The Exposure to Literary Fiction Makes Individuals More Empathetic, Fact or Fiction

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Abstract

Empathy is highly valued in society due to its many benefits, including the promotion of prosocial behaviour and previous literature have found a relationship between literary fiction exposure and empathy. The current study aimed to examine and expand upon the relationship between literary fiction and empathy. Two hypostheses and one research question were formed from reviewing the previous literature. The first hypothesis was that fiction exposure would be a positive predictor of empathy levels in individuals. The second hypothesis proposed that females would report higher levels of empathy than males and lastly, the research question queried whether an individual's regulairty of reading literary fiction would have an impact on empathy levels. A total of 609 participants were recruited through social media sites using convenience sampling. Participants completed online versions of the Toronto Empathy Questionnaire (TEQ) and an updated and revised version of the Author Recognition Test (ART). Participants also self reported their average weekly reading hours. Results from a multiple regression analysis reported that fiction exposure did not predict empathy levels. However, regularity of reading was found to be a significant predictor of empathy levels. Females also reported higher levels of empathy than males. These results highlight the importance of individuals reading literary fiction regularly.

Contents

Introduction

Empathy has been collectively perceived as a "universal good" (Wang & Todd, 2020) and is commonly defined as an emotional state that relates to another's emotions while also referring to an individual experiencing and recognising the emotions of another (Wagers & Kiel, 2019). Empathy is beneficial to society as it encourages pro-social behaviour, the act of indidviduals benefiting others (Reiss, 2017; Schroeder & Graziano, 2015). As humans are naturally social creatures, these relationships are very beneficial to the human race (Young, 2008). Not only is empathy and pro-social behaviour helpful to the social aspect of humans but has also been found to be significant in the maintaining and survival of our race as a result of mutual supportive and compassionate behaviour (Reiss & Neporent, 2018). There is also research that suggests that parents who are more empathetic are more likely to adopt more positive parenting practices as a result of their empathetic ability of recognising and accommodating their child's emotions (Hu, Emery, Ravindran, & McElwain, 2020) and in turn, positive parenting practices have been found to be a beneficial implementation to improve the psychological development of children and to also prevent psychosocial problems in later life (Herrman, Saxena, & Moodie, 2005). Lack of empathy is also highly associated with the disorder, psychopathy (Findlay, Girardi, & Coplan, 2006; Hare, 2003). Research suggests that individuals vary in their empathy levels and studies indicate that younger individuals are more empathetic than older individuals (Blanke, & Riediger, 2020), as well as women generally have higher empathy levels than men (Loon, 2009; Moore et al., 2019; Toussaint & Webb, 2005). Despite researchers originally believing that empathy was an innate trait, they have learned that empathy can be taught and empathy training is often used to help social cognitive development in children (Aslan & Köksal, 2020; Reiss, 2017). Fiction stories are also highly promoted, especially at a young age (Lenhart, Dangel & Richter, 2020) and researchers began looking at the relationship between empathy and fiction

to learn whether reading fiction has an effect on empathy levels in individuals (Johnson et al., 2013; Mar, Oatley & Peterson, 2009). This literature review aims to look at and discuss previous research on the connection between reading literature and empathy to understand more of this relationship.

Kidd and Castano (2013) were interested in the effect that reading literary fiction had on individuals and looked at the relationship between literary fiction and theory of mind. Theory of Mind (ToM), a concept similar to empathy, is the ability to predict and justify an individual's behaviour by understanding their different ideas and beliefs (Premack and Woodruff, 1978; Repacholi & Slaughter, 2004). Theory of Mind has also been linked to cognitive empathy and researchers note that the process involved in cognitive empathy may involve ToM, (Shamay-Tsoory, Tomer, Goldsher, Berger, & Aharon-Peretz, 2004). Kidd and Castano believed that literary fiction would increase individual's ToM as readers must use these ToM psychological processes to understand the thoughts and actions of these literary characters. In the experiment, a sample of 67 participants read excerpts that were either nonfiction or literary fiction and afterwards completed The Author Recognition Test (ART; Stanovich & West, 1989) to measure fiction exposure levels, and the revised Reading the Mind in the Eyes Test (RMET; Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001) to measure ToM. In the RMET participants are presented with different photos of individual's eyes and they must choose the emotion that best describes how the individual in the photograph is feeling or displaying. This test requires participants to "step into" the mindset of another individual (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001; Megías-Robles et al., 2020). Although this test is used by many researchers to measure ToM, other researchers suggest that RMET may be bias and influenced by one's social class and culture (Dodell-Feder, Ressler, & Germine, 2020) and also that RMET only measures one's emotion recognition instead of ToM (Oakley, Brewer, Bird, & Catmur, 2016). Results showed that

higher ART scores predicted higher RMET scores and RMET scores were higher in the literary fiction group. In their study, Kidd and Castano (2013) carried out a total of 5 similar tests and overall results found that reading literary fiction did increase theory of mind but only temporarily. In a similar study, Pino and Mazza (2016) looked at the use of literary fiction to enhance mentalizing ability, a component similar to empathy that is the ability understand what other individuals think and feel emotionally (Shamay-Tsoory, Aharon-Peretz & Perry, 2009; Zaki & Ochsner, 2012), the difference is that empathy also involves individuals sharing the emotional experiences of others (Decety & Jackson, 2004). Pino and Mazza wanted to extend on Kidd and Castano's (2013) by introducing more measures of empathy in their study and having participants complete a book rather than only reading an excerpt from a book. Participants read either a literary fiction, non-fiction or a science fiction book and their mentalizing abilities were measured before and after reading. Similar to Kidd and Castano (2013) this study also used RMET to measure ToM as well as the Advanced Theory of Mind Task (Happé, 1994) and Attributions to Attention Task (Sarfati, Hardy-Baylé, Besche, & Widlöcher, 1997). In total participants completed 9 measures before reading a book and 9 measures after reading a book, using a vast variety of empathy measures than other studies. The results found that non-fiction and science fiction had no impact on participant's empathetic abilities, but participants who read literary fiction showed a short term improvement in their mentalizing abilities. These results somewhat overlap with Kidd and Castano's (2013) findings in regards to literary fiction having a short term positive impact on individual's ability to understand others.

However, other researchers attempted to replicate these findings and were unable to do so, concluding that literary fiction does not improve scores on the theory of mind test (Panero et al., 2016). Panero and colleagues instead theorised that individuals with a better theory of mind are more attracted to works of fiction. Samur, Topps and Koole (2018) also

attempted to replicate Kidd and Castano's (2013) findings in a more recent study. This current study addressed the sample size of Kidd and Castano's study as a limitation and thus recruited 156 participants, a sufficient number of participants in this study. Samur, Topps and Koole (2018) also used the same literary texts, a similar type of participant sample and the same mentalising tasks to replicate Kidd and Castano's (2013) results. This study too, was unable to replicate the results and found that reading literary fiction had no effect on one's mentalising ability. The two replication studies (Panero et al., 2016; Samur, Topps & Koole, 2018) fell into agreement that reading literary fiction had no effect on participant's mentalising ability. However, Samur, Topps and Koole (2018) did note that there was only one session of participants reading literary fiction and perhaps reading literary fiction over a longer period of time would have a significant effect on individuals.

