



Early Online Graphic Content Exposure and the Development of Desensitisation to Violence

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National College of Ireland

March 2023

Submission of Thesis and Dissertation

National College of Ireland
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(Thesis/Author Declaration Form)

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**Title of Thesis: Early Online Graphic Content Exposure and the
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Acknowledgements

I would like to thank my parents for funding this enterprise and my Nannie for her unwavering support in all aspects of my life.

It must also be said that this study has been made infinitely less intimidating through the guidance of my supervisor Dr Robert Fox aka Roy. Who answered every single query I had and without whom I may not have made it past the literature review.

To my friends Eoghan W.W, Chris On-Nights, Dr. Yakub, Prof Dawidek, Alex “Hikikomori” and Dr. Irvine I appreciate the craic which has kept me going over the past 3 years. Two of which were admittedly rather miserable in parts, but we made the best of it. And finally, to Ryan I don’t believe the academic world would allow me to refer to you by your proper title. So, all I can say is Thanks Son.

Abstract

The present study explored for a relationship between early exposure to violent content on the internet with a focus on shock sites and desensitisation to violence. Research has suggested that various forms of media such as violent television, films, and controversially video games may lead to desensitisation to violence. The current study aimed to examine if these suggested relationships extend to violence witnessed through the internet with a focus on internet shock sites. This focus was placed due to both prevalence in prior research and the manner of the content displayed on these easily accessible websites. A total of 114 participants between the ages of 18 and 30 took part in the study.

Findings from the hierarchal multiple regression analysis indicated the primary predictor variables of this study (frequency, intensity and shock site) did not significantly predict desensitisation to violence. However, regression did indicate sex was a significant predictor of variance. The following independent t-test did demonstrate a statistically significant difference in the mean desensitisation scores between males and females, with males having the higher mean scores. Limitations of this study in addition to possibilities for future research are discussed below.

Keywords: internet-violence, desensitisation, shock-sites

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Introduction

Emotional Desensitisation is often defined as a reduced emotional receptivity, possibly leading to the elimination of emotional and behavioural responses as a result of recurring exposure to a stimulus, often violence (Funk et al , 2004; Rule & Ferguson, 1986). It has been suggested that early onset emotional desensitisation may contribute to severe violence in later life (Mrug et al, 2016), a lack of empathy (Mrug, et al, 2015) and increased aggression (Ng-Mak et al, 2002), making potential risk factors such as graphic content, a probable important avenue of research (Adachi & Willoughby, 2011). Moreover, it has been suggested that only violent content results in desensitisation, as repeated viewings of comedic material have not resulted in desensitisation to humour (Krahé et al, 2011).

Emotional desensitisation as a result of media violence is a long established concept and has been documented for decades (David et al, 1979), however, the mediums for violent content have changed over the years (Bushman & Anderson, 2001). From reading newspapers (Scharrer, 2008), to the introduction of television (Cline et al, 1973) and more recently videogames (Brockmyer, 2022) and the internet (Anderson et al, 2017). Additionally access to violent media has become more open as screens have been accepted and children are now often handed tablets and smartphones with unrestricted internet access (Anderson et al, 2015).

The internet has seemingly always been an untamed abyss of information with respect to video or auditory media (Clark & Slotta, 2000), which can be beneficial if explored by individuals with the capacity to navigate it safely. However, the ever-inquisitive mind of a young person (Wrobel & Dillon, 2009) or invasive pop-up adverts (Ey & Glenn Cupit, 2011) may lead children or adolescents onto uncensored news sites or disturbing ‘Shock Sites’, such sites have been known to host extreme graphic content including ‘snuff’ videos (Reynolds, 2009). Snuff videos being disturbing real footage containing death, with videos from

extremist groups performing executions being frequent on such sites (Jackson et al, 2016). Moreover, Jerslev (2001) suggests there exists a peer culture in which daring or peer pressuring results in group exposure to such videos to prove how much an individual or their peers can psychologically handle. Stemming from this the following body of work explores research related to exposure to several forms of violent media and emotional desensitisation to violence.

Newspapers

An early longitudinal study by David & Blankenburg (1972) examined newspaper content among other media from 1925 until 1972. They discovered that 17.6% of all newspaper media over forty-seven years covered violence, with over two violent stories per page on average. However, during the time period, the newspapers were published several exponentially violent events took place, two prominent examples being World War 2 and the Vietnam war. Latterly, Stepp (1998) indicated that criminal news often made up a third of all newspaper stories, additionally violent criminal news was inclined to be shown more regularly than non-violent criminal stories.

Due to the prior mentioned prioritised coverage of violent crime in newspapers (David & Blankenburg, 1972), Scharrer (2008) logically sought to examine if exposure to this material led to desensitization to it. Assuredly the sample size of this study was 476 participants with 7 variables, which appear to be adequately powered (Stevens, 1996). The study found that the more violent newspaper stories a participant was exposed to each week, the more emotionally desensitised the participants became, additionally the participants appeared to become less empathetic as they became less likely to perceive the stories as violent.

