An exploratory analysis examining the relationship between altruistic behaviours and self-reported anxiety among an Irish college student population during the Covid-19 pandemic

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Abstract

Aims: The present study aimed to provide an insight into the relationship between altruistic behaviour and self-reported anxiety among an Irish student population during the Covid-19 pandemic. This study examined whether altruistic behaviours correlate with self-reported anxiety and if altruistic behaviours influence self-reported anxiety among Irish college students in the context of the Covid-19 pandemic. This study also investigated whether there was a difference in altruistic behaviours among males and females. **Methods:** Participants (*n*=106) were provided with a questionnaire through social media which included an adapted version of The Self-Report Altruistic Personality Scale and The General Anxiety Disorder Questionnaire (GAD-7). **Results:** Results showed that higher levels of altruistic behaviours are associated with higher levels of self-reported anxiety. Altruistic behaviours explained 4.2% of variance in self-reported anxiety. Altruistic behaviours were found to uniquely influence self-reported anxiety levels to a statistically significant level. There was no significant difference among males and females in altruistic behaviours. **Conclusion:** Results show that higher altruistic behaviours correlate with higher self-reported anxiety levels which challenges previous research, possible reasons for the difference in results may be due to Covid-19 restrictions and the sample used. Findings identify how individuals differ in anxiety levels providing an important implication of therapy being tailored to meet individual's needs.

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Literature Review

This research study will involve investigating whether altruistic behaviours predict self-reported anxiety levels and whether altruistic behaviours correlate with self-reported anxiety levels among Irish college students during the COVID-19 pandemic. Discussed within this literature review will be the prevalence of anxiety among young adults along with young college students during the COVID-19 pandemic, altruism and the correlation between anxiety and altruism among this age group identified among numerous studies (Kornilaki, 2021). Approximately one half of the diseases prevalent among young adults are mental disorders (World Health Organization, 2002). Literature has provided evidence which outlines that anxiety disorders are one of the most common mental health conditions among young people (Spence, 2017). Research has shown that mental health conditions such as anxiety have drastically increased among young college students during the COVID-19 pandemic (Hawes, et al., 2021). A growing body of literature concerning mental health states that mental health problems such as anxiety are particularly common among young adults in higher education, in comparison to other age groups (Eisenberg, et al., 2007). Anxiety is also majorly prevalent in children and adolescents, which if left untreated can lead to individuals becoming at risk of anxiety during early adulthood (Barker, 2019). Studies have also emphasized that anxiety can have devastating effects on individuals if not treated or managed correctly.

Influence of Anxiety on Altruism

Anxiety has also been identified by literature as a determining factor for altruistic tendencies among individuals (Aronson, et al., 2021). Altruism is defined by an act that benefits others rather than benefiting yourself, it is seen as completely selfless in nature (Hogg & Vaughan, 2011). Research regarding helping behaviour and altruism was triggered by a famous case study of a young woman named Kitty Genovese who was murdered in 1964.

Social psychologists were interested in the reasons as to why nobody helped her when they could hear she was in obvious danger. This led to the theories and research developed about altruism and attempting to understand what makes people perform altruistic acts. Scales have been developed such as the Adapted Self-Report Altruism Scale which is administered to determine if an individual is deemed altruistic or not, the scale includes altruistic behaviours and involves individuals stating how often they have exhibited the altruistic behaviours (Dare & Jetten, 2021).

Research concerning anxiety and altruism have provided evidence to support the claim that anxiety is an important variable dictating whether individuals will perform altruistic behaviours. (Aronson, et al., 2021). There are several types of anxiety, one of which is known as general anxiety disorder (GAD) referred to as "Basic" anxiety as it is a combination of other anxiety disorders (Brown, et al., 2001). The criteria for GAD include items such as, excessive worrying and anxiety about a range of things over a certain period, having trouble controlling their worry and experiencing bodily symptoms due to the anxiety. The GAD-7 is the scale used to measure an individual's anxiety and dictate if the person is suffering with general anxiety disorder, it has been beneficial when conducted among a young population (Miguel, et al., 2011). Research interested in children and the influence anxiety has on them, has provided insight into the consequences of anxiety on children's life's if left untreated or unmanaged (Spence, 2017).

Studies have shown that children who experience higher levels of anxiety showed to perform less altruistic behaviours (Milan, et al., 2006). This may be explained due to the self-preoccupation individuals with anxiety face, they are too consumed in their own anxieties they don't possess the energy to accustom to other's needs (Kwok, et al., 2017). From these results we can expect that participants in this research study who score higher on anxiety will be less altruistic. From the following evidence regarding anxiety, it can be expected that if individuals lower their anxiety levels, they will become more altruistic.

This has been demonstrated in a study about meditation and altruism, which provided evidence for this as, individuals that meditated performed more altruistic behaviours due to the meditation reducing their anxieties (Iwamato, et al., 2020). The participants that engaged in meditation were also shown to donate more to charities in comparison to their control group. The Self-Protective Altruism Model states that anxieties are more difficult to reduce when the prosocial act is a reminder of how vulnerable and fragile the human body is (Hirschberger, 2013). When the altruistic behaviour is a reminder of how vulnerable their own body is, it will drastically decrease the chances of individuals performing the altruistic behaviour. This idea links with a type of anxiety known as "death anxiety", involving a construct of negative psychological reactions caused by concerns linked to death such as suffering or the afterlife (Wu, et al., 2012).

