati et al., (2018) and Bhaduri& Brookshire(2015); however, a substantial body of research such as study of Reig- Aleixandre et al., (2023) and Cannney & Bielefedt (2015) have shown that women also display strong and meaningful forms of social responsibility. A possible explanation is that the differences between men and women are neither essential nor fixed, and social responsibility is largely shaped by cultural context and socially assigned roles. According to Social Role Theory, individuals behave in ways that align with the roles expected of them. In Saudi culture, men are often expected to serve as the primary protectors, decision-makers, and leaders during crises. These expectations lead men to display more visible forms of social responsibility such as volunteering, fieldwork, and crisis management—as observed during the COVID-19 pandemic. In contrast, women tend to exercise social responsibility within the family and community in less visible yet equally significant ways.

According to the results of this study, universities should invest in and increase prosocial behavior by engaging students, especially women, in charitable social activities dedicated to those affected. Furthermore, universities should develop students' prosocial behavior by teaching subjects that focus on social responsibility and empathy.

Study Recommendations

Research on prosocial behavior and the effects of factors such as social responsibility and empathy on university students is relatively limited. Thus, various aspects that influence prosocial behavior, such as altruism and personal values, should be explored in future studies. This study used a descriptive design to identify links between prosocial behavior, social responsibility, and empathy in the absence of information about their causal relationships. It is significant that use experimental design in future studies that revealed important information about the causes and effects of relationships between these three items, indicating that it has the potential to facilitate further observation and manipulation of the effects of social responsibility and empathy on prosocial behavior and understanding on how these factors influence prosocial behavior. In the case that another pandemic should arise, future work should study prosocial behavior during that pandemic, as this would enable comparative studies to be conducted.

References

[1] A. Kecojevic, C. H. Basch, M. Sullivan, and N. K. Davi, "The impact of the COVID-19 epidemic on mental health of undergraduate students in New Jersey, cross-sectional study," PLoS One, vol. 15, no. 9, p. e0239696, 2020, doi: 10.1371/journal.pone.0239696.

[2] S. Čehajić, R. Brown, and R. González, "What do I care? Perceived ingroup responsibility and dehumanization as predictors of empathy felt for the victim group," Group Process. Intergroup Relat., vol. 12, no. 6, pp. 715–729, 2009, doi: 10.1177/1368430209347727.

[3] B. K. Dhar, F. K. Ayittey, and S. M. Sarkar, "Impact of COVID-19 on Psychology among the University Students," Global Challenges, vol. 4, no. 11, p. 2000038, 2020, doi: 10.1002/gch2.202000038.

[4] S. Xue, M. R. Kaufman, X. Zhang, S. Xia, C. Niu, R. Zhou, and W. Xu, "Resilience and Prosocial Behavior Among Chinese University Students During COVID-19 Mitigation: Testing Mediation and Moderation Models of Social Support," Psychol. Res. Behav. Manag., vol. 15, pp. 1531–1543, 2022, doi: 10.2147/PRBM.S364356.

[5] L. M. Padilla-Walker, J. Van der Graaff, K. Workman, G. Carlo, S. Branje, A. Carrizales, ... and R. Žukauskienė, "Emerging adults' cultural values, prosocial behaviors, and mental health in 14 countries during the COVID-19 pandemic," Int. J. Behav. Dev., 2022, doi: 10.1177/01650254221084098.

[6] C. Helion, D. V. Smith, and J. Jarcho, "When thinking you are better leads to feeling worse: Self-other asymmetries in prosocial behavior and increased anxiety during the Covid-19 pandemic," medRxiv, 2021, doi: 10.1101/2021.02.26.21252547.

[7] M. Borcoman and D. Sorea, "Final Year Undergraduate Students' Representation of the COVID-19 Pandemic and the Lockdown: Adaptability and Responsibility," Sustainability, vol. 14, no. 3, p. 1194, 2022, doi: 10.3390/su14031194.

[8] Y. Jiang, Y. Yao, X. Zhu, and S. Wang, "The Influence of College Students' Empathy on Prosocial Behavior in the COVID-19 Pandemic: The Mediating Role of Social Responsibility," Front. Psychiatry, vol. 12, 2021, doi: 10.3389/fpsyt.2021.782246.