Similar to Kidd and Castano's (2013) theory that reading literary fiction would increase an individual's ToM as a result of the reader using ToM processes to understand the emotions and motivations of a fictional character, Kucirkova (2019) found from their study that children's empathy increased when reading about fictional characters dissimilar to themselves. This was because children were "challenged" to recognise and understand one's different emotions. This study also noted that higher immersion into a fictional story led to individuals empathising more with the fictional characters of the story. Mar et al. (2006) looked at the effect exposure to fiction and non-fiction had on individuals. They found that the tendency for an individual to be "absorbed" in a story, measured by The Interpersonal Reactivity Index (IRI; Davis, 1980), predicted empathy scores. Narrative transportation, the act of being immersed into the story (Shrum, 2012), was found to predict empathy scores (Mar et al., 2006). Mar et al., (2006) results also reported that females scored higher in "empathetic concern" than males. Bal and Veltkamp (2013) looked specifically at whether the feeling of being transported into a story affected empathy. Results showed that fiction did

influence the reader's empathy but only if there was emotional transportation into the story. During this study, participants were also instructed to fill out scales that were unrelated to this study's aims as a means to hide the purpose of the study. This was a strong element of the study as it left little room for bias in self-reports or socially desirable responding as participants did not know what results the researchers were looking for. It can be argued that this finding by Bal and Veltkamp (2013) overlaps with Mar et al.'s (2006) results as both studies found a relationship between empathy and a reader's immersion into the story. Females in this study also had higher empathetic skills than males, another overlap with Mar et al.'s (2006) study. A different study carried out by Johnson et al. (2013) also looking at reading fiction and empathy used Green and Brock's (2000) transportation scale to measure participant cognitive engagement, imagery and emotional impact found that individuals who generated imagery and felt more "transported" into the fictional story they were reading had an increase in empathy. Bal and Veltkamp (2013) and Johnson et al.'s (2013) results evidently support each other and add evidence to whether there is a relationship between fiction and empathy.

However, despite the two results overlapping, Johnson et al. (2013) found an increase in specifically affective empathy, the ability to share the feelings and emotions of others (Blair, 2005), in individuals who generated imagery while reading fiction. A different study looked at the relationship between reading, cognitive empathy and affective empathy (Bunce and Stansfield, 2014). Cognitive empathy refers to the ability to understand the world from another individual's perspective and "step into their shoes" (Blair, 2004; Dvash, & Shamay-Tsoory, 2014), a phrase that some researchers also use to describe Theory of mind (Bensalah, Caillies, & Anduze, 2016). This study consisted of 33 participants who completed several questionnaires before and after reading a piece of fictional work. The study found that there was a relationship between reading fiction and empathy skills (Bunce and Stansfield, 2014).

Going into further details in this study, the results found that higher levels of reading fiction are associated with cognitive empathy. However, the study also found that the more a participant feels "transported" into a story, the more affective empathy they had. This study's results clearly support Johnson et al. 's (2013) and Bal and Veltcamp's (2013) findings, although it is important to highlight that the sample size in bunce and Stansfield's (2013) study, 33 participants, is far too small and could have led to unreliable results.

Johnson et al. (2013) also found from their study that generating higher levels of imagery when reading fiction, increased empathy in individuals. Participants in a study carried out by Koopman (2016) were asked to read different works of literary fiction, some texts containing more imagery than others. Results showed that regardless of the imagery in the text participant scores were higher after reading the literary fiction texts. Results also found that females, as opposed to males, reported feeling more empathy towards the fictional characters they were reading about. However, Koopman (2016) disagreed with Johnson et al. (2013) and found that imagery, measured using IRI (Davis, 1980) was not highly important when enhancing empathy. Unlike Koopman's (2016) study, the participants in Johnson et al.'s (2013) received instructions to on how to generate imagery from stimulus modalities such as auditory and visual. This may have aided the participants in this study to truly experience and create imagery, whereas it may be possible that participants in the other study were not aware of how to generate such imagery when reading.

Djikic, Oatley and Moldoveanu (2013) were also interested on the effect that literature had on individual's empathy. Participants in this study read texts of literature and completed different questionnaires regarding fiction and non-fiction. This study did not measure "transportation" into the literary text. A possible answer to Samur, Topps and Koole's (2018) theory in regards to reading literature over a longer period of time is this current study. Djikic, Oatley and Moldoveanu (2013) found that the longer participants have

been reading fiction in their lives, the better they did on the tests measuring empathy. Unlike previous studies (Bal & Veltkamp, 2013; Mar et al., 2006), "transportation" into a story was not needed to increase empathy levels in individuals. This study also found no increase in affective empathy unlike Johnson et al.'s (2013) study. This may have been because researchers did not measure a participant's "transportation" into the text. A limitation of this study was that participants were college students and therefore the average age was noted as 21.7 which does not represent the full population.

Another study carried out by Mar, Oatley and Peterson (2009) aimed to replicate Mar et al.'s (2006) findings while eliminating the reader's personality. Mar, Oatley and Peterson (2009) wanted to rule out the possibility that fiction readers in general simply have character traits that make them more empathetic. Gender, openness and the tendency to be drawn into a story were statistically controlled for. Despite controlling for these traits, both studies found the same results, that exposure to fiction predicted empathy scores. Not only does Mar, Oatley and Peterson's replication study add authenticity to previous findings but also eliminates other factors in the relationship between fiction and empathy. A previous study also alluded to fiction readers naturally having a stronger theory of mind rather than the act of reading fiction enhancing this theory of mind (Panero et al., 2016). These studies focused different topics but do consider similar concepts (empathy and theory of mind) and it would be beneficial to control for such personal traits while studying literary fiction and theory of mind. Implications of this suggested study would either add support to Panero et al.'s (2016) theory that individuals who have a stronger theory of mind are drawn to fiction or rule out this theory. Also note that a limitation of Mar, Oatley and Peterson's (2009) study is the small participant age range. Participant ages in this study ranged from 17 to 38 years, and therefore results may not be generalizable to the older population.