While the results of this study are promising it has become very uncommon for adolescents to read newspapers, as stated by Twenge (2018), the American Psychological

Association asserts that as of 2016 this figure was as low as 2%. This figure may have declined even further as of 2023, hence other more relevant media outlets have been studied.

Television

Due to newspapers only containing still images, it may be plausible that television through violent videos such as films, shows or news coverage may produce increased desensitisation to violence. Signorielli et al (2019) state that violence has always been a core part of frequent television viewing, stemming from their examination of the type of content aired in a fifty-two-year period ending in 2015. Interestingly they concluded that although the rate of violence on television has risen and fallen over the decades, the mid-2010s demonstrated the highest ever recorded amount of violence on television (Signorielli et al, 2019).

As suggested by Roberts & Henry (1999) an estimated 50% of adolescents spent over seven hours a day consuming media, the majority of this was television, as of 2010 the average daily time a child spent watching television was roughly 4 hours and 20 minutes (Rideout et al, 2010). Furthermore, Sargent et al (2002) found that around 70% of adolescents had watched at least one out of a selected fifty-one extremely violent films on television. The results of these studies may have demonstrated a likely need to investigate for possible effects of screen violence on emotional desensitisation.

In order to examine for the effects of repeated exposure to violent television on adolescents' emotional responses to violence Strenziok et al (2011) utilised magnetic resonance imaging (MRI) in order to analyse skin conductance responses, brain pattern activation and Granger causality mapping. The participants were repeatedly exposed to violent media clips, which got more aggressive over time.

With respect to skin conductance responses the results indicated a negative correlation, being that the more violent the media was, the weaker the skin conductance

became, which suggested emotional desensitisation taking place (Strenziok et al, 2011).

Additionally, brain pattern activation and Granger causality mapping indicated desensitisation only for the moderate to most violent media clips, indicating that the intensity of the violence in the media may have a varying impact on desensitisation (Strenziok et al, 2011). However, the sample size of the study was twenty-two adolescents, although this may be explained due to the high cost of MRI scans.

Videogames

A further and more recent development in violent media are videogames which have become a part of mainstream entertainment (Gilbert et al, 2018), a Japanese study demonstrated that roughly 41.5% of 1652 random adolescents play more than three hours of videogames per weekday, presumably they may play more on weekend days (Doi et al, 2021). Additionally, the vast majority of videogames contain some form of violence ranging from cartoonish to visceral and realistic, just under half of the games published demonstrate extreme violence (Coyne et al, 2018).

Moreover, due to advances in technology, videogames have become graphically far more realistic, meaning the characters in videogames look almost impeccably human in some modern games (Murphy et al, 2021). In addition to this some modern shooter games attempt to be as realistic as possible in their depiction of violence through animations, sound design and blood/gore through realistic textures (Burkhardt & Lenhard, 2021). Additionally, videogames unlike other forms of media, often require active participation to progress (Polman et al, 2008). In many games this involves voluntary participation in violence to not only progress but to obtain enjoyment (Funk, 2005).

Many studies have been conducted to examine the effects of videogames on emotional desensitisation and aggression, however, there have been conflicting results. In the premier study to examine the effects of videogames on emotional desensitisation specifically,

participants played either a violent or non-violent videogame for a set time and were then exposed to a video demonstrating real-life violence (Carnagey et al, 2007). The researchers found that for violent videogames cohort both heart rate and galvanic skin responses indicated a lower emotional response to the real-life violence stimulus (Carnagey et al, 2007). The study had a large sample size of 257 college students, and the results are presented in an understandable bar chart format, however this method of reporting may lack the detail of a full results table.

Alternatively, a more recent study conducted by Szyck et al (2017) utilised Functional magnetic resonance imaging (fMRI) to explore for a link between emotional desensitisation and long term violent videogame exposure. The researchers utilised fMRI in order to measure for possible long term effects (Szyck et al, 2017), as previous studies focused upon short term desensitisation (Brockmyer, 2015). Upon comparing twenty-eight gamers who self-reported to play violent first person shooting games to twenty-eight participants who did not report playing videogames, the researchers found no evidence of emotional desensitisation during the participants exposure to emotionally driven stimuli meaning that there was no significant difference in the two groups (Szyck et al, 2017). Similar results were found by Kühn et al (2018) who also utilised fMRI to assess participants after playing a violent videogame to a stimulus depicting pain, no evidence of desensitisation was reported by the researchers.

A possible reason for the hypothesis that people who play many hours of violent games not becoming emotionally desensitised may have to do with the brain automatically distinguishing between virtual and real violence (Szyck et al, 2017). A study conducted by Regenbogen et al, (2010) utilised fMRI to explore this hypothesis, intriguingly the researchers found that participants who regularly played violent videogames possessed a greater ability to distinguish between real and virtual violence. This seems logical as non-

gamers simply would not have a history of being exposed to virtual violence to begin with. Additionally, the gamer cohort displayed no evidence of emotional desensitisation to real violence (Regenbogen, 2010), however the sample size of the study was small as it was twenty-two participants.