[9] D. Manzano-Sánchez and A. Valero-Valenzuela, "Implementation of a model-based programme to promote personal and social responsibility and its effects on motivation, prosocial behaviours, violence and classroom climate in primary and secondary education," Int. J. Environ. Res. Public Health, vol. 16, no. 21, p. 4259, 2019, doi: 10.3390/ijerph16214259.

[10] J. García-García, D. Manzano-Sánchez, N. Belando-Pedreño, and A. Valero-Valenzuela, "Personal and social responsibility programme effects, prosocial behaviours, and physical activity levels in adolescents and their families," Int. J. Environ. Res. Public Health, vol. 17, no. 9, p. 3184, 2020, doi: 10.3390/ijerph17093184.

[11] P. Desrumaux, T. Machado, N. Przygodzki-Lionet, and M. Lourel, "Workplace bullying and victims' prosocial or antisocial behaviors: What are the effects on equity, responsibility judgments, and help giving?," J. Hum. Behav. Soc. Environ., vol. 25, no. 6, pp. 509–521, 2015, doi: 10.1080/10911359.2014.988318.

[12] N. Alfirević, V. Potočan, and Z. Nedelko, "Students' values, professional socialization and the mental gap of corporate social responsibility perceptions," PLoS One, vol. 16, p. 0261653, 2021, doi: 10.1371/journal.pone.0261653.

[13] D. M. Hellmann, A. R. Dorrough, and A. Glöckner, "Prosocial behavior during the COVID-19 pandemic in Germany. The role of responsibility and vulnerability," Heliyon, vol. 7, no. 9, p. e08041, 2021, doi: 10.1016/j.heliyon.2021.e08041.

[14] C. Compare, G. Prati, A. Guarino, F. Gatti, F. Procentese, A. Fedi, ... and C. Albanesi, "Predictors of prosocial behavior during the COVID-19 national lockdown in Italy: Testing the role of psychological sense of community and other community assets," Community Psychol. Glob. Perspect., vol. 7, no. 2, pp. 22–38, 2021, doi: 10.1285/i24212113v7i2p22.

[15] Z. Yue and J. Z. Yang, "Compassionate goals, prosocial emotions, and prosocial behaviours during the COVID-19 pandemic," J. Community Appl. Soc. Psychol., vol. 32, no. 3, pp. 476–489, 2022, doi: 10.1002/casp.2507.

[16] N. R. Branscombe and B. Doosje, Collective guilt: International perspectives. New York: Cambridge Univ. Press, 2004.

[17] A. Bandura, "Moral disengagement in the perpetration of inhumanities," Pers. Soc. Psychol. Rev., vol. 3, pp. 193–209, 1999, doi: 10.1207/s15327957pspr0303_3.

[18] R. A. Holmgren, N. Eisenberg, and R. A. Fabes, "The relations of children's situational empathy-related emotions to dispositional prosocial behaviour," Int. J. Behav. Dev., vol. 22, no. 1, pp. 169–193, 1998, doi: 10.1080/016502598384568.

[19] S. Greener and N. R. Crick, "Normative beliefs about prosocial behavior in middle childhood: What does it mean to be nice?," Soc. Dev., vol. 8, no. 3, pp. 349–363, 1999, doi: 10.1111/1467-9507.00100.

[20] S. Prot, D. A. Gentile, C. A. Anderson, K. Suzuki, E. Swing, K. M. Lim, ... and B. C. P. Lam, "Long-term relations among prosocial-media use, empathy, and prosocial behavior," Psychol. Sci., vol. 25, no. 2, pp. 358–368, 2014, doi: 10.1177/0956797613503854.

[21] M. L. Hoffman, *Empathy and Prosocial Behavior*, in *Handbook of Emotions*, 3rd ed., pp. 440–455, 2008.

[22] N. Eisenberg and R. A. Fabes, "Empathy: Conceptualization, measurement, and relation to prosocial behavior," *Motivation and Emotion*, vol. 14, no. 2, pp. 131–149, 1990, doi: 10.1007/BF00991640.