The most recent study which looked at exposure to fiction and empathy was conducted by Black and Barnes (2020). This study's main focus was to investigate the relationship between fiction exposure and morally relevant traits. Empathy among other traits were investigated. The results from this study tied in with previous ones and found that fiction exposure, tested by Author Recognition Test (ART; Bunce & Stansfield, 2014), positively correlated with empathy. Although this result was significant, the correlation between empathy and fiction exposure was weak. Similar to previous studies (Djikic, Oatley & Moldoveanu, 2013; Mar, Oatley & Peterson, 2009), a limitation of this study was poor participant age range. Participant ages in this study ranged from 18 to 21 years and as a result these findings may not be generalizable to the older population.

These studies have individual strengths when looking at this relationship, some that tend to overlap. However, there are gaps in the literature. These studies have not considered how regularly an individual is exposed to literary fiction and how that may impact levels of empathy. These studies have also not looked at empathy and gender of fiction readers. As there is research that suggests women have higher levels of empathy than men, it would be interesting to learn whether exposure to fiction will impact the gender difference in empathy. Many of these studies were also criticised for their small sample size (Bal & Veltkamp, 2013; Bunce & Stansfield, 2014; Kidd & Castano, 2013) and narrow participant age range (Bal & Veltkamp, 2013; Black & Barnes, 2020; Djikic, Oatley & Moldoveanu, 2013; Mar, Oatley & Peterson, 2009) and as a result the current study plans to recruit a sufficient size sample with a wide range of participants to create more generalizable results. Many of these studies (Black & Barnes, 2020; Kidd & Castano, 2013; Mar, Oatley & Peterson, 2009) have used The Author Recognition Test to measure fiction exposure, however, none of these previous studies have used the revise version by Acheson et al. (2008). As well as this, none of these studies have used The Toronto Empathy Questionnaire to measure empathy levels. The

current study will be using both of these measures and it will be interesting to learn whether there will be a relationship between fiction exposure and empathy levels using these different measures.

The current study aims to expand upon, while also adding support to previous results on the relationship between fiction exposure and empathy. From reviewing the previous literature on this topic and identifying the gaps in the literature, one research question and two hypotheses have been formed. The research question asks does the regularity of reading have an impact on empathy levels. The first hypothesis that has been generated in this study is that fiction exposure will be a significant predictor of individual's empathy levels. The second hypothesis developed is that regardless of exposure to fiction, women will report higher levels of empathy than men.

Methods

Participants

The current study's sample consisted of 609 participants, 509 of which were females, 92 of which were males and 8 participants identified as "other". Participant's ages ranged from 18 years to 77 years old. Participants in this study were digitally recruited using convenience sampling through the social media platforms, Facebook and Goodreads. Non-readers and readers of all genres were invited to take part. From these platforms, participants volunteered to take part in this study and therefore did not receive incentives. Although participant's nationality, religion and ethnicity demographics were not noted in the study, all groups were invited to take part. Individuals under 18 years old, individuals without access to the internet and individuals who did not give informed consent were unable to take part in this study.

Materials

The study's questionnaire consisted of participant demographic questions and two established scales. Participants answered questions in relation to their gender, age and years of education completed. Participants were also asked to indicate on average how many hours a week they spend reading literary fiction. This questionnaire was presented on Google Forms, a survey administration software.

Author Recognition Test (ART): Originally created by Stanovich and West (1989) to overcomes issues with self-report reading measures and socially desirable responding (Kidd & Castano, 2013; Rain & Mar, 2014). However, in this study an updated and revised version created by Acheson et al. (2008) was used online. Acheson et al. provided which authentic author names and what foils they used; however, they did not provide the order in which they were placed. As a result of this, the author's names and foils were randomised by the researcher for this study. This test was created to measure an individual's exposure to

literary fiction. The revised test presents 130 different names, some of which are author's names and some which are fabricated names. Participants selected the names of authors which they recognised. The number of false alarms selected (fabricated names) are subtracted from the number of hits selected (authentic author's names) to determine the participants score. Higher scores indicate higher levels of exposure to fiction, while lower scores indicate lower levels of exposure to fiction. Mol and Bus (2011) found ART to have high reliability (α = .84). See "Appendix B" for further detail.

Toronto Empathy Questionnaire (TEQ): Created by Spreng et al. (2009) was completed online by participants to measure their empathy levels. This questionnaire compiled of 16 statements which participants rated according to how often they feel or behave in the manner of which the statements describe. Participants rated these statements as either 0 ("Never"), 1 ("Rarely"), 2 ("Sometimes"), 3 ("Often") or 4 ("Always"). Questions 1,3,5,6,8,9,13 and 16 are scored according to this scale, however, questions 2,4,7,10,11,12,14 and 15 are reverse scored. For example, if a participant chose 0 ("Never") on one of these questions it will now be marked as 4. The scores are then added together to determine the participant's total score on The Toronto Empathy Questionnaire. Higher scores indicate higher levels of empathy, while lower scores indicate lower scores of empathy. Internal consistency was found to be good, Cronbach's α = .85 (Spreng et al., 2009). The Cronbach's Alpha for this current study showed good internal consistency (α = .80). Please see "Appendix A" in the appendix section.

Design

This study was carried out using quantitative methods and primary data. The study also used a cross-sectional design and correlational design to investigate relationships between fiction exposure and empathy levels. The independent variables (IV) in this study

were fiction exposure, self-reported frequency of fiction exposure and gender and the dependant variable (DV) in this study was self-reported empathy levels.

Procedure

Before the study's recruitment of participants began, the researcher applied for and received ethical approval from the National College of Ireland. Participants responded to advertisements found on the social media platforms Facebook or Goodreads. These advertisements contained details of the study in general terms, estimated duration and what is expected of the participants. Participants were made aware that this study was voluntary and contained no incentives. Participants were also made aware of the benefits and possible risks of this study. Participants decided to volunteer and click on a link found on the advertisements. This link brought them to Google Forms, the platform on which the survey was provided. Before participants decided to take part they were made aware that once they submit their data they were be unable to withdraw it as it is anonymous. They then agreed to the terms and conditions in the online consent form and began the study. See "Appendix C' and "Appendix D".

Participants were required to fill out their demographics of age and gender. They also indicated on average how many hours per week they spend reading literary fiction to determine the frequency of which they are exposed to literary fiction. Participants then completed The Toronto Empathy Questionnaire (TEQ; Spreng et al., 2009), rating 16 statements in relation to how they regularly feel or act. The scores were then summed to determine the participant's score. The participant then completed an updated and revised version (Acheson et al., 2008) of The Author Recognition Test (ART; Stanovich and West, 1989). In this test, participants selected the names of authors that they recognise. Authentic names of authors will be a point, while fabricated names will be minus a point. After the test

was completed by participants, scores were be tallied to determine their exposure to literary fiction.