The Internet

While the current study explores for a relationship between internet violence exposure prior to the age of 18 and desensitisation to violence in young adulthood. It may be prudent to further rationalise why this relationship is worth assessing. A study conducted by Gökçearslan & Seferoğlu (2016) assessed the internet habits of middle school children (n=707). The results of their study suggest 12.16% of participants visited websites that encouraged violence. Whereas 13.72% reportedly visited websites displaying firearms and explosives. However, the researchers did not assess whether the participants actually witnessed acts of violence being committed through a screen.

A large qualitative study conducted by Livingstone et al, (2014) interviewed children and adolescents aged 9 to 16 regarding their views on the internet. The participants were asked a combination of both closed and open-ended questions. One prominent open-ended question was what the participants believed bothered children their age on the internet. The results suggest that 2700 underage participants largely unprompted, declared various forms of violence were reported as risks for people their age. This accounted for 17.5% of the total risks identified. While portions of the violence participants reported were fictional and could be witnessed through television or other media, some participants reported witnessing real footage of suicide, torture and violence toward minors.

Other research conducted by Ybarra et al (2011) assessed the frequency of children's exposure to violence on screens over three years. The study reported 1588 participants aged 10 to 15 and were assessed between 2006 and 2008. The researchers report a sizeable cohort

of participants having visited websites containing violent content, including snuff sites. Indeed, the results suggest that 48.7%, 44.8% and 47.6% of participants reported being exposed to a form of violent content on the internet in 2006, 2007 and 2008 respectively. Relevantly, 4%, 3.5% and 3.7% of these exposures over the three-year period reportedly took place on snuff websites. While a relatively small percentage of participants this percentage represents 151 children who witnessed a real person being killed on the internet, this may suggest a further rationale for exploring for possible psychological effects as a result of such exposure.

Past studies into exposure to violence through media seemingly indicate that graphic films and even repeated exposure to violent stories in newspapers (Scharrer, 2008) and television news (Signorielli et al, 2019), which often censors disturbing content to a degree (Hoffner et al, 1999), may cause emotional desensitisation to violence. However, it would seem virtual violence may not lead to any long term desensitisation, due to the brain being able to distinguish it from real violence (Szycik et al, 2017). Additionally, researchers have noted a substantial number of minors reporting their exposure to violent internet content (Gökçearsan & Seferoğlu, 2016; Livingstone et al, 2014; Ybarra et al 2011). Hence, it may be appropriate to devote research into a possible relationship between young exposure and on screen real-life violence through the internet and emotional desensitisation to violence.

The Present Study

The rationale for this study is based upon decades of research into the relationship between exposure to media violence and emotional desensitisation. Past studies have found that exposure to violence in newspapers, television shows, television news, films and conflictually violent realistic videogames all seemingly lead to an emotional desensitisation to violence (Anderson et al, 2017; Cline et al, 1973; Scharrer, 2008). Moreover, research suggests a substantial number of children encounter uncensored violence on the internet

(Gökçearsan & Seferoğlu, 2016; Livingstone et al, 2014; Ybarra et al 2011). However, there appears to be a gap in the literature with respect to viewing uncensored violent graphic content on the internet at a young age with a focus on shock sites and emotional desensitisation to violence. When taking the huge amount of children with unrestricted or unmonitored internet access into account (Anderson et al, 2015), it seems justified to explore for a relationship between internet graphic and violent content or “shock videos” and emotional desensitisation to violence.

Indeed, the research question for the study is as follows: Is there a relationship between young exposure to real-life graphic violence on the internet and emotional desensitisation to violence? The aim of the research is to determine if there is a relationship between early exposure to graphic real-life internet content and emotional desensitisation to violence. The null hypotheses would demonstrate exposure to violent graphic content on the internet at a young age having none or an insignificant relationship to emotional desensitisation to violence. Whereas the alternative hypotheses would demonstrate exposure to violent graphic content on the internet at a young age having a significant relationship to emotional desensitisation to violence.

Methods

Participants

Participants for this study were recruited through snowball sampling via social media. A QR code in addition to a direct link to the Google Form was distributed through WhatsApp, Discord and Instagram. The initial momentum for the study was gathered through posting the QR and link directly with the request to send it to anyone a person knows over the age of 18. No form of incentivisation other than the knowledge of aiding psychological research was made available to participants. Due to the utilisation of hierarchical multiple regression, it was vital for the number of participants to satisfy both the (Stevens, 1996) and (Tabachnick et al, 2013) criteria. Indeed, as there were three predictor variables in this study a total of 45 participants ($n = 3 \times 15$) or 74 participants ($n = 50 + (3 \times 8)$) respectively. The total number of participants was 114 and were all aged between 18 and 30 years old. As this age range is the only qualifying variable no participants were excluded.

The sample consisted of 71.1% males ($N=81$) and 28.9% females ($N=33$). The sample had a mean age of 21.47 years ($SD = 3.135$) ranging from 18-30 years old. This age range was selected due to home broadband not being available in Ireland until 2002, however there have been shock sites available since 1996. Moreover, the minimum age for the sample was 18 so informed consent can be given for the study, this is vitally important for ethical reasons. As of reporting this study an individual within this age group would have been born between 1992-2004, this would place their childhood and adolescence at a time internet graphic content would be accessible.

Measures

Demographics: Participants were asked to provide their sex (male, female, other) and to input their age.