Impact of Altruistic Behaviours on Anxiety levels

Research involving organ donations and what variables indicate whether an individual will engage in organ donation has shown that individuals who experience elevated levels of "death anxiety" are less likely to think about organ donating or looking into donating their organs. Results of the study were that individuals with death anxiety were less likely to donate their organs as their anxiety inhibited them from thinking about it as it reminded them that their body is fragile and that they may themselves need a donation of an organ at one stage. However, previous studies have provided evidence which contradict the previous claim as they provided evidence that supports the theory that performing altruistic behaviours reduces anxiety as the attention is placed outwards and individuals are less likely to be self-preoccupied (Milan, et al., 2006). Literature interested in the relationship between altruistic behaviours and anxiety states that promoting altruistic behaviours for individuals who are suffering from anxiety can help reduce their anxiety (Fujiwara, 2007).

This explains the wide range of literature producing results which state the association between individuals experiencing acute anxiety and their engagement in altruism, as a way of reducing their anxiety (Vieria, et al., 2020). This is of particular interest for this research study as well as in the context of the COVID-19 pandemic as previous studies have identified an increase in anxiety among young students due to the pandemic and identifying what could reduce their anxieties is of extreme importance in improving their mental health and reducing their anxieties related to the pandemic (Hawes, et al., 2021).

Impact of Covid-19 on Altruism and its Impact on Anxiety

Numerous studies have been carried out following the beginning of the global pandemic that are interested in the correlation between anxiety and altruism and whether the pandemic has had a significant impact on altruism among the general population (Kornilaki, 2021). The period of quarantine during the pandemic was investigated to understand what impact it had on individuals' overall wellbeing and their altruistic tendencies during this stressful time. Although individuals reported experiencing higher levels of depression and anxiety during quarantine, the protective factor identified among individuals was altruism. Those who performed activities that were altruistic in nature displayed less psychological distress such as a decrease in anxiety and depression, which supports the claim that being altruistic improves overall wellbeing and mental health (Mikulincer & Shaver, 2005).

Literature states that it may be feasible to assume that the altruistic individuals felt a responsibility for containing the disease and making sure it was not spreading rapidly which made quarantine more bearable for them in comparison to the individuals who were not altruistic, as they felt a sense of purpose and their fear of contracting the disease was not a priority to them as performing acts of altruism was (Kornilaki, 2021). Due to the isolation that the pandemic and quarantine brought supportive initiatives became more prevalent, in response an interest in the effect of online community support initiatives on altruism had emerged (Elphick, et al., 2020).

Individuals who engaged in the initiatives to offer support reported feeling calmer afterwards, further supporting the claim that altruistic acts can have a positive impact on reducing symptoms of anxiety.

Although these results are promising, they are only in the context of an online activity which would not put the individuals at any risk of contracting Covid-19 and therefore their tendency to engage in altruism would not be influenced by the fear of contracting the virus. These results may have differed if the individuals were in a situation that would put them at risk of contracting Covid-19, it may have caused them to become more anxious because of the altruistic acts. A recent study investigating altruism and Covid-19 has produced results which contradict the claim that altruistic behaviours reduce anxiety (Feng, et al., 2020). Results have shown that being altruistic did not reduce individual's anxiety but instead made it worse due to the fear of contracting Covid-19. The contrast in the findings of these studies is of interest to the following research as, this study will investigate whether altruistic behaviours will predict self-reported anxiety among an Irish college student population during the Covid-19 pandemic.

The current study

This research study is interested in a young college population as literature has stated that young people are an at-risk group for experiencing anxiety (Hawes, et al., 2021). Anxiety is most common among 18–25-year old's when compared to other age groups (Goodwin, et al., 2020). Young adulthood is the key period for the onset of mental health disorders including anxiety. Literature proposes that this increase in anxiety among this age cohort could be due to them being confronted with more anxiety-inducing world events such as the COVID-19 pandemic & 9/11 in comparison to previous generations and in addition to that the negative side effects of the 24/7 media coverage of the events. Studies have shown that young adults who were studying became more influenced by the mental health consequences of the COVID-19 pandemic (Hawes, et al., 2021).

Literature has provided evidence which shows that the consequences of the pandemic increased traumatic stress among young adults which lead to them experiencing mental health problems such as anxiety, particularly those who were studying (Karatzias, et al., 2020). This increase in anxiety was partially due to the transition to online learning which led to being stuck at home and feeling isolated along with a limited social life due to lockdowns (Elmer, et al., 2020). Although anxiety was heightened during the pandemic, research conducted during the pandemic showed that individuals possessing higher levels of altruism had more positive emotions along with fewer negative emotions and lower anxiety (Lu, et al., 2019).

Research acknowledges that young college student's baseline anxiety is higher when compared to other age groups, so for this reason it is of interest to investigate whether altruistic behaviors predicts self-reported anxiety among Irish college students during the COVID-19 pandemic as the pandemic placed additional stress on an already stressed population which caused the majority of students to experience moderate-severe anxiety during the first four months of the COVID-19 pandemic (Fruhwirth, et al., 2021). Anxiety has been identified as a common mental health condition among young college adults so therefore it is of importance to literature to investigate whether performing altruistic behaviors could be a protective factor for college students experiencing anxiety during the COVID-19 pandemic which added additional anxiety to this age cohort (Hawes, et al., 2021). Additionally, there is a gap in the literature regarding the effect of altruistic behaviors on self-reported anxiety levels among an Irish college population, so it is of interest to investigate this, as it may provide evidence of a way for college students to manage their anxieties during this difficult period.