After all of the elements of the survey were completed, participants were then presented with an online debriefing sheet which thanked them for their time, reminded them that their data cannot be withdrawn at this point and offered the researcher's and supervisor's email to contact if they had any questions or experienced any distress. Estimated time of participation was approximately 20 minutes and participants were not offered breaks due to the short participation time. Once data collection was completed, the researcher transferred the data from Google Forms to Excel, and then from Excel to SPSS. After the data was transferred to SPSS, the researcher proceeded to run the appropriate tests for this study. Please see "Appendix E".

Results

Descriptive Statistics

This study's sample consisted 609 participants. This consisted of 509 females (83.6%), 92 males (15.1%) and 8 others (1.3%). Descriptive statistics for continuous variables (education years completed, average reading hours per week, empathy levels, fiction exposure levels and age) are shown below in Table 1.

Table 1

Descriptive statistics for all continuous variables

Variable	*M* [95% CI]	*SD*	Range
Education years	16.16[15.93, 16.38]	2.78	8-24
Reading hours	7.56[7.08, 8.05]	6.08	0-20
Empathy levels	50.31[49.82, 50.79]	6.13	35-64
Fiction exposure levels	22.51[21.31, 23.70]	15.02	-2-60
Age	37.67[36.43, 38.90]	15.46	18-77

Inferential Statistics

Multiple regression analysis was performed to determine how well empathy levels could be explained by five variables including gender, reading hours, fiction exposure levels, education years and age. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. The correlations between the predictor variables and the criterion variable included in the study were examined (see Table 2 for full details). Three of the five predictor variables were significantly correlated with the criterion variable, and these significant effects ranged from r = .12 (reading hours) to r = .13 (gender). The correlations between the predictor variables were also assessed with r values ranging from .05 to .59. Tests for multicollinearity also indicated that all Tolerance and VIF

values were in an acceptable range. These results indicate that there was no violation of the assumption of multicollinearity and that the data was suitable for examination through multiple linear regression analysis.

Table 2

Correlations between variables included in the model

Variable	1.	2.	3.	4.	5.	6.
1. Empathy levels	-					
2. Reading hours	.12**	-				
3. Fiction exposure levels	.04	.35***	-			
4. Gender	.12**	.19***	.15***	-		
5. Education years	.13**	.07*	.21***	.05	-	
6. Age	.01	.21***	.59***	.06	.15***	-

Note: *$p < .05$; **$p < .01$; ***$p < .001$

Since no a priori hypotheses had been made to determine the order of entry of the predictor variables, a direct method was used for the analysis. The five predictor variables explained 4% of variance in empathy levels ($F(5, 603) = 4.97$, $p < .001$). Three of the five variables were found to uniquely predict empathy levels to a statistically significantly level: reading hours ($\beta = .11$, $p = .014$), being female ($\beta = .11$, $p = .011$) and education years ($\beta = .12$, $p = .003$) (see Table 3 for full details).

Table 3

Multiple regression model predicting empathy scores

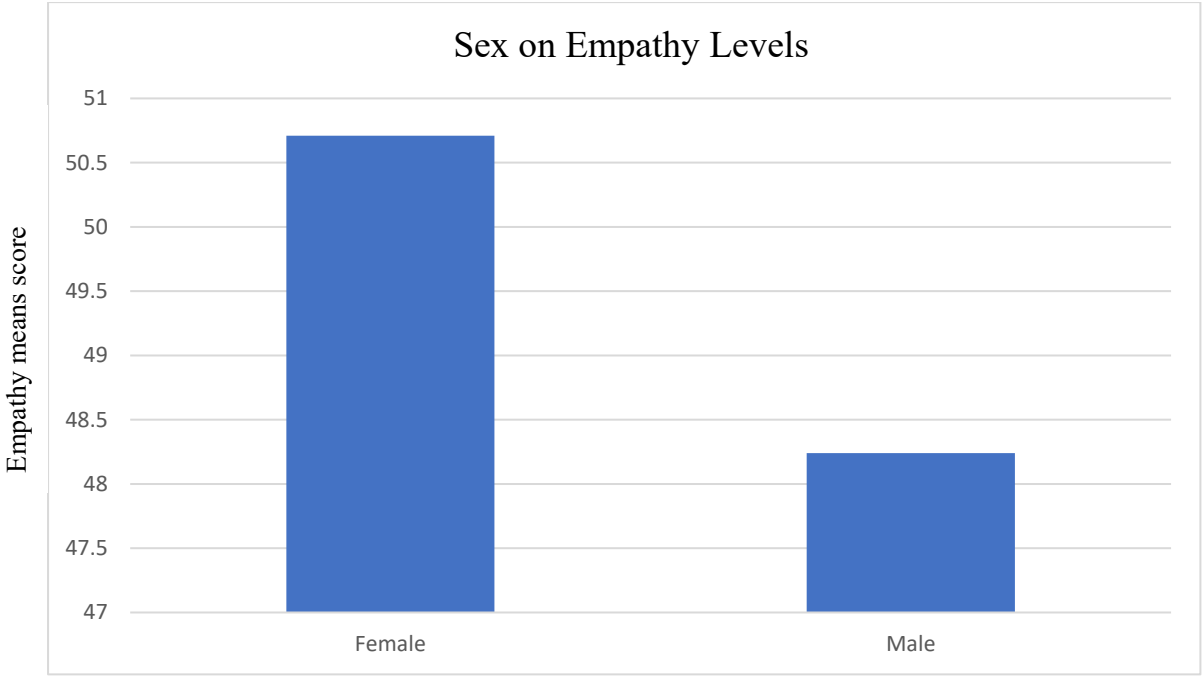
Variable	R^2	B	SE	β	*t*	*p*
Model	**.04*** **					

Reading hours	0.11	0.04	0.11	2.45	.014
Fiction exposure levels	-0.00	0.02	-0.01	-0.25	.799
Gender	1.69	0.66	0.11	2.56	.011
Education Years	0.27	0.09	0.12	2.97	.003
Age	-0.01	0.02	-0.02	-0.45	.650

Note: ***$p < .01$

Figure 1

Bar chart displaying mean differences in empathy levels between females and males



To summarise, a standard multiple regression analysis was carried out to test both hypotheses and the research question. There was no significant correlation between fiction exposure levels and empathy levels and fiction exposure levels did not predict empathy scores. Reading hours, being female and education years predicted empathy levels to a statistically significant level. There was also a positive significant correlation between age and fiction exposure levels.