Frequency and Intensity of Exposure to Internet Violence: To measure the predictor variables participants were asked to answer a series of three Likert scale questions regarding their frequency of exposure and intensity of violence they were exposed to. All questions were answered by ticking the desired box on a scale of 0 – 5. The scale rated internet exposure from none at all to almost every time the individual was online and no visible injury to on screen death respectively. The first question inquired into the frequency of exposure to general real internet violence prior to the age of 18. Following this, the participant was asked to the best of their recollection what the Frequency of exposure to internet Shock Sites prior to the age of 18 was. Finally, the participants were asked to the best of their recollection what is the intensity of violence they were exposed to on the internet, if any. The violence inflicted could have been on a human or animal.

Desensitisation to Violence: The criterion for this study consisted of a modified version of the questionnaire based upon a Desensitization to Violence Scale developed by Galán Jiménez, Sánchez-Armás Cappello & García y Barragán (2019). However, there have been rewordings in the questionnaire as the original was designed to assess young people in juvenile detention. The questions were phrased in a neutral and non-judgmental way as it was not the researcher's intent to insinuate any feelings of wrongdoing in the participants. The scale was developed through prior conducted interviews where repeated themes were highlighted. Again, these questions were answered on a Likert scale rating from 0-5. This study's questionnaire focused on the following: Unease from violence, entertainment from violence, enjoyment of violence, support of the use of violence and if the participant believes violence is a solution to problems. The scales ranged from no unease to negative physical symptoms, no entertainment to encouraging further violence, completely opposed to completely unopposed and never to always, respectively. The responses to these four Likert

scale questions were added together to form a Total Desensitisation to Violence Scale (TDVS).

Design

The study is of non-experimental correlational design hence it will not claim causation, as a Google Form questionnaire was used to gather quantitative data. Based upon this the hypothesis is Non-causal and Non-directional. This is because the researchers simply searched for any association between internet violence with a focus on shock sites at a young age and emotional desensitisation to violence, the direction of any hypothetical correlation was not hypothesised but was examined during analysis. It is felt this is best as this study aimed to fill a gap in the literature, future research may benefit from a more specific hypotheses. The link to the form was distributed to young adults who were most likely third level students via social media and remained answerable for a period of two weeks.

Pilot

Although the questions are heavily based upon prior research conducted by Galán Jiménez, et al (2019), it was felt necessary to conduct a brief pilot study to affirm the scales would result in tangible data. Ten associates of the researcher took part in this pilot study with specific requests for how to answer the questions. This data was then run through SPSS using the same processes used in the full study. The results while expectedly small did indicate the questionnaire would sufficiently address the research question. Additionally, the pilot participants reported an average completion time of 2 minutes. This short completion time was intended to attract a greater number of participants. These results were naturally not included in the main study's data.

Procedure

Following the conclusion of the pilot study in addition to the study receiving ethical approval from the National College of Ireland the survey was posted online. The majority of

participants were recruited via WhatsApp, Discord and Instagram, initially through a direct post in group chats by the researcher. Participants were encouraged to send the questionnaire on to peers, this is confirmed to have occurred in numerous instances which is reinforced by the sample size. The first page of the Google Form consisted of an information page (see Appendix A). This firstly provided a content warning relating to the forms of violence mentioned throughout the questionnaire followed by a disclaimer that no one under the age of 18 could participate. Participants were informed that participation was entirely voluntary, and they had the right to withdraw at any time without penalty in addition to no form of monitoring system being in place to track participation. The information sheet also provided a brief explanation of what participants would do, the lack of a time limit to complete the questionnaire and confirmation of their full anonymity. Finally, the information page provided a mental health service number in addition to a temporary contact email created purely for this study.

Participants were required to tick four boxes relating to different aspects of consent for the study (see Appendix B). It was not possible to proceed to the questionnaire unless these boxes were ticked. All participants consented to the management of their data, that they were at least 18 years old and that they would not hold the researcher responsible for any discomfort felt during the questionnaire. Following this participants were asked to enter demographic information consisting of their age and sex (see Appendix C). Participants were then asked three questions regarding their exposure to internet violence (see Appendix D) in addition to questions relating to desensitisation to violence (see Appendix E). The final page of the survey consisted of a debrief which informed participants of the study's research aim (see Appendix F).

Upon its closure the data from the questionnaire was exported as a Microsoft Excel file, and data relating to the consent form was removed for processing in SPSS. The first

statistical process involved reverse recoding the 'unease from violence' variable so that it could be added to the TVDS. This scale was a sum of the criterion variables. It consisted of the sum of the recoded 'unease from violence', 'entertainment from violence', 'support for the use of violence' and 'violence as an answer' variables. The initial analysis involved processing the relevant data to examine for any possible violation of the assumptions of normality, linearity, homogeneity of variance and multicollinearity. Following this Hierarchical Multiple Regression was used in order to rule out the effect of demographic variables on TVSD, if any. Following this, the predictor variables 'frequency of internet violence', 'frequency of shock videos' and, intensity of violent internet videos watched' will be examined to see if they had a statistically significant effect on the TVSD. Following this an independent-samples t-test was conducted to explore for any differences in means between males and females in respect to the TVSD scale.