Therefore, the main aims of the current study are to identify whether altruistic behaviours correlate with self-reported anxiety and to examine if altruistic behaviours influence self-reported anxiety amongst Irish college students in the context of the Covid-19 pandemic, through explanatory analysis. This study also aims to examine if there is a difference present among males and females in altruistic behaviours. These aims produce the following research questions and hypothesis:

Research question 1: Do altruistic behaviours correlate with self-reported anxiety?

Hypothesis for research question 1: A correlation will be present between altruistic behaviours and self-reported anxiety.

Research question 2: Do altruistic behaviours influence self-reported anxiety?

Hypothesis for research question 2: Altruistic behaviours will influence levels of self-reported anxiety.

Research question 3: Is there a difference in mean altruistic behaviour between males and females? Hypothesis for research question 3: There is a difference in mean altruistic behaviour between males and females

Methods

Participants

A non-probability convenient sampling method was adopted to obtain participants due to lack of time and funding, between the 16th and 23rd of November 2021 a link to the online google survey was posted on social media platforms and sent to college students via social media. Additionally, a snowball sampling method was employed to recruit data from the inclusion criteria. The students were asked to fill out an online google survey and send it onto college students via social media, once completed to obtain more participants meeting the inclusion criteria of the study. The inclusion criteria of this research study was young college students between 18 and 25 years of age. 142 participants took part in the research study, 36 did not meet the inclusion criteria so therefore were not included in the research study, while 106 were used in this study as they met the inclusion criteria of (1) being between 18 and 25 years of age and (2) being a college student at the time of the study. 69 participants were women (65.1%), 36 were men (34%) and 1 identified as other (0.9%). Ages ranged from 18 to 25 years (M= 21, SD= 1.70).

Materials

The online questionnaire administered to participants was divided into different sections.

(1) Participants were asked demographic questions such as age, gender and whether they were a college student and between the ages of 18 and 25, to identify if they met the inclusion criteria.

(2) Altruism among participants was measured using the Adapted Self-Report Altruistic Personality Scale, (see Appendix I) (Rushton, et al., 1981). The reliability of the scale is r (78) = + 0.51 and the validity being r (86) = 0.35 and r (86) = 0.21. The scale contains 14 items designed to assess how often individuals engage in altruistic behaviors. The sort of items within the questionnaire includes, "I would give money to a charity" and "I would give directions to a stranger". The participants scored the items within the scale on a 5-point Likert scale ranging from 0 (never) to 4 (very often), indicating how often they would engage in the altruistic behaviors within the scale. Scoring of the scale included the sum of all the items together with higher scores indicating higher levels of altruism. The Cronbach's Alpha of the Self-Report Altruistic Personality Scale is .83 which indicates that the scale possesses good internal consistency.

(3) Anxiety among the participants was measured using the General Anxiety Disorder Questionnaire 7 (GAD-7), (see Appendix II), (Lowe, et al., 2008). A study finding interested in the reliability and validity of the GAD-7 produced results which indicated that the GAD-7 is a valid and reliable measure of anxiety (Omani-Samani, et al., 2018).

The GAD-7 is a 7-item self-report questionnaire including items designed to investigate how often individuals have been affected by feeling nervous and anxious, not being able to stop their worries, becoming annoyed easily, along with their ability to manage their anxieties and worries. Participants scored each item within the scale on how often they have experienced them in the last two weeks on a 4-point Likert scale ranging from 0 (not at all) to 3 (nearly every day). The sum of each item was calculated which would obtain a score ranging from 0 to 21. A score of 0-4 was identified as minimal anxiety, 5-9 is considered as mild anxiety, a score ranging between 10-14 was seen as moderate anxiety and 15-21 was identified as severe anxiety. Cronbach's Alpha of the GAD-7 is .89 which indicates that the GAD-7 has good internal consistency.

Design and Analyses

A quantitative approach known as a cross-sectional design in the form of surveys was adopted in this research study as this research study is interested in the relationship between anxiety and altruistic behaviour at one point in time. This research included a within-participants design as it was interested in measuring self-reported anxiety and altruistic behaviours among all participants within the study. Cross-Sectional design measures variables as they occur naturally, it does not involve the manipulation of the variables. The predictor variable within this study is altruistic behaviour while the criterion variable is self-reported anxiety.

This research involved measuring the relationship between the variable's altruistic behaviour and self-reported anxiety as they occur, as there will be no manipulation of the variables. Two t-tests were conducted to investigate altruistic behaviours and self-reported anxiety between males and females. Three correlation analyses were administered to investigate the direction of the relationship between anxiety and altruism and to examine whether altruistic behaviour and self-reported anxiety correlate with age. Lastly, a standard multiple regression analysis was conducted to examine if altruistic behaviours (PV (predictor variable) predict self-reported anxiety (CV (Criterion Variable). For each of the statistical tests carried out a p value of less than 0.05 would be considered statistically significant. A Cross-Sectional design used in this study does not allow for conclusions about causality to be made, meaning interpretations of this nature cannot be made from results produced by these analyses.

Procedure

Before commencing with the data collection, ethical approval from the ethics committee in NCI had to be obtained. The proposal of the research study was submitted to the ethics committee and ethics approval for the research was granted on the 4th of November 2021. Once the research study was approved by the ethics board, the process of data collection began. An online questionnaire expedited the data collection. A post link to the questionnaires from Google Forms was posted on social media platforms such as Facebook, Instagram, and WhatsApp, which gave individuals access to the questionnaires.