Discussion

The current study aimed to examine the relationship between literary fiction and empathy, as well as to expand one's knowledge on this topic and to add support to previous findings. This study also wished to examine whether individual's regularity of reading, measured by participant's average weekly reading hours, had an impact on empathy levels. By reviewing the previous literature on empathy and literary fiction, it was concluded that many studies did report a positive relationship between literary fiction and empathy (Black & Barnes; Djikic, Oatley & Moldoveanu, 2013; Mar et al., 2006; Mar, Oatley & Peterson's, 2009). From this analysis of previous literature, the first hypothesis was formed. It was hypothesized that fiction exposure will be a positive predictor of empathy levels. However, a stand multiple regression analysis determined that fiction exposure was not found to be a significant predictor of empathy levels. In this case, this hypothesis was not supported by the data. A second hypothesis was also formed from previous literature (Loon, 2009; Moore et al., 2019; Toussaint & Webb, 2005) and it was hypothesized that regardless of fiction exposure, females will report higher empathy levels than males. This was tested also using a multiple regression analysis and results determined that being female was a significant predictor of empathy levels, however the difference in mean empathy scores between male and female was small. This data supports the second hypothesis. These results also mirror previous study's findings (Bal & Veltkamp, 2013; Koopman, 2016; Mar et al., 2006). However, it is important to note that despite this result, this was an unbalanced design as there was many more female participants than male participants. Therefore it would be beneficial to replicate this study with a balanced design to produce more reliable results. Lastly, one research question was developed. The researcher was interested in whether individual's regularity of reading had an effect on empathy levels. This question was queried

using multiple regression and results found reading regularity to be a significant predictor of empathy levels.

This study's results contradict many previous findings in regards to the relationship between fiction exposure and empathy. This study did not measure participant's immersion into a story despite many previous studies measuring an individual's "transportation" into a fictional story (Johnson et al., 2013; Mar et al., 2006) and some studies even finding that individual's emotional "transportation" was needed for an increase in empathy levels (Bal & Veltkamp, 2013). However, Koopman (2016) found that an individual's "transportation" into a fictional story was not essential for increasing empathy levels and therefore it is unlikely that the current study's choice not to measure "transportation" had an impact on this study's results. Although, the measures used in this current study may have had an impact on these results. Firstly, to the researcher's knowledge, neither of these measures have been used in previous studies that looked at empathy and literary fiction. Regarding the Toronto Empathy Questionnaire (TEQ; Spreng et al., 2009), which was used to measure participant's empathy, it is possible that socially desirable responding played a part here. Socially desirable responding occurs when individuals give answers that they believe are most desirable and that which will make them look more desirable (Paulhus, 2001). Society appreciates the actions of one's empathy and views empathy as valuable (Sassenrath, 2020). Therefore, due to the self-report nature of the TEC, despite the study being anonymous, it is possible this response bias took place which may have cause participant's TEC scores to increase. On the other hand, the Author Recognition Test (ART), as mentioned before, was created to overcome issues such as socially desirable responding (Kidd & Castano, 2013). As a result of possible socially desirable responding on the TEC and not on the ART it is possible that this led to skewed results and therefore analysis found no significant correlation between fiction exposure and empathy levels. Regarding the ART, a factor that may have negatively affected

fiction exposure is COVID-19. It is not assumed in the ART that when a participant recognises an author's name that they have also read that certain author's work (Moore & Gordon, 2015). It is assumed that if they read a lot they will recognise and be exposed to more authors, whether it be in a library or discussing author's works among other individuals. However, individual's exposure to fiction may have decreased as a result of libraries closing or book clubs being cancelled, due to COVID-19 "lockdowns". This may have led to participant's ART scores decreasing while TEQ scores possibly increasing due self-report bias. These are possible explanations for why the current study's results have not been consistent with many other study's findings (Black & Barnes; Djikic, Oatley & Moldoveanu, 2013; Mar et al., 2006; Mar, Oatley & Peterson's, 2009). Another factor to mention is that there was a positive significant relationship between age and ART scores and although there was a wide range of participants ages in this study, the majority of participants were younger than 35 years of age. The current study used a version of the ART from the year 2008 and therefore it may be possible that the ART needs to be updated with more relevant and recent literary fiction authors. Although, perhaps no explanation is needed and this study simply disagrees with previous results and concludes that there is no relationship between empathy and literary fiction.

Participant's regularity of reading was found to be a significant predictor of empathy levels. It is again important to note that, because reading is considered to be socially desirable (Stanovich & West, 1989), participants may have been inclined to be bias in their self-report and reported higher reading hours than accurate. These results also somewhat overlap with Djikic, Oatley and Moldoveanu's (2013) findings. Djikic, Oatley and Moldoveanu (2013) found from their study that the longer an individual had been reading fiction in their lives, the higher empathy levels they had whereas in this study the results found that the more regularly participants read, the more empathy they have. These results, although slightly different,

clearly tie in together. Pino and Mazza (2016), although not looking specifically at empathy but mentalizing abilities, a component involved in empathy, concluded from their study that reading fiction did improve mentalizing abilities but only short term. It can be argued from the current study's results and Pino and Mazza's (2016) results that individuals mentalizing abilities improve temporarily from reading fiction but can have longer lasting improvements the more regularly an individual reads.

As mentioned before, many previous studies had poor sample sizes (Bunce & Stansfield, 2014; Kidd & Castano, 2013) and poor sample age ranges (Bal & Veltkamp, 2013; Black & Barnes, 2020), and therefore a strength of the current study is the sufficient sample size of 609 participant as well as the wide range of participant's ages (18 – 77). These factors lead to these results being more reliable and more generalisable to the population. Despite the large sample size, only 15.1% of participants were male and therefore this was a limitation when looking at gender differences in empathy levels. Replicating this study with a balanced design of male and female participants would prove to be beneficial.

Further research should be continuously carried out looking at the relationship between literary fiction and empathy to further our knowledge on how one can increase and strengthen one's empathy. This is beneficial for humans and society for many reasons such as promoting pro-social behaviour (Reiss, 2017), positive development in children (Aslan & Köksal, 2020) and creating personal relationships (Kerem, Fishman, & Josselson, 2001). Perhaps if individuals are educated on the many benefits of empathy and made aware of the positive relationship between empathy and literary fiction, this will encourage them to increase their exposure to literary fiction. As many studies have found a relationship between fiction exposure and empathy, there should be more emphasis made on the importance of reading fiction and reading fiction should be highly promoting at a young age. The current study's results may inspire individuals to read more regularly and perhaps parent's may

encourage their children to take up reading as a pastime and to read fiction more regularly. The education system should also focus on the importance of these results and invest resources into school libraries as well as introducing book clubs and other events that give school children the chance to engage in reading and increase their reading habits. Further studies should be carried out on the relationship between literary fiction and reading regularity to add support to the current study's findings. Future studies should be carried out using experimental designs, for example perhaps researchers should require one group of participants to read literary fiction for one hour every day for two weeks, while the second group of participants only reads literary fiction for one hour every weekend for two weeks. It would be interesting to measure the two groups results empathy levels before and after the two weeks reading experiment and compare the results.

