



BSc in Psychology

The Effect of Sexual Abuse on Self-injurious Behaviour Among Adolescents Girls and Boys: The Mediating Factor of Self-Esteem

June, 2021

Student: Gyða Einarsdóttir

ID number: 090299 – 2049

Foreword

Submitted in partial fulfillment of the requirement of the BSc Psychology degree, Reykjavik University, this thesis is presented in the style of an article for submission to a peer-reviewed journal.

This thesis was completed in Spring of 2021 and may therefore have been significantly impacted by the COVID-19 pandemic. The thesis and its findings should be viewed in light of that.

Abstract

The aim of this study was to examine the mediating effect of self-esteem between experience of sexual abuse and the development of self-injurious behaviour, the difference between boys and girls was also examined. Previous studies have shown that sexual abuse is rather frequent in modern society and can have long-term health consequences for both boys and girls. According to studies, childhood sexual abuse has been linked to the development of self-injurious behaviour and low self-esteem in adulthood. The data for this study were collected by Icelandic Centre for Social Research and Analysis “Youth in Iceland 2018” A randomly selected sample of 2,051 adolescents was used in this study. The results showed that self-esteem among the adolescents was lower if they had been sexually abused compared to those who had not been sexually abused. People with lower self-esteem showed a higher incidence of self-injurious behaviour. The findings support previous studies, and it can be concluded that self-esteem can play a role in explaining the connection between sexual abuse and self-injurious behaviour. This information can be used to look for ways to support those who have been victims of sexual abuse and help them reclaim their power.

Keywords: Sexual abuse, self-esteem, and self-injurious behaviour

Útdráttur

Markmið þessarar rannsóknar var að rannsaka miðlunaráhrif sjálfsálits milli reynslu af kynferðis-öfbeldi og þróun sjálfsskaðandi hegðunar, ásamt því að skoða hvort það sé munur milli stráka og stelpna. Fyrri rannsóknir hafa sýnt að kynferðisöfbeldi er frekar algengt í nútímasamfélagi og getur haft langvarandi áhrif á heilsu meðal bæði stráka og stelpna. Samkvæmt rannsóknnum hefur kynferðisöfbeldi í barnæsku verið tengt við þróun á sjálfsskaðandi hegðun og lágt sjálfsálit á fullorðinsárum. Notast var við gögn frá Rannsóknnum og greiningu úr spurningarlistanum „Ungt fólk á Íslandi 2018“. Í þessari rannsókn var notað handahófskennt úrtak sem samanstóð af 2,051 unglíngum. Niðurstöðurnar sýndu að sjálfsálit meðal unglíngna var lægra ef þau höfðu orðið fyrir kynferðisöfbeldi samanborið við þá sem höfðu ekki orðið fyrir kynferðisöfbeldi. Þeir sem voru með lægra sjálfsálit sýndu hærri tíðni af sjálfsskaðandi hegðun. Niðurstöður þessarar rannsóknar styðja fyrri rannsóknir og það má draga þá ályktun að sjálfsálit spili hlutverk í að útskýra tengslin á milli kynferðisöfbeldis og sjálfsskaðandi hegðunar. Þessarupplýsingar geta verið notaðar til að finna leiðir til að styðja þolendur kynferðisöfbeldis og hjálpað þeim að eindurheimta vald sitt.

Lykilhugtök: Kynferðisöfbeldi, sjálfsálit og sjálfsskaðandi hegðun

The Effects of Sexual Abuse on Self-injurious Behaviour Among Adolescents Girls and Boys: The Mediating Factor of Self-Esteem

Abuse in childhood can have negative effects on people. Many studies have shown that there is a negative correlation between sexual abuse in childhood and self-esteem (Arboleda et al., 2011; Lam, 2015; Priebe et al., 2010). Maltreatment is a general term for several types of abuse that children experience. The main types of maltreatment against children are physical, emotional and sexual abuse. Physical abuse can be defined by actions and consequences where the act involves a manifestation such as kicking, pushing, or tweaking, resulting in visible injuries to the child. Sexual abuse involves various sexual acts committed with or against a child. Whether it is with or without the consent of a child, it is considered sexual abuse if the child has not reached the age of majority (Heim et al., 2000). Emotional abuse is a type of abuse without physical contact and involves great destruction of the individual and his or her person, humiliation, threats, ignoring or calling bad names (Thompson & Kaplan, 1996). Self-esteem is a person's sense of their self-worth or value in society, an important concept that falls under self-image (Santrock, 2016). A study by Arboleda and colleagues (2013) revealed that girls who have suffered sexual abuse have lower self-esteem than girls that have not (Solomon & Francoise, 2019). As such, any form of maltreatment threaten the physical, mental and social well-being of those who fall victim to it and therefore the topic needs to be studied excessively (Teten et al., 2009).