Results

Descriptive Statistics

Full descriptive statistics are available for the frequency of the studies samples sex are available in Table 1 below. The study had a total sample size of 114 participants with the majority of the sample consisting of male participants (N=81).

Table 1

Frequency data for sex.

Variable	Frequency	Valid%
Sex		
Male	81	71.1
Female	33	28.9

The study measured a total of 4 predictive continuous variables, including age, frequency of internet violence exposure (Frequency), frequency of exposure to shock sites (Shock Sites) and intensity of internet violence a participant was exposed to (Intensity). In addition to the criterion variable, Total Desensitisation to Violence Scale (TDVS). The histogram indicated that Frequency and Shock Sites were normally distributed, whereas the majority of participants were 21 or younger resulting in a large positive skewness. With respect to Intensity the histogram suggested a negative skewness. Additionally, both Age and Frequency were indicated to have 2 and 6 outliers respectively. The full descriptive statistics for these variables are available below in Table 2 and Table 3.

Table 2

Descriptive statistics and reliability of Age, Frequency, Shock Sites and Intensity.

Variable	<i>M</i> [95% CI]	<i>SD</i>	Range
Age	21.47 [20.89, 22.06]	3.14	12
Frequency	2.69 [2.46, 2.92]	1.24	5
Shock Sites	2.11 [1.89, 2.33]	1.19	5
Intensity	3.54 [3.27, 3.80]	1.44	5
TDVS	7.43 [6.83, 8.10]	3.28	19

Table 3

Further descriptive statistics and reliability of Age, Frequency, Shock Sites and Intensity.

Variable	Median	Maximum	Minimum	Skewness	Kurtosis
Age	20	30	18	1.2	0.59
Frequency	3	5	0	-0.23	-0.52
Shock Sites	2	5	0	0.18	-0.63
Intensity	4	5	0	-0.53	-0.96
TDVS	7	19	0	0.62	1.39

Inferential Statistics

Hierarchical multiple regression analysis was performed to investigate whether Frequency of internet violence exposure, frequency of internet shock site exposure and intensity of violence witnessed predict levels of desensitisation to violence, after controlling for the influence of age and sex. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. The correlations between the predictor variables (Sex, Age, Frequency, Shock Sites and Intensity) were assessed and r

values ranged from -0.053 to 0.633. 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 data were suitable for examination through multiple regression analysis. Full correlation data is provided in table 4 below.

Table 4

Correlation Data for Hierarchical Multiple Regression Analysis.

Variable	TDVS	Sex	Age	Frequency	Shock Sites	Intensity
TDVS	1.00	-.309	-.100	.223	.141	.193
Sex	-.309	1.00	-.053	-.092	-.057	-.157
Age	-.100	-.053	1.00	-.143	.064	-.225
Frequency	.223	-.092	-.143	1.00	.633	.631
Shock Sites	.141	-.057	-.064	.633	1.00	.464
Intensity	.193	-.157	-.225	.631	.464	1.00

In the first step of the hierarchical multiple regression, two predictor variables were entered: age and sex. This model was statistically significant ($F(2, 111) = 6.81, p = 0.002$) and explained 10.9% of the variance in total levels of desensitisation to violence, see Table 5 below for full details. After the entry of Frequency, Shock Sites and Intensity at Step 2, the total variance explained by the model was 14.2% ($F(5, 108) = 3.57, p = 0.005$). The introduction of Frequency, Shock Sites and Intensity scores explained an additional 3.3% of the variance in total desensitisation to violence, after controlling for age and sex; this change was not statistically significant ($R^2 \text{ Change} = 0.033; F(3, 108) = 1.37, p = 0.256$).

In the final model, out of the four predictor variables only sex was found to uniquely predict levels of desensitisation to violence to a statistically significant degree. Sex was a negative predictor of total desensitisation to violence scores and was also the strongest predictor in the model ($\beta = -.30$; $p = 0.002$). See Table 5 for further details and APPENDIX G for full detail of the analysis.

Table 5

Hierarchical regression model predicting total desensitisation to violence scores.

Variable	R^2	R^2	B	SE	β	t	p
	<i>Change</i>						
Step 1	.109*						
Sex			-2.27	0.65	-0.32	-3.52	.001
Age			-0.12	0.09	-0.12	-1.30	.195
Step 2	.142	.033					
Sex			-2.13	0.65	-0.30	-3.26	.002
Age			-0.91	0.01	-0.09	-0.95	.345
Frequency			0.45	0.35	0.17	1.29	.199
Shock Sites			0.01	0.32	0.01	0.02	.986
Intensity			0.04	0.27	0.02	0.15	.881

* *Note:* R^2 = R-squared; R^2 Change = Change in R-squared; β = standardized beta value; B = unstandardized beta value; SE = Standard errors of B ; CI 95% (B) = 95% confidence interval for B ; $N = 114$; Statistical significance: * $p < .01$.