In conclusion, the current study viewed the relationship between literary fiction and empathy and carried out its own tests to learn more about this relationship. This study also determined whether an individual's regularity of reading literary fiction had an impact on empathy levels. Analyses carried out in this study did not find a relationship between fiction exposure and literary fiction. However, the more regular an individual reads was found to have an impact on empathy levels. Females were also found to report higher levels of empathy than males, although a replicated study with a balanced design be carried out to further support these results. As a result of the findings, individuals should be encouraged to read more regularly to increase their empathy and future studies should be carried out to expand our knowledge on this relationship and to makes these results more reliable. Carrying out further research on this topic and expanding our knowledge on how to increase an individuals empathy is imortant as empathy is beneficial to society as it promotes prosocial behaviour (Decety, Bartal, Uzefovsky, & Knafo-Noam, 2016).

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Appendices

Appendix A

Toronto Empathy Questionnaire

Below is a list of statements. Please read each statement carefully and rate how frequently you feel or act in the manner described. Circle your answer on the response form. There are no right or wrong answers or trick questions. Please answer each question as honestly as you can.

1. When someone else is feeling excited, I tend to get excited too
2. Other people's misfortunes do not disturb me a great deal
3. It upsets me to see someone being treated disrespectfully
4. I remain unaffected when someone close to me is happy
5. I enjoy making other people feel better
6. I have tender, concerned feelings for people less fortunate than me
7. When a friend starts to talk about his\her problems, I try to steer the conversation towards something else
8. I can tell when others are sad even when they do not say anything
9. I find that I am "in tune" with other people's moods
10. I do not feel sympathy for people who cause their own serious illnesses
11. I become irritated when someone cries
12. I am not really interested in how other people feel
13. I get a strong urge to help when I see someone who is upset
14. When I see someone being treated unfairly, I do not feel very much pity for them
15. I find it silly for people to cry out of happiness
16. When I see someone being taken advantage of, I feel kind of protective towards him\her

Scoring Item responses are scored according to the following scale for positively worded items 1, 3, 5, 6, 8, 9, 13, 16. Never = 0; Rarely = 1; Sometimes = 2; Often = 3; Always = 4. The following negatively worded items are reverse scored: 2, 4, 7, 10, 11, 12, 14, 15. Scores are summed to derive total for the Toronto Empathy Questionnaire.

Appendix B

Revised Author Recognition Test (ART)

Below is a list of 130 different author's names. Please select any and all author's names that you recognise. Please note that some of the names below are fabricated and are not real author's names, this is to discourage guessing.

Ernest Hemmingway

Lauran Adamson

Eric Amsel

Carter Anvari

F. Scott Fitzgerald

Margarita Azmitia

Oscar Barbarian

Stephen King

T. S. Elliot

Reuben Baron

J. R. R. Tolkien

Christopher Barr

Gary Beauchamp

Lauren Benjamin

Thomas Bever

George Orwell

Brian Bigelow

Maya Angelou

William Faulkner

E. B. White

Elliot Blass

Dale Blyth

Harper Lee

Harrison Boldt

Tom Clancy

J. D. Salinger

Hilda Borko

James Patterson

Virginia Woolfe

John Grisham

Jennifer Butterworth

Katherine Carpenter

Devon Chang

Naomi Choy

Ray Bradbury

Suzanne Clarke

Thomas Wolfe

Jack London

Toni Morrison

Charles Condie

Julia Connerty

John Condry

Ayn Rand

John Irving

Steve Yussen

James Morgan

James Joyce

Kurt Vonnegut

Peter Rigg

Aimee Dorr

Scott Paris

Carl Corter

Samuel Beckett

Margaret Atwood

Robert Emery

Frank Manis

Danielle Steel

Ralph Ellison

Gabriel Garcia Marquez

Tracy Tomes

Alice Walker

Carla Grinton

Isabel Allende

Isaac Asimov

Sheryl Green

Jennifer Marshal

Caleb Lim

Denise Daniels

T. C. Boyle

Vladimir Nabokov

Joyce Carol Oates

Margaret Mitchell

Clive Cussler

Ryan Gilbertson

Mark Strauss

Robert Ludlum

Geraldine Dawson

Salman Rushdie

Willa Cather

Allister Younger

Nora Ephron

Jackie Collins

Samuel Paige

K. Warner Schaie

Sue Grafton

Kazuo Ishiguro

Anne McCaffrey

Paul Theroux

Lilly Jack

Diane Cuneo

Howard Gardner

Janice Taught

Judith Krantz

Sophia Martin

W. Patrick Dickson

Thomas Pynchon

James Michener

Ann Beatie

Michael Ondaatje

Hugh Lytton

Nelson Demille

Umberto Eco

Frank Gresham

Raymond Chandler

David Singer

Dick Francis

Sidney Sheldon

Noah Whittington

Martin Ford

Lynn Liben

Morton Mendelson

Mimi Hall

Reed Larson

Saul Bellow

James Clavell

Robert Inness

Johnathan Kellerman

Wally Lamb

Susan Kormer

David Perry

Jane Smiley

Jean M. Auel

Brian Herbert

Tony Hillerman

Kirby Kavanagh

Herman Wouk

Lena Johns

Miriam Sexton

Bernard Malamud

Ava Wight

None of the above

Appendix C

Participant Information Sheet

Examining the relationship between literary fiction and empathy

You are being invited to take part in a research study. Before deciding whether to take part, please take the time to read this document, which explains why the research is being done and what it would involve for you. If you have any questions about the information provided, please do not hesitate to contact me using the details at the end of this sheet.

What is this study about?

I am a final year student in the BA 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 literary fiction exposure and empathy levels. Literary fiction has been defined as "the creation of narrative worlds populated by complex characters whose inner lives invite exploration" (Hakemulder, 2000; Kuiken, Miall, & Sikora, 2004; Mar & Oatley, 2008). Literary fiction is a narrative piece of work that is character driven and focuses more on writing style which allows the reader to feel transported into the story.

What will taking part in the study involve?

Participants will be asked to complete an online questionnaire. They will be asked to provide some of their demographics such as gender and age and will be asked questions on the topic of empathy and fiction authors and their reading habits. The questionnaire should take approximately 15 minutes.

You can take part in this study if you are over the age of 18 years and have any form of access to the internet. Readers of all kinds are able to take part.

Do I have to take part?

Participation in this research is voluntary; you do not have to take part, and a decision not to take part will have no consequences for you. If you do decide to take part, you can withdraw from participation at any time before your data has been submitted. You can do this by simply leaving the online questionnaire page.

One you have submitted your questionnaire, it will not be possible to withdraw your data from the study, because the questionnaire is anonymous and individual responses cannot be identified by the researcher.