[23] N. Eisenberg, N. D. Eggum, and L. Di Giunta, "Empathy-related responding: Associations with prosocial behavior, aggression, and intergroup relations," *Social Issues and Policy Review*, vol. 4, no. 1, pp. 143–180, 2010, doi: 10.1111/j.1751-2409.2010.01020.x.

[24] M. P. Espinosa and J. Kovářík, "Prosocial behavior and gender," *Frontiers in Behavioral Neuroscience*, vol. 9, p. 88, 2015.

[25] D. Charbonneau and A. A. Nicol, "Emotional intelligence and prosocial behaviors in adolescents," *Psychological Reports*, vol. 90, no. 2, pp. 361–370, 2002.

[26] I. A. Abdullahi and P. Kumar, "Gender differences in prosocial behaviour," *The International Journal of Indian Psychology*, vol. 3, no. 4, pp. 171–175, 2016, doi: 10.25215/0304.017.

[27] A. Soutschek et al., "The dopaminergic reward system underpins gender differences in social preferences," *Nature Human Behaviour*, vol. 1, no. 11, pp. 819–827, 2017, doi: 10.1038/s41562-017-0226-y.

[28] S. D. McMahon, J. Wernsman, and A. L. Parnes, "Understanding prosocial behavior: The impact of empathy and gender among African American adolescents," *Journal of Adolescent Health*, vol. 39, no. 1, pp. 135–137, 2006, doi: 10.1016/j.jadohealth.2005.10.008.

[29] S. K. Fahjan, *Professional compatibility and social responsibility and their relationship to the ego flexibility*, M.S. thesis, Islamic University, Palestine, 2010.

[30] R. N. Spreng, M. C. McKinnon, R. A. Mar, and B. Levine, "The Toronto Empathy Questionnaire: Scale development and initial validation of a factor-analytic solution to multiple empathy measures," *Journal of Personality Assessment*, vol. 91, no. 1, pp. 62–71, 2009, doi: 10.1080/00223890802484381.

33] M. Gutiérrez Sanmartín, A. Escartí Carbonell, and C. Pascual Baños, "Relationships among empathy, prosocial behavior, aggressiveness, self-efficacy and pupils' personal and social responsibility," *Psicothema*, vol. 23, no. 1, pp. 13–19, 2011

[32] M. Carreras, S. Vera, and G. Visconti, "Who does the caring? Gender disparities in COVID-19 attitudes and behaviors," *Politics & Gender*, vol. 19, no. 1, pp. 5–33, 2023.

[33] G. V. Caprara, P. Steca, A. Zelli, and C. Capanna, "A new scale for measuring adults' prosocialness," *European Journal of Psychological Assessment*, vol. 21, no. 2, pp. 77–89, 2005, doi: 10.1027/1015-5759.21.2.77.

[34] W. R. Steele et al., "The role of altruistic behavior, empathetic concern, and social responsibility motivation in blood donation behavior," *Transfusion*, vol. 48, no. 1, pp. 43–54, 2008, doi: 10.1111/j.1537-2995.2007.01481.x.

[35] J. Van der Graaff, G. Carlo, E. Crocetti, H. M. Koot, and S. Branje, "Prosocial behavior in adolescence: Gender differences in development and links with empathy," *Journal of Youth and Adolescence*, vol. 47, no. 5, pp. 1086–1099, 2018, doi: 10.1007/s10964-017-0786-1.

[36] H. Yoo, X. Feng, and R. D. Day, "Adolescents' empathy and prosocial behavior in the family context: A longitudinal study," *Journal of Youth and Adolescence*, vol. 42, no. 12, pp. 1858–1872, 2013, doi: 10.1007/s10964-012-9900-6.

[37] S. A. Morelli, L. T. Rameson, and M. D. Lieberman, "The neural components of empathy: predicting daily prosocial behavior," *Social Cognitive and Affective Neuroscience*, vol. 9, no. 1, pp. 39–47, 2014, doi: 10.1093/scan/nss088.

[38] W. Litvack-Miller, D. McDougall, and D. M. Romney, "The structure of empathy during middle childhood and its relationship to prosocial behavior," *Genetic, Social, and General Psychology Monographs*, vol. 123, no. 3, pp. 303–325, 1997.