In order to further explore the one significant predictor in this study an independent samples t-test was conducted to explore differences in mean total desensitisation to violence scores between males and females. Preliminary analyses were conducted to ensure no

violation of the assumptions of normality and homogeneity of variance. The difference between males ($M = 8.07$, $SD = 3.27$) and females ($M = 5.85$, $SD = 2.74$) was statistically significant, $t(112) = 3.44$, $p = .001$. The magnitude of differences in the means (mean difference = 2.23, 95% CI [0.95, 3.51]) was medium (Cohen's $d = 0.71$). Results therefore indicated a statistically significant difference in mean desensitisation to violence scores between males and females.

Discussion

The current study aimed to investigate the relationship between early exposure to internet violence, with a focus on shock site exposure and emotional desensitisation to violence. It also examined the mean difference between male and female participants in regard to their level of desensitisation to violence. Previous findings have suggested that exposure to violence in newspapers, television shows, television news, films leads to an emotional desensitisation to violence whereas the research for violent realistic videogames is conflicting (Anderson et al, 2017; Cline et al, 1973; Scharrer, 2008). Indeed the majority of past research seems to indicate a positive relationship between violent media exposure and desensitisation to violence. Indicating the more violent media consumed the higher the risk for desensitisation to violence.

However, as this study addressed a gap in the literature with regards to internet shock site exposure a directional hypothesis was not assumed for this study. The hierarchal multiple regression analysis for this study suggested that neither frequency or intensity of violence exposed and more pressingly shock site exposure did not significantly predict desensitisation to violence. These findings do not appear to be consistent with prior research such as the work of Scharrer (2008) and Strenziok et al (2011). Indeed, sex was the only significant predictor of variance in both models. With the male cohort demonstrating a significantly higher mean level of desensitisation to violence than the female cohort. This may be consistent with the findings of Kliewer (2006) who suggests males may be more affected by exposure to violence due to more reduced access to internal and external coping mechanisms than females.

With regards to the second model exclusive variables, frequency, shock sites and intensity there are numerous possibilities for why these variables lack significant prediction

which conflicted with previous research. As despite this study filling a gap in the literature it is still in the same vane as prior mentioned literature which suggested very different results. It may be plausible that several individual factors affect a person's tolerance for media violence (Swing & Anderson, 2014). Indeed, certain personality traits such as impulsiveness (Prot et al, 2017), sensation-seeking (Stoolmiller, 2010), and emotional dysregulation (Huesmann et al, 2017) have been linked to a greater risk of desensitisation to violence. Prior experiences of the participants may also contribute to explaining the results of this study. As individuals with prior experiences of violence or traumatic events may be more likely to become desensitized to violence (Quinn et al, 2017). In other words, some participants may have been desensitized to violence prior to more recent violence exposure (Thomas, 1977) such as internet or shock sites, reinforcing the idea of correlation not equating to causation. Alternatively, some individuals with a history of violence exposure resulting in a form of trauma may be more affected by violent media content (Wojciechowski, 2020).

Additionally, the age and level of maturity of an individual during their exposure to internet violence may account for some variance, as the stage of brain development may impact susceptibility to violence (Wallenius & Punamäki, 2008). Moreover, mental health conditions, such as depression, anxiety (Fanti et al, 2009), and post-traumatic stress disorder (Prot & Gentile, 2014), may affect an individual's response to violent content on the internet. Furthermore, the quality of exposure to violence on the internet may also have played a role. For example, repeated exposure to low-quality or poorly executed violent content may not have the same impact as repeated exposure to high-quality, well-made violent content (Browne & Hamilton-Giachritsis, 2005). It may also be plausible that some participants who have personal relationships with individuals who have experienced trauma possibly resulting in co-victimisation, may react differently to internet violence than those who do not (Andrews et al 2003).

It is also plausible that cultural factors, such as the social norms and values surrounding violence, may have had an influence on certain individuals' responses to violent content on the internet (Kodaira, 1998). Additionally emotional processing and regulation may vary among participants. As some individuals may be more effective in processing and managing their emotional responses to violent internet content, which can protect against desensitization (Carnagey et al, 2007). Some additional variances in participant response may be partially explained by the participant having a strong support system. Such as family and friends who encourage nonviolent behavior, this may help mitigate the desensitisation effects of violent internet content (Hammack et al, 2004). In summary, there are numerous factors that may have altered the results of the study this may partially explain a lack of strong linear correlation between the predictor and criterion variables.

Although the predictor variables of this study did not significantly predict desensitisation to violence. The implications of the mean scores of these scales may be of concern, especially to parents of children who have unrestricted to access the internet. Indeed, the average participant reported the following: moderate frequency of exposure to internet violence, multiple instances of shock site content exposure and moderate to life threatening injuries being witnessed. All of these reported exposures took place under the age of 18. This data may reinforce the already seemingly necessary requirement for parental internet restrictions (Chng et al, 2015).

Despite the sample size of the study possibly being a strength as it satisfies both the Stevens (1996) and Tabachnick et al (2013) criteria. In addition to the age of participants being relevant to the research question, there were several limitations within this study. Firstly, the sample was majority male (N=81), the study may have benefitted from a more diverse demographic. Additionally, there was little overall variance in the age of participants, few were above 20 years of age. Furthermore, due to the subject matter of the study it is

plausible certain age qualifying people may not have taken part or not completed the surveys. This may have somewhat impacted sample size and diversity. A more diverse age range might also provide somewhat more applicable results. Due to the previously mentioned plasticity of developing brains, a 12-year-old and a 16-year-old may handle violence differently (Wallenius & Punamäki, 2008). It may also be prudent to ask participants to recall the age they were when they were first exposed to internet violence.