What are the possible risks and benefits of taking part?

There are no direct benefits to you for taking part in this research. However, the information gathered will contribute to research that helps us to understand the relationship individuals reading literary fiction and empathy in individuals. Participants may also benefit from taking part in an interesting questionnaire.

There are no risks that are expected by taking part in this study. If a participant does fell distressed from taking part in this survey, they are free to discontinue their participant and to contact the research and/or their supervisor.

Will taking part be confidential and what will happen to my 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 study will be treated in the strictest confidence. Each participant will be assigned a unique ID number, and their data will be stored under this ID number. Only the researcher and academic supervisor will have access to the data collected. However, in the unlikely event that the researcher or academic supervisor believes that there is a significant risk of harm or danger to the participant or another individual, or a law has been broken, they would then be required to share this information with the relevant authorities. In this very unlikely event, the researcher would discuss this with you first, but they may be required to breach

confidentiality with or without your permission. Participant's data from the study 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 this study?

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

Who should you contact for further information?

The researcher details: Nicole Sutton

Nicolesutton.nci@gmail.com

The supervisor's details: David Mothersill

David.Mothersill@ncirl.ie

Appendix D

Participant Consent Form

Participation Consent Form

Researcher: Nicole Sutton

Please read the following information thoroughly. You are required to tick the box below if you wish to participate. Ticking this box states that you are over the age of 18 years and are aware that once your data has been submitted, you are unable to withdraw it from the study. Participants are being asked to voluntary take part in research project that is looking at the relationship between reading literary fiction and empathy in individuals. Participants will complete an online questionnaire answering questions about this topic as well as submitting some of their demographics such as age and gender. Participants will be allowed to withdraw from the study at any point up until their data has been submitted. The data is anonymous so once it is submitted it is impossible to locate this data.

☐ **I acknowledge that I understand what is involved in participation and I agree that I am taking part voluntarily. I agree that I will be able to withdraw my data at any point of the study up until my data has been submitted. I acknowledge and agree that I cannot withdraw my data once I have submitted it. I understand what my data will be used for and agree to it.**

Appendix E

Participant Debriefing Sheet

Debriefing Sheet

Thank you for your time and contribution to this study. Participants have been asked to take part in the study to contribute their data to researcher the relationship between reading literary fiction and empathy. The results and data of this study will be presented in my final dissertation, which will be submitted to National College of Ireland. At this point, as participant's data have already been submitted, they will be unable to withdraw their data from the study. This is because the data has been submitted anonymously and is therefore unable to be located by the researcher. Participants will remain anonymous throughout the entirety of this study. If participants felt distressed during any part of the study, they are encouraged to contact the researcher or their supervisor.