[39] Y. A. Wang and A. R. Todd, "Evaluations of empathizers depend on the target of empathy," *Journal of Personality and Social Psychology*, vol. 121, no. 5, pp. 1005–1028, 2021, doi: 10.1037/pspi0000341.

[40] A. S. Mattila and L. Hanks, "Antecedents to participation in corporate social responsibility programs," *Journal of Service Management*, vol. 23, no. 5, pp. 664–676, 2012, doi: 10.1108/09564231211269829.

[41] C. Silke, B. Brady, C. Boylan, and P. Dolan, "Empathy, social responsibility, and civic behavior among Irish adolescents: A socio-contextual approach," *The Journal of Early Adolescence*, vol. 41, no. 7, pp. 996–1019, 2021, doi: 10.1177/0272431620977658.

[42] W. Roberts and J. Strayer, "Empathy, emotional expressiveness, and prosocial behavior," *Child Development*, vol. 67, no. 2, pp. 449–470, 1996, doi: 10.1111/j.1467-8624.1996.tb01745.x.

[43] I. Secosan, D. Virga, Z. P. Crainiceanu, and T. Bratu, "The mediating role of insomnia and exhaustion in the relationship between secondary traumatic stress and mental health complaints among frontline medical staff during the COVID-19 pandemic," *Behavioral Sciences*, vol. 10, no. 11, p. 164, 2020, doi: 10.3390/bs10110164.

[44] X. Zhao, J. G. Lynch Jr, and Q. Chen, "Reconsidering Baron and Kenny: myths and truths about mediation analysis," *Journal of Consumer Research*, vol. 37, pp. 197–206, 2010, doi: 10.1086/651257.

[45] K. J. Preacher and A. F. Hayes, "SPSS and SAS procedures for estimating indirect effects in simple mediation models," *Behavior Research Methods, Instruments, & Computers*, vol. 36, pp. 717–731, 2004, doi: 10.3758/BF03206553.

[46] N. Reig-Aleixandre, J. M. García-Ramos, and C. De la Calle-Maldonado, "Gender differences in professional social responsibility: Are women more responsible at work than men?" Frontiers in Psychology, vol. 14, Art. no. 1049389, 2023.

[48] N. E. Canney and A. R. Bielefeldt, "Gender differences in the social responsibility attitudes of engineering students and how they change over time," Journal of Women and Minorities in Science and Engineering, vol. 21, no. 3, 2015.

[49] F. Rosati, R. Costa, A. Calabrese, and E. R. G. Pedersen, "Employee attitudes towards corporate social responsibility: A study on gender, age and educational level differences," Corporate Social Responsibility and Environmental Management, vol. 25, no. 6, pp. 1306–1319, 2018.

[50] G. Bhaduri and J. Ha-Brookshire, "Gender differences in information processing and transparency: Cases of apparel brands' social responsibility claims," Journal of Product & Brand Management, vol. 24, no. 5, pp. 504–517, 2015.

[51] L. Rueckert, B. Branch, and T. Doan, "Are gender differences in empathy due to differences in emotional reactivity?" Psychology, vol. 2, no. 6, pp. 574–578, 2011.

[52] L. Rueckert and N. Naybar, "Gender differences in empathy: The role of the right hemisphere," Brain and Cognition, vol. 67, no. 2, pp. 162–167, 2008.

[53] X. Deng, S. Chen, X. Li, C. Tan, W. Li, C. Zhong, et al., "Gender differences in empathy, emotional intelligence and problem-solving ability among nursing students: A cross-sectional study," Nurse Education Today, vol. 120, Art. no. 105649, 2023.

[54] M. J. Clarke, A. D. Marks, and A. D. Lykins, "Bridging the gap: The effect of gender normativity on differences in empathy and emotional intelligence," Journal of Gender Studies, vol. 25, no. 5, pp. 522–539, 2016.

[55] S. A. Osman, "The Social Responsibility Scale 2010," Journal of the Faculty of Education, vol. 21, no. 122, pp. 397–418, 2010.