The link to the questionnaires was also sent to college students through message via WhatsApp, from other participants who were college students. Once participants clicked on the link, they were provided with an information sheet informing them of their participation in the study, (see Appendix III). A consent form was provided to participants after reading the information sheet, which they were asked to read and tick a box online via Google Forms to indicate their participation, (see Appendix IV). Once participants consented to participating in the research study, they were asked demographic questions such as age, gender and asked to indicate if they met the inclusion criteria of the study. Once participants answered the demographic questions, they were brought to the General Anxiety Disorder Questionnaire 7 (GAD-7), (see Appendix II), once they answered all items within the GAD-7 they were provided with the Adapted Self-Report Altruistic Personality Scale (see Appendix I). After completing both questionnaires, participants were provided with a debriefing sheet (see Appendix V), containing support services they could avail of if they were affected by any of the topics within the questionnaires along with contact information for the researcher and appointed supervisor for any concerns or queries about the research study.

Ethical Implications

The participants were made aware that their participation in the study was entirely voluntary through the information sheet and informed consent form, provided to them before commencing with the questionnaires. Through these forms it was highlighted to participants that they could withdraw from the study at any time without being penalized.

The informed consent of the participants was obtained through them ticking a box on Google Forms after reading the information within the informed consent form, which would indicate to the researcher that they have consented to participating in the study. The confidentiality and anonymity of the data collected from participants was discussed in the information sheet, which stated that the questionnaires are anonymous, and it was not possible to identify participants based on their responses. It was also outlined to participants that their data would be stored on a password protected file that only the researcher and supervisor have access to. They were also informed of NCI's data retention policy which involves their data being retained for a period of 5 years. Participants were made aware that once they submitted their data it could not be removed as their data is anonymized.

Potential risks that participants may encounter while participating in the study were described in the informed consent form. Participants were made aware that they may experience psychological discomfort and emotional distress due to the nature of the questionnaires in the study, through the informed consent form. After completing the questionnaires, participants were provided with a debriefing sheet including support services they could avail themselves of if they were affected by any of the risks outlined in the informed consent form. Contact information for the researcher and supervisor was made available to participants through the debriefing form, which gave them the opportunity to discuss any concerns or queries they had about the study.

Results

Descriptive Statistics

Analysis was conducted on all continuous variables, to ascertain Mean (M), Median

(MD), Standard Deviation (SD) and the Range scores were obtained, along with the tests for

normality. Preliminary analysis was performed on dataset, which indicated that all continuous

variables followed the assumptions of normality. The total sample of 106 participants consisted

of 69 women (65.1%), 36 men (34%) and 1 identified as other (0.9%). Descriptive statistics for

the categorical variable are presented in Table 2. The mean age of the participants was 21.01

(SD=1.70), ranging between 17-27. The mean anxiety score in our Irish college student sample

was 11.85 [95%CI 10.78, 12.92], ranging from 0 – 21. The mean altruism score in our Irish

college student sample was 23.95[95%CI 22.36, 25.54], ranging from 8-45. Descriptive statistics

for the continuous variables are presented in Table 1.

Table 1

Descriptive Statistics for all continuous variables, N = 106

Variable	*M* [95% CI]	*SD*	Range
Age	21.01 [20.68, 21.34]	1.70	17-27
Altruism	23.95[22.36,25.54]	8.25	8-45
Anxiety	11.85 [10.78, 12.92]	5.54	0-21

Table 2

Descriptive Statistics for categorical variable, N = 106

| Variable	Frequency	Valid %
Gender	106	100%
Women	69	65.1%
Male	36	34.0%
Other	1	0.9%

Inferential Statistics

An independent-samples t-test was conducted to compare the altruism scores for males and females. There was no significant difference in scores for females (M = 23.84, SD = 7.94) and males (M = 23.60, SD = 8.60; t (101) = .14, p = .89, two-tailed). The magnitude of the differences in the means (mean difference = .24, 95% *CI:* -3.13 to 3.61) was very small (eta squared = .0001).

An additional independent-samples t-test was conducted to compare the self-reported anxiety scores for males and females. There was no significant difference in scores for females (M = 12.34, SD = 5.58) and males (M = 11.26, SD = 5.68; t (101) = .93, p = .36, two-tailed). The magnitude of the differences in the means (mean difference = 1.08, 95% *CI:* -1.23 to 3.40) was very small (eta squared = 0.008).

The relationship between altruistic behaviour (as measured by the Adapted Self-Report Altruistic Personality Scale) and age was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of assumptions of normality, linearity and homoscedasticity. There was no significant linear correlation between altruistic behaviours and age within the sample, r = -.12, n = 106, p = .238, indicating that age did not influence altruistic behaviours.

The relationship between self-reported anxiety (as measured by the GAD-7) and age was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of assumptions of normality, linearity and homoscedasticity. There was no significant linear correlation between self-reported anxiety and age within the sample, r = -.14, n = 106, p = .165, identifying that age did not influence self-reported anxiety.

An additional correlational analysis was conducted to investigate the relationship between altruistic behaviour (as measured by the Adapted Self-Report Altruistic Personality Scale) and self-reported anxiety (as measured by the GAD-7) using the Pearson product moment correlation coefficient. Preliminary analyses were performed to ensure no violation of assumptions of normality, linearity and homoscedasticity. There was a significant, weak, positive correlation between altruistic behaviours and self-reported anxiety (r = .21, n = 106, p = .03). This indicated that the two variables share approximately 4% variance. Results indicate that higher levels of altruistic behaviours are associated with higher levels of self-reported anxiety.