Researcher's Details: Nicole Sutton

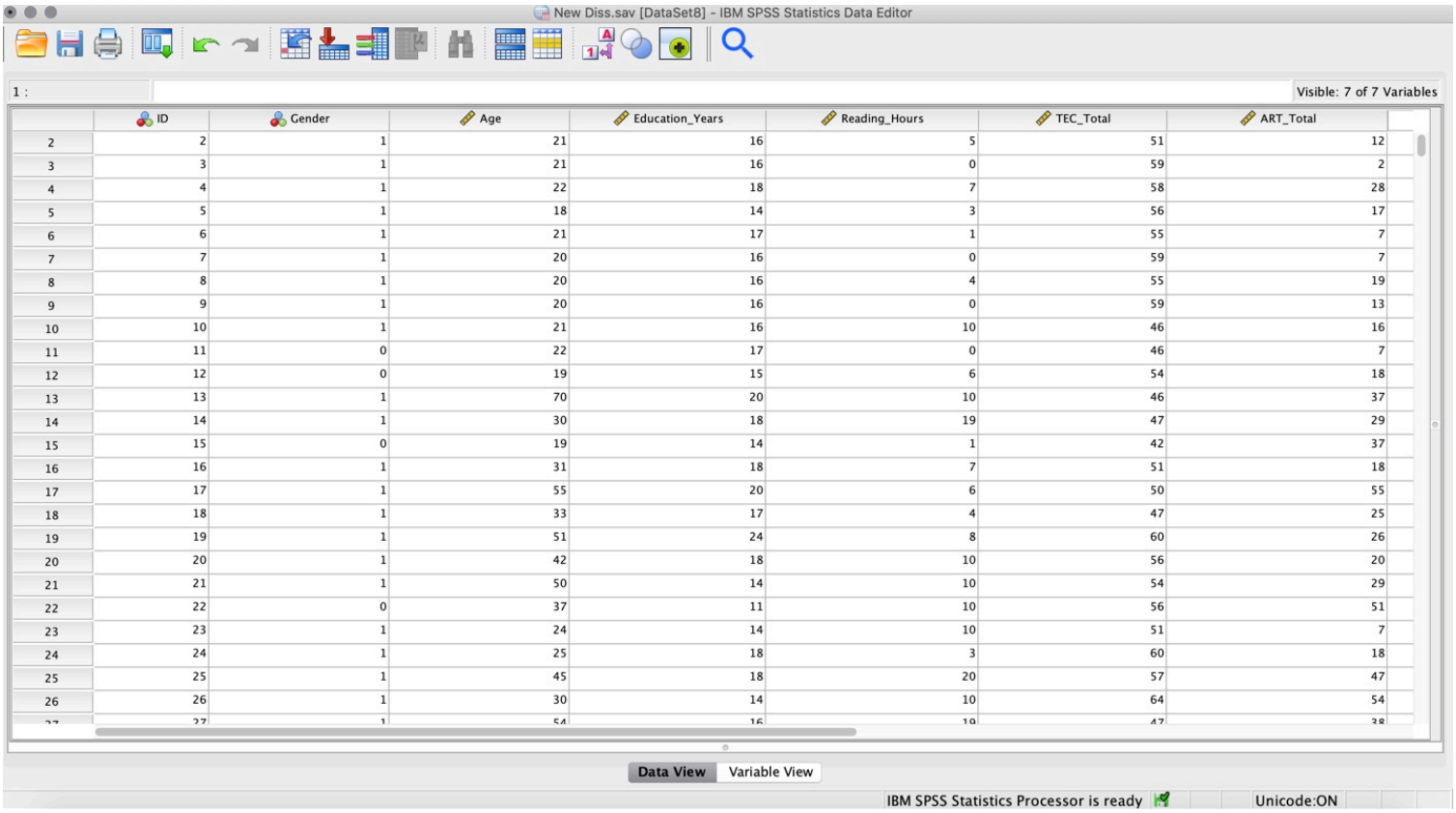
Nicolesutton.nci@gmail.com

Supervisor's Details: David Mothersill

David.Mothersill@ncirl.ie

Appendix F

Participant data presented on SPSS and SPSS output

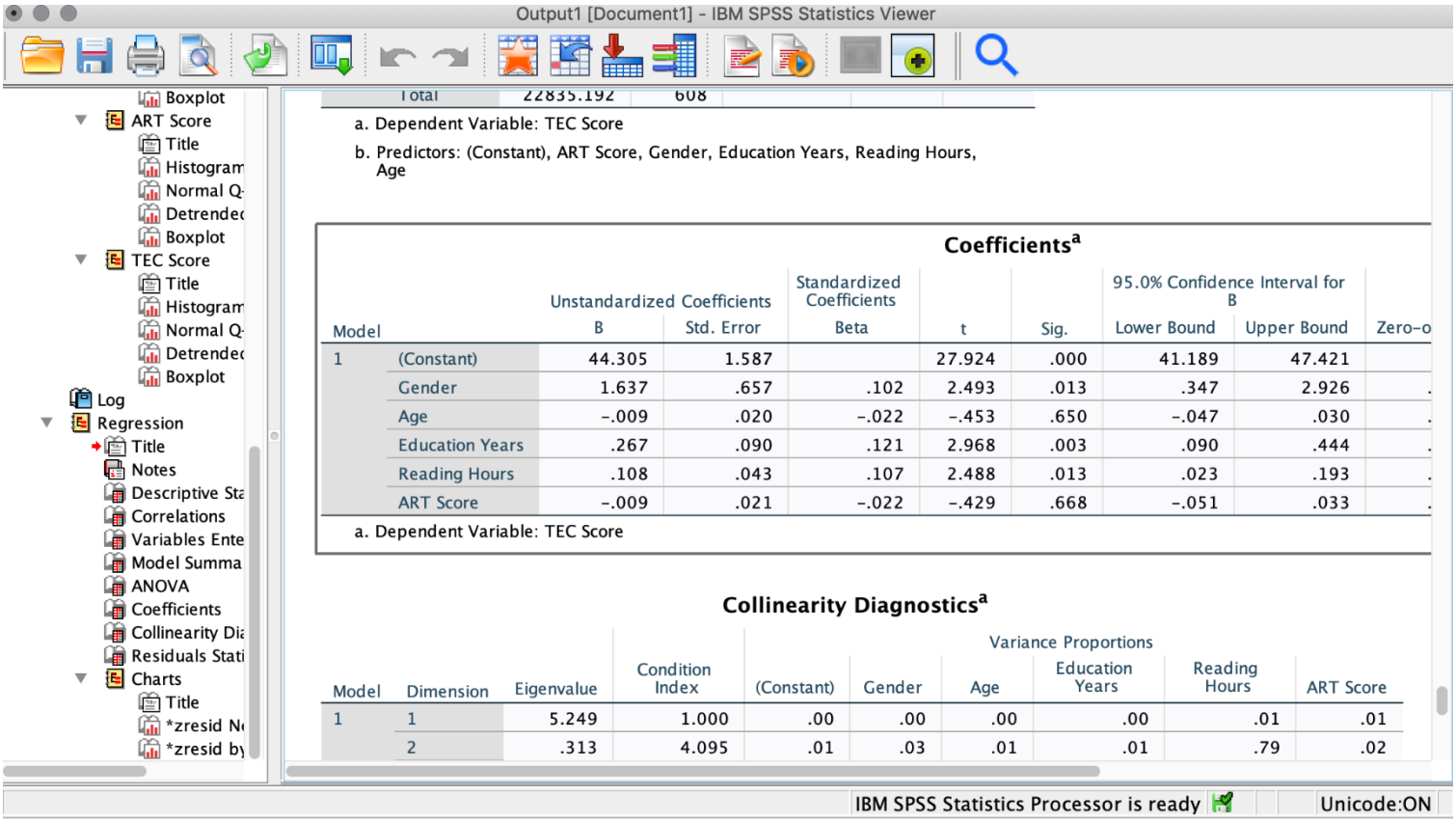

New Diss.sav [DataSet8] - IBM SPSS Statistics Data Editor

Visible: 7 of 7 Variables

	ID	Gender	Age	Education_Years	Reading_Hours	TEC_Total	ART_Total
2	2	1	21	16	5	51	12
3	3	1	21	16	0	59	2
4	4	1	22	18	7	58	28
5	5	1	18	14	3	56	17
6	6	1	21	17	1	55	7
7	7	1	20	16	0	59	7
8	8	1	20	16	4	55	19
9	9	1	20	16	0	59	13
10	10	1	21	16	10	46	16
11	11	0	22	17	0	46	7
12	12	0	19	15	6	54	18
13	13	1	70	20	10	46	37
14	14	1	30	18	19	47	29
15	15	0	19	14	1	42	37
16	16	1	31	18	7	51	18
17	17	1	55	20	6	50	55
18	18	1	33	17	4	47	25
19	19	1	51	24	8	60	26
20	20	1	42	18	10	56	20
21	21	1	50	14	10	54	29
22	22	0	37	11	10	56	51
23	23	1	24	14	10	51	7
24	24	1	25	18	3	60	18
25	25	1	45	18	20	57	47
26	26	1	30	14	10	64	54

Data View | Variable View

IBM SPSS Statistics Processor is ready | Unicode:ON


Output1 [Document1] - IBM SPSS Statistics Viewer

- Boxplot
- ART Score
  - Title
  - Histogram
  - Normal Q
  - Detrended
  - Boxplot
- TEC Score
  - Title
  - Histogram
  - Normal Q
  - Detrended
  - Boxplot
- Log
- Regression
  - Title
  - Notes
  - Descriptive Sta
  - Correlations
  - Variables Ente
  - Model Summa
  - ANOVA
  - Coefficients
  - Collinearity Dia
  - Residuals Stati
- Charts
  - Title
  - *zresid N
  - *zresid by

Total	22835.192	608	

a. Dependent Variable: TEC Score

b. Predictors: (Constant), ART Score, Gender, Education Years, Reading Hours, Age

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	95.0% Confidence Interval for B Upper Bound	Zero-o
1	(Constant)	44.305	1.587		27.924	.000	41.189	47.421	
	Gender	1.637	.657	.102	2.493	.013	.347	2.926	
	Age	-.009	.020	-.022	-.453	.650	-.047	.030	
	Education Years	.267	.090	.121	2.968	.003	.090	.444	
	Reading Hours	.108	.043	.107	2.488	.013	.023	.193	
	ART Score	-.009	.021	-.022	-.429	.668	-.051	.033	

a. Dependent Variable: TEC Score

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Gender	Age	Education Years	Reading Hours	ART Score
1	1	5.249	1.000	.00	.00	.00	.00	.01	.01
	2	.313	4.095	.01	.03	.01	.01	.79	.02

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