With regard to the scales used in the study, the validity has not been thoroughly established. The short length of the survey may be considered a strength as it may attract more participants, however it may not be thorough enough to assess the complexity of the subject matter. Future research may benefit from a more commonly utilised form of assessment. In terms of the assessment there may be a slight lack of validity in self report measures, assumedly inaccurate answers may have been provided unintentionally. Moreover, future studies may benefit from a larger and more encompassing scale to measure desensitisation to violence in greater depth. In addition, due to this study being of cross sectional design no casual relationship can be implied by the results. Although due to the study inquiring into violence exposure during childhood it may prove difficult to examine the relationship between childhood internet violence exposure and adult desensitisation experimentally.

Conclusion

Overall, the findings of this study do not provide statistically significant evidence that a relationship between internet violence with a focus on shock sites predict desensitisation to violence. Although the results of the independent t test does suggest that males may be more prone to desensitisation to violence than females. These findings do conflict with previous research which suggests various forms of violent media does result in desensitisation. Future research may benefit from a more expansive and inclusive form of

assessment as desensitisation to violence is a complex psychological state (Funk, 2006). Although the descriptive statistics of this study do suggest that the average participant of study was exposed to a significant level of internet violence prior to the age of 18. Suggesting the necessity for parents to put safeguards in place as while this study does not suggest desensitisation, future research may yet do so. In addition, future research may uncover other ways in which uncensored violent internet content may have a psychological effect on young people. As previous studies have suggested early exposure to media violence may lead to aggression (Anderson et al, 2003; Freedman, 2002; Huesmann & Taylor, 2006), fear (Cantor & Riddle, 2014), anxiety (Madan et al, 2014) and in certain situations negative attitudes towards women (Barack et al, 1999). These outcomes may suggest the importance of future research within this area.

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Appendices

Appendix A - Information Page

PLEASE NOTE THE FOLLOWING QUESTIONNAIRE CONTAINS MENTION OF TOPICS SUCH AS GORE, VIOLENCE AND INTERNET SHOCK VIDEOS. PLEASE USE YOUR OWN DISCRETION IN REGARDS TO PARTICIPATION.

ADDITIONALLY, ANYONE UNDER THE AGE OF 18 MAY NOT TAKE PART IN THIS QUESTIONNAIRE, THIS IS TO ENSURE PROPER CONSENT RIGHTS. PLEASE NOTE ANYONE OVER THE AGE OF 30 DOES NOT QUALIFY TO TAKE PART IN THE QUESTIONNAIRE FOR SAMPLING REASONS.

Participation:

Any voluntary participants in this questionnaire please note: You have full rights to withdraw at any time prior to the submission of your data as following this it will be impossible to determine any participants data, participants are in no way legally or contractually bound to continue the questionnaire once started. There is no penalty of any kind for not completing the questionnaire. There is no system in place that can monitor who has opened this document so your full privacy will be maintained.

Subject Matter:

The following questionnaire will ask you to answer questions related to your exposure to internet violence and shock videos in addition to various questions related to your sensitisation to violence. These will be answerable in a scale format.

Anonymity:

Additionally, please note that your anonymous answers may be published publicly in a processed format in the results section of this study. **Any raw answers will be kept entirely secure and private by the researcher for a maximum of 5 years to comply with NCI policy. During this time, it is possible the data may undergo secondary analysis by someone other than the researcher, the data will be de-identified completely.** The researcher will take full responsibility for all data once submitted and will ensure its complete security for the duration of the study.

Time Limit:

There is no time limit for this questionnaire, the questionnaire will close 2 weeks after its publication. All participants of this questionnaire will be entirely anonymous for its duration.

Mental Health Support And Contact Information:

Please note that some questions may prompt memories of internet violence that may disturb you. The following link is to Mental Health Ireland, please call the appropriate hotline for you if you feel in any way negative upon completion or partial participation in this questionnaire. <https://www.mentalhealthireland.ie/get-support/>

If you have any questions you can contact the researcher at finallyearprojectx20320741@gmail.com.

Please answer all questions honestly or to the best of your abilities if your intent is to submit this document.

BEFORE PROCEEDING TO THE FIRST QUESTION PLEASE FILL OUT THE FOLLOWING BY TICKING THE BOX BESIDE EACH STATEMENT. YOU WILL NOT BE ABLE TO ADVANCE TO THE QUESTIONNAIRE UNLESS CONSENT IS PROVIDED.

Appendix B - Consent Form

The method proposed for this research project has been approved in principle by the Departmental Ethics Committee, which means that the Committee does not have concerns about the procedure itself as detailed by the student. It is, however, the above-named student's responsibility to adhere to ethical guidelines in their dealings with participants and the collection and handling of data. **Please tick the box if you understand and agree with this information.**

I understand that my data will be retained and managed in accordance with the NCI data retention policy, and that my anonymised data may be archived on an online data repository and may be used for secondary data analysis. No participants data will be identifiable at any point.