Scatter Plot of Anxietyscore by Altruismscore

R^2 Linear = 0.042

$y=8.66+0.14*x$
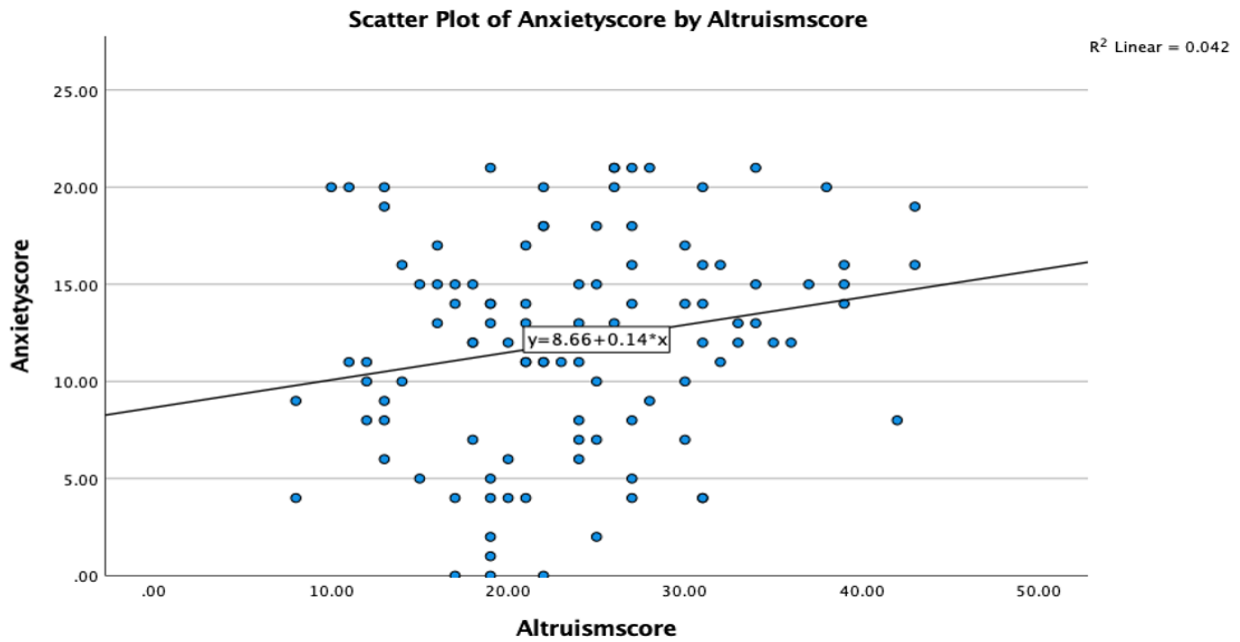
Further analysis was conducted using regression analysis. A Multiple Regression was carried out to investigate whether altruistic behaviours could significantly predict self-reported anxiety. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity and homoscedasticity. The results of the regression indicated that the model explained 4.2% of the variance and that the model was a significant predictor of self-reported anxiety ($F(1, 104) = 4.61$, $p = .03$). Variable entered in the model was found to predict self-reported anxiety to a statistically significant level (See Table 3).

Table 3

Multiple Regression model predicting Self-Reported Anxiety

Variable	R^2	B	SE	B	t	P
Model	.042***					
Altruism		.142	.066	.206	2.148	.034

Note: β = *standardized beta value;* B = *unstandardized beta value;* SE = *Standard errors of B; N*

= 106; *Statistical Significance:* ***p < .05

Discussion

In the current study, the relationship between altruistic behaviours and self-reported anxiety was examined among an Irish college population during the Covid-19 pandemic. The current study attempted to unleash a better understanding of the impact of altruistic behaviours on self-reported anxiety levels of college students within an Irish context during the Covid-19 pandemic

In support of the first hypothesis, results identified that higher levels of altruistic behaviours correlate with higher levels of self-reported anxiety, indicating that individuals who engaged in more altruistic behaviours had higher levels of self-reported anxiety levels. The second hypothesis was also supported; results showed that altruistic behaviours influenced self-reported anxiety levels, altruistic behaviours were found to uniquely predict self-reported anxiety levels. The third hypothesis was challenged, as results showed that there was no difference in mean altruistic behaviours between males and females.

The findings produced from this study support the first hypothesis as they show that higher levels of altruistic behaviours correlate with higher levels of self-reported anxiety levels among Irish college students during the Covid-19 pandemic, which are in line with and contribute support to previous research conducted during the Covid-19 pandemic which has shown that performing altruistic behaviours did not reduce individuals anxiety levels but instead made their anxiety levels increase, caused by a fear of contracting Covid-19 (Feng, et al., 2020).

Similar results were produced in an additional study interested in anxiety and behavioural responses during the Covid-19 pandemic (Buyukkececi, 2020). Results showed that altruistic individuals suffered the most with anxiety during the lockdown period, suggesting that this may have been caused by altruistic individuals not being able to help others due to social distancing and self-isolation regulations in place at the time which led to an increase in anxiety. The high anxiety levels among individuals who engaged in more altruistic behaviours shown in the results of this research study could be explained by this inability of those individuals to be able to help others. As the participants within this research took part in the study between the 16th and 23rd of November 2021, which was a period when strict restrictions were in place in Ireland such as remote college learning, working from home where possible along with advising individuals to adhere to social distancing, which decreased individual's ability to engage in prosocial behaviour (Gov, 2021). Future research during a non-pandemic context is required to determine if the strict Covid-19 measures and regulations in place influenced the relationship found between altruistic behaviours and self-reported anxiety in this study.

The second hypothesis was also supported as results showed that altruistic behaviours influenced self-reported anxiety levels among Irish college students, altruistic behaviours significantly predicted self-reported anxiety levels among participants during the Covid-19 pandemic.

The results produced from this research study are consistent with previous research interested in the impact of altruistic behaviours on anxiety levels which have shown that altruistic behaviours significantly predict anxiety (Elphick, et al., 2020). Although, results produced are also non-consistent with previous research which identified that performing altruistic acts decreased individual's anxiety levels which is the opposite effect found within this research study (Milkulincer & Shaver, 2005) (Fujiwara, 2007). This inconsistency of results when compared to the results of this research study may have been due to the novelty sample of young college students used within this research study which has been identified as a high-risk group for experiencing anxiety when compared to other age groups (Kumaraswamy, 2013). The sample used within this research study was undergraduate students between the ages of 18-25 which research has shown to be a group that is significantly at risk of experiencing anxiety (Hawes, et al., 2021). The Covid-19 pandemic has also shown to have had a significant impact on the mental health of young college students, which may further explain why participants scored considerably high on the anxiety scale regardless of their engagement in altruistic behaviours and other studies found contradicting results (Karatzias, et al., 2020). The higher baseline anxiety among young college students may have been the cause of the results of the research study which showed high anxiety levels among participants in the study (Goodwin, et al., 2020). Future research among alternative populations is required to discover if different results would be found among alternative populations who are not high-risk groups of suffering from anxiety.

The third hypothesis within this research study was challenged, as results showed that there was no difference present in mean altruistic behaviours between males and females which is not consistent with literature concerning gender traits (Kidder, 2002). Literature identifies that female trait's include empathy, being concerned about others, altruism and helping others. While male traits include being competitive, aggressive along with ambitious, these findings do not support the results of this study as they state that females tend to be more altruistic in comparison to males while our results found no difference in mean altruistic behaviours between males and females. Research has also been conducted to help better understand the personality and characteristics of individuals who are altruistic, to predict what aspect of an individual's personality makes them engage in altruistic behaviours (Trishala, 2021). The five-factor model of personality provides insight into personality traits and has helped us to understand the personality of individuals who engage in more altruistic behaviours (Furnham, et al., 2014). Research showed that conscientiousness, which is one of the five personality traits, has a significant relationship with altruistic behaviour (Trishala, 2021). The characteristics of conscientiousness include aspects such as striving for achievement, having high aspiration levels and being persistent (McCrae & Costa, 1999). The significant relationship found between conscientiousness and altruistic behaviours may explain why those who engaged in more altruistic behaviours scored higher on self-reported anxiety within this research study, as research has shown that individuals who engage in more altruistic behaviours are more conscious of themselves and engage in more inward reflection as they have high aspiration levels which could lead to high neuroticism in the form of anxiety among individuals.

Practical Implications

The results of this study showed that Irish college students who engaged in more altruistic behaviours were experiencing higher anxiety levels during the Covid-19 pandemic, one practical implication could be to provide mental health supports for individuals who are engaging in more altruistic behaviours such as volunteering or jobs involving altruistic behaviours as results show they experience more anxiety, and this could provide them with support in reducing their high anxiety levels. Results of this study also contribute to the large body of literature that identifies high anxiety levels present among college students (Kumaraswamy, 2013). This then forms an additional implication of providing easily accessible mental health supports and resources within colleges as results show that college students are at a considerable high risk of suffering from anxiety. The high anxiety levels found among individuals who engaged in more altruistic behaviours identifies that different individuals have different levels of anxiety and therefore have different needs so an implication could be for therapy to be specifically tailored to meet individuals needs.

Strengths and Limitations

This research study involved the use of surveys along with a correlational study which have shown to contain both strengths and limitations (Queiros, et al., 2017). A strength of this study was the high representativeness of the entire population produced by using surveys, meaning that

by using surveys, we were able to highly represent the population of interest, Irish college students. A strength of this research study was the age sample, as findings from previous studies have identified that 18–25-year old's experience the most anxiety in comparison to other age groups (Goodwin, et al., 2020). The sample of college students used in the study was also a strength as research shows that college students are a group within society that experience elevated levels of anxiety (Kumaraswamy, 2013). Therefore, if altruistic behaviours had an impact on self-reported anxiety, it would be discovered through researching college students within the 18-25 age cohort. Surveys are also low in cost and can address a research question in a brief time when compared to other alternative methods of data collection, making them a favorable method of data collection. The strength of a correlational study includes being able to collect information from numerous domains at one point in time and studying the interrelations between the variables (Queiros, et al., 2017). By adopting a correlational study in this study, information about altruistic behaviours and self-reported anxiety was gathered and the interrelations of the variables was studied.

Some limitations of the study included the reliability of the data collected through surveys which is dependent on the quality of answers produced and the structure of the survey, making its dependability of good data collection on quality and structure of the survey a limitation (Hacksaw, 2008). Although the data supply a rich insight into the relationship between altruistic behaviours and self-reported anxiety, this research study also had limitations regarding the method of data collection as it was based solely on self-report measures. This collection method is not ideal as the results produced could have been exaggerated due to numerous biases

such as self-selecting biases, which may have led to participants answers portraying how they were feeling while completing the questionnaires and not necessarily their feelings regarding the variables of interest (Bound, 1991). Perhaps, adopting an experimental research design within controlled laboratories may be a more reliable measure, therefore future research is required which could adopt an experimental design. This study also contained a cross-sectional design including a correlational study which does not provide a conclusive reason for the correlation between two variables and does not allow for conclusions about causality to be made which means we cannot conclude that altruistic behaviours cause anxiety from the results of the study (Hacksaw, 2008). This study was also limited due to it being carried out during the Covid-19 pandemic, therefore our results are only in the context of the pandemic as we haven't carried out the study during a time when there was no pandemic. Another limitation of the research study included the small sample size, as it was smaller than the 300 participants which is the figure that G*Power suggested. Small sample sizes tend to overestimate the magnitude of the association between variables found from results, which could influence interpretation of results.