I am between 18-30 years old.

I have thoroughly read the above disclaimers and understand them, by taking part in this questionnaire I will not hold the researchers responsible for any discomfort felt during this questionnaire.

Appendix C – Demographic Questions

Age _____

Sex: M F Other

Appendix D – Predictor Variable Questions

Q1: To the best of your recollection what was your Frequency of exposure to general internet violence prior to the age of 18.

- 0. None At All**
- 1. Very Rarely (Perhaps once or Twice)**
- 2. A Few Times (Between 3-10 times)**
- 3. Moderately**
- 4. Often**
- 5. Almost or Always Every Time You Were Online**

Q2: To the best of your recollection what is the Frequency of exposure to internet Shock Sites prior to the age of 18.

- 0. Never**
- 1. Very Rarely**
- 2. A Few Times**
- 3. Moderately**
- 4. Often**
- 5. Almost or Always Every Time You Were Online**

Q3: To the best of your recollection what is the intensity of violence you were exposed to on the internet, if any. The violence inflicted may be on a human or animal.

- 0. None**
- 1. Violence Shown but no visible injuries (A fist fight for example)**

2. **Light injuries visible (Minor cuts and/or bruises)**
3. **Moderate visible injuries (Large cuts and/or heavy bruises, visible bleeding)**
4. **Life Threatening injuries (Amputations, immense bleeding or burning)**
5. **Death (Snuff videos for example)**

Appendix E – Criterion Variable Questions

Q4: To the best of your ability, select the answer that best describes your current unease to witnessed violence through any medium.

0. **No Unease (No emotional reaction)**
1. **Little Unease (An insignificant emotional reaction)**
2. **Moderate Unease (Some concern for those involved in violence)**
3. **Considerable Unease (Greatly concerned for those involved in violence)**
4. **Great Unease (Noticeable physical reaction such as increased heart rate)**
5. **Uneased to an extent which manifests physical symptoms such as nausea.**

Q5: To the best of your ability, select the answer which best describes any feelings of entertainment derived from violence since turning 18. Boxing and violent films for example.

0. **No entertainment/ Repulsed by violence.**
1. **Little Entertainment (Insignificant positive emotional response)**
2. **Moderate Entertainment (Noticeable positive emotional response)**
3. **Considerable Entertainment (Visible enjoyment such as smiling)**
4. **Great Entertainment (more violence is eagerly anticipated)**
5. **Entertained to such an extent more violence is encouraged.**

Q6: To the best of your ability select the answer which best describes your support for the use of violence in general.

0. **Completely Opposed**
1. **Strongly Opposed**
2. **Moderately Opposed**
3. **Somewhat Opposed**
4. **Insignificantly Opposed**
5. **Completely Unopposed**

Q7: Do you believe that violence is ever an answer to problems faced?

- 0. Never**
- 1. In Specific Situations but very rarely**
- 2. Not Often**
- 3. Often**
- 4. Very Often**
- 5. Always**

Appendix F – Debrief Sheet

The questionnaire you have completed is part of a 3rd year undergraduate final year project in which the aim is to study for possible association between violent uncensored internet content, primarily shock videos to emotional destination to violence. The processed data will be presented and submitted to the National College Of Ireland.

The following link is to Mental Health Ireland, please call the appropriate hotline for you if you feel in any way negative upon completion of this questionnaire.

<https://www.mentalhealthireland.ie/get-support/>

**PLEASE SHARE THIS QUESTIONNAIRE WITH AS MANY QUALIFYING
INDIVIDUALS AS POSSIBLE, VIA SOCIAL MEDIA.**

THANK YOU.

Appendix G – Hierarchal Regression Analysis

Coefficients^a

Model		Unstandardized Coefficients		Standardized	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	12.984	2.239		5.798	.000	8.547	17.421					
	Sex	-2.271	.645	-.316	-3.518	.001	-3.550	-.992	-.309	-.317	-.315	.997	1.003
	Age	-.122	.094	-.117	-1.304	.195	-.308	.064	-.100	-.123	-.117	.997	1.003
2	(Constant)	10.754	2.633		4.085	.000	5.535	15.972					
	Sex	-2.125	.652	-.295	-3.257	.002	-3.418	-.831	-.309	-.299	-.290	.966	1.035
	Age	-.091	.096	-.087	-.949	.345	-.282	.099	-.100	-.091	-.085	.938	1.066
	Q1 Frequency	.454	.351	.171	1.292	.199	-.242	1.149	.223	.123	.115	.454	2.201
	Q2:ShockSites	.006	.321	.002	.018	.986	-.630	.642	.141	.002	.002	.590	1.695
	Q3 Intensity	.041	.270	.018	.151	.881	-.495	.576	.193	.014	.013	.564	1.774

a. Dependent Variable: TDVS

Model Summary^c

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.331 ^a	.109	.093	3.12103	.109	6.812	2	111	.002
2	.377 ^b	.142	.102	3.10561	.033	1.368	3	108	.256