Conclusion

In conclusion, the results of this research challenge the current understanding of the relationship between engagement in altruistic behaviours and anxiety levels. The current study challenges the results produced from alternative studies attempting to understand the relationship between altruistic behaviours and anxiety levels which have shown that higher altruistic behaviours are correlated with lower anxiety levels.

The Covid-19 pandemic restrictions and strict measures in place at the time of the study as well as the novelty sample of college students used in this research study may explain why results of this study were not consistent with previous research. In relation to the impact of altruistic behaviours on self-reported anxiety levels during the Covid-19 pandemic, the current study provides support to previous research carried out during the Covid-19 pandemic which has shown that higher altruistic behaviours correlated with higher anxiety levels. The current study contributes to previous literature carried out during the Covid-19 pandemic, by examining the relationship between altruistic behaviours and self-reported anxiety levels within an Irish college context during the Covid-19 pandemic. Results of this study provide additional evidence for the elevated levels of anxiety among college students and show that individuals who are more altruistic experience more anxiety which provides an important implication of therapy being specifically tailored for individuals needs due to the difference in anxiety levels among individuals. Future research is needed to examine whether the relationship found between the two variables was influenced by restrictions and strict measures because of the Covid-19 pandemic and whether results would differ if the study were carried out among an alternative population that is not a high-risk group for experiencing anxiety.

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Appendices

Appendix I

Scale Name: Adapted Version of the Self-Report Altruism Scale

Developers: P. C. Rushton (original), Peter Witt and Chris Boleman (adapted version)

Scale:

0=Never
1=Once
2=More than once

3=Often
4=Very often

Instructions: How often would you exhibit the following behaviors?

Items:

1. I would give directions to someone I did not know.
2. I would make changes for someone I did not know.
3. I would give money to a charity.
4. I would donate clothes or goods to a charity.
5. I would help carry belongings of someone I did not know.
6. I would delay an elevator and hold the door for someone I did not know.
7. I would allow someone I did not know to go in front of me in line.
8. I would point out a clerk's error in undercharging me for an item.
9. I would let a neighbor I did not know well borrow an item of value to me.
10. I would help a classmate who I did not know well with a homework assignment when my knowledge was greater than his or hers.
11. I would voluntarily look after a neighbor's pet or children without being paid
12. I would offer to help a handicapped or elderly person across the street.
13. I would offer my seat on a train or bus to someone who was standing.
14. I would help an acquaintance move houses

Scoring:

- Sum all item ratings together.
- A higher score indicates greater altruism.

Appendix II

General Anxiety Disorder 7 (GAD-7) (Lowe, et al., 2008)

Over the last 2 weeks, how often have you been bothered by the following problems?

1.Feeling nervous, anxious or on edge

2.Not being able to stop or control worrying

3.Worrying too much about different things

4. Having trouble relaxing

5. Being so restless that it is hard to sit still

6. Becoming easily annoyed or irritable

7. Feeling afraid, as if something awful might happen

Scoring

0- Not at all

1- Several Days

2- More than half the days

3- Nearly Every Day

Appendix III

Participant Information Leaflet

Research Proposal Title:

Examining the relationship between Altruistic Behaviours & Self-Reported Anxiety among Irish College Students during the COVID-19 Pandemic

 You are being invited to take part in a research study. Before you decide if you would like to participate, it is of importance for you to understand why the research is being done and what your participation will entail. Please take the time to read this document, to understand the research study. If you have any questions about the information provided, please contact me using the information provided at the end of the sheet.

Purpose of Project:

I am a final year student in the BA (Hons) in Psychology programme at National College of Ireland. As part of our degree, we must carry out an independent research project. For my project, I aim to investigate the relationship between altruistic behaviours and self-reported anxiety among Irish college students during the Covid-19 pandemic. To investigate if altruistic behaviours correlate with self-reported anxiety, to identify if altruistic behaviours predict self-reported anxiety and to investigate if there is a difference in mean altruistic behaviours among males and females. The project is being supervised by a lecturer at the National College of Ireland, David Mothersill.

Participation in the study:

If you decide to participate in this research, you will be asked to complete two questionnaires. The first one is the Generalized Anxiety Disorder Assessment (GAD-7) which will ask questions regarding one's anxiety. The second questionnaire participants will be asked to complete is the Adapted Version of the Self-Report Altruism Scale, which includes questions determining an individual's altruistic tendencies.

Who can Participate?

You can take part in the study if you are aged over 18 and are a college student between the ages of 18-25. You cannot take part in the study if you are under the age of 18 and are not a college student.

You are being invited to participate in this research study because research has shown that college students between the ages of 18-25 are an at-risk group for experiencing anxiety.

Voluntary Participation:

Participation in this research is voluntary, you don't have to participate and a decision not to take part will have no consequences for you. If you do participate you can withdraw at any time during the research. However, once you have submitted your questionnaire, you won't be able to withdraw your data from the study, because the questionnaire is anonymous and individual responses can't be identified.

Possible Risks & Benefits of Participation:

There is a small risk that some of the questions contained within the questionnaire may cause minor distress for some participants. If you experience this, you are free to discontinue participation and exit the questionnaire. The benefits of taking part in the research are that participants will get a better understanding of their own well-being in relation to anxiety by completing the anxiety questionnaire. Your participation will also contribute towards the advancement in Psychology regarding anxiety and altruism.

Confidentiality of Data:

The questionnaire is anonymous, it is not possible to identify a participant based on their responses to the questionnaire. All data collected for the research study will be treated in the strictest confidence.

Responses to the questionnaires will be stored securely in a password protected file on the researcher's computer. Only the researcher and their supervisor will have access to the data. Data will be retained for 5 years in accordance with the NCI data retention policy.

What will happen to the results of the study?

The results of this study will be presented in my final dissertation, which will be submitted to National College of Ireland

Contact for Further Information:

If you have any questions or queries regarding the research or any information provided in this information leaflet, please don't hesitate to contact me the researcher, Daiana Damoc by email at X19305281@student.ncirl.ie or the Supervisor for this research study, David Mothersill by email at David.Mothersill@ncirl.ie .

Appendix IV

Informed Consent Form

Examining the relationship between Altruistic Behaviours & Self-Reported Anxiety among Irish College Students during the COVID-19 Pandemic

Introduction: The purpose of the study is to investigate whether altruistic behaviours predict self-reported anxiety levels and if altruistic behaviours correlate with self-reported anxiety among Irish college students during the Covid-19 pandemic. This study also aimed to investigate if there is a difference in mean altruistic behaviours among males and females. The procedures involved in the research are two questionnaires, the General Anxiety Disorder 7 Scale (GAD) used to measure self-reported anxiety levels and the Self-Report Altruism Scale used to measure one's tendency to perform altruistic acts. You will not be expected to do any follow-up visits.

Procedures: The participants will be provided with a study link which will allow them to agree to the inclusion/exclusion criteria. The participants will be asked to answer the GAD-7 as well as the Adapted Self-Report Altruism Personality Scale as part of the research.

Benefits: Participants will achieve a better understanding of their own well-being in relation to anxiety by completing the GAD-7. Your involvement in the study will contribute towards the advancement in psychology as our results will be able to identify if there is a correlation present between anxiety & altruism among college students during the COVID-19 pandemic and this could lead to more research being carried out on this subject.

Risks: If you decide to take part in this research you may experience the following risks, psychological discomfort caused by carrying out the GAD-7 which may be uncomfortable for participants who may be struggling with anxiety or have had unpleasant experiences with anxiety. You may also experience emotional distress due to the GAD-7 if they are diagnosed with an anxiety disorder or are wary of answering questions which may identify that they are struggling with anxiety. Social distress may also be a potential risk you may encounter when carrying out the Self-Report Altruism Scale as individuals may feel they have to answer questions in a specific way to portrait themselves as a good person and avoid being judged.

Exclusion from Participation: Individuals will be excluded from taking part in the study if they are under the age of 18 and not a college student or between the ages of 18-25.

Confidentiality: Your identity will remain confidential, the data you provide will only be identified by the researcher which will be kept with an identifying code and stored securely.

Compensation: There will be no compensation provided for taking part in this research.

Voluntary Participation: Your participation in this study is voluntary so therefore you can withdraw from the study at any point. If you do decide to withdraw from the study, you will not be penalized and you will not be giving up any benefits that you had before participating in the study. If you do choose to withdraw and we have collected some data from you, all the data collected will be discarded.

Permission: We have been granted permission to carry out the following research from the National College of Ireland Ethics Committee.

Further Information: If you have any queries about the study, your participation in the study, your rights or any questions regarding the study you can contact me by e-mail at X19305281@student.ncirl.ie. If any new information is provided to me which may influence your participation in the study, you will be contacted immediately and provided with details.

Appendix V

Debriefing Form

Title of Research: Examining the relationship between Altruistic Behaviours & Self-Reported Anxiety among Irish College Students during the COVID-19 Pandemic

Researcher Name: Daiana Damoc

Contact Details: X19305281@student.ncirl.ie

Thank you for your participation in this research examining the relationship between Altruistic Behaviours & Self-Reported Anxiety among Irish College Students during the COVID-19 Pandemic

Please read the following form carefully to learn more about your participation in this study and formulate any questions you may have regarding the study.

The purpose of the study was to examine if altruistic behaviours predict self-reported anxiety among Irish college students during the Covid-19 pandemic. The first hypothesis of this research is that altruistic behaviours will predict self-reported anxiety levels among Irish college students during the Covid-19 pandemic. The second hypothesis is that altruistic behaviours will correlate with self-reported anxiety levels and the third hypothesis is that there will be a difference in mean altruistic behaviour among males and females.

You still can withdraw your consent to participate in the study and can choose to withdraw your data from the research by contacting me through the contact details provided.

The data you have produced for this study will remain confidential, only I will have access to the data which will be kept with an identifying code that will be stored securely.

If you are interested in the results we have produced from this research, you can contact me by e-mail at X19305281@student.ncirl.ie for further information.

If you have been affected by any of the potential risks outlined in the Informed Consent Form, please avail yourself of the following resources for mental health and emotional support presented below:

Samaritans:

Phone: 116 123

Email: jo@samaritans.org

Grow:

Tel: 1890 474 474

Email: info@grow.ie

Crisis Helpline:

Text Crisis at 50808 for 24-hour text service

Turn2me:

www.turn2me.ie

Thank you again for your participation, if there is anything you would like to discuss about the research, please don't hesitate to contact me using my contact information provided above.