Sexual abuse and low self-esteem

Childhood abuse has been shown to correlate significantly with low self-esteem and with the repetition of self-injurious behaviour (Wang et al., 2020). Children that have been sexually abused are known to exhibit a variety of behavioural, social, physical, and psychological problems (Whitaker et al., 2008). A study by Priebe et al. (2010) examined the relations between psychosocial health and sexual abuse. The results showed that girls who

have been sexually abused had lower self-esteem and more emotional problems compared to non-abused girls. Studies have shown that children that have a sexual abuse history are more likely to have low self-esteem in adulthood. Sexual abuse often has very serious consequences for people many years after the abuse. People with sexual abuse experience often have a higher degree of anxiety and depression than non-victims as well as having self-esteem issues (Brayden et al., 1995; Mullen et al., 1996). Women with a history of both sexual and physical abuse are more likely to live with poor physical and mental health than women who have not experienced abuse, including several physical ailments and depression (Bonomi et al., 2008).

The same goes for children. Low self-esteem is usually common among children who have experienced some type of abuse. Abuse against children can cause them to adopt negative views of themselves, others, and the future. They often struggle with behavioural and/or social problems and are also more likely to believe that they are bad, inherently unworthy, or flawed (Bolger et al, 1998).

Sexual abuse and self-injurious behaviour

A study by Glassman and colleagues (2007) reported that emotional and sexual abuse is a predictor of self-injurious behaviour. The result indicates that different form of maltreatment in childhood is linked with self-injurious behaviour and according to this study, sexual abuse is associated with self-injurious behaviour.

Several studies have demonstrated a link between childhood sexual abuse and self-injurious behaviour later in life. Individuals who have childhood sexual abuse are more likely to exhibit self-injurious behaviour compared to individuals that have not experienced sexual abuse. Therefore, childhood sexual abuse is a risk factor for self-injurious behaviour (Weierich & Nock, 2008; Anderson et al., 2002; Bergen et al, 2003)

In a study conducted on University students in Turkey (2005) the prevalence of sexual abuse associated with self-injurious behaviour was high where 28% of the participants reported at least one type of sexual abuse in their childhood. About 7% of people in the study reported that they have attempted to kill themselves and 42% of the students stated that they have suicidal thoughts last 12 month or lifetime. From this it can be inferred that the lives of people with childhood sexual abuse experiences are at risk; sexual abuse can be life threatening (Eskin et al., 2005).

Low self-esteem and self-injurious behaviour

Self-injurious behaviour is a common health problem around the world where 17.6% of adolescents in the United State and 24,.9% in China suffer from self-injurious behaviour. A large study on adolescents in China examined the relationship between self-esteem, childhood maltreatment, and self-injurious behaviour. The results showed that low self-esteem may affect the incidence of self-injurious behaviour in adolescents (Wang et al, 2020).

Self-injurious behaviour is commonly defined as self-inflicted damage which includes thoughts or behaviours such as cutting, burning, or hitting oneself (Wang et al, 2020). McGee and colleges (2001) found that low self-esteem promotes self-injurious behaviour among boys, this also applied to girls, but to a lesser degree. A systematic review of seventeen studies on the association between low self-esteem and non-suicidal self-injurious behaviour demonstrated a consistent pattern: the higher the self-esteem, the lower the rate of self-injurious behaviour. However, this does not mean that the relationship is simple. On the contrary. There are many factors that influence the relationship between low self-esteem and self-injurious behaviour e.g. in both clinical and non-clinical populations (Forrester et al., 2017).

Gender differences

A study on the sexual exploitation of children by Almuneef's study (2019) found that child sexual abuse has been related to negative health outcomes later in life. A study of 10,156 participants over eighteen years of age examined the link between sexual abuse in childhood and the possibility of development of mental health disorders later in life. While the results demonstrate a link between child abuse and later onset of mental health disorders the strength of the relationship varies by gender. Women who were sexually abused in childhood are more likely than men to suffer from anxiety, depression, and other mental illness in their adulthood.

Boys are prone to vent anger outward and harm others while girls are more likely to vent anger inward and harm themselves (Tong et al., 1987; Valente, 2005). Furthermore, victims of sexual abuse are more likely than non-victims to score higher on depression- and anxiety scales and lower on self-esteem scales (Al-Fayez et al., 2012).

Childhood maltreatment was positively correlated with the frequency of self-injurious behaviour and negatively correlated with self-esteem. Higher self-injurious behaviour frequency was correlated with lower self-esteem. The results showed that self-esteem mediated the relationship between maltreatment in childhood and self-injurious behaviour. Research has shown that maltreated individuals can develop low self-esteem and numerous studies have shown a link between low self-esteem and self-injurious behaviour (Wang et al., 2020; Asgeirsdottir et al., 2011).

Current study

As has been demonstrated, several studies have established an association between sexual abuse, low self-esteem and self-injurious behaviour, however to some extent the relationship seems to vary by gender. While sexual abuse is likely to reduce self-esteem and increase self-injurious behaviour in both girls and boys, research shows that it effects girls more than boys, or at least in a more direct way. Self-esteem is often considered a mediator

variable between sexual abuse in childhood and the development of self-injurious behaviour later on (Asgeirsdottir et al, 2011; Wang et al., 2020). This present study aims to explore the relationship between sexual abuse, self-esteem and self-injurious behaviour among boys and girls and proposes that self-esteem mediates the effect of sexual abuse on self-injurious behaviour when controlling for gender.

The hypotheses that were put forward were:

(1) Adolescents with sexual abuse experience have lower self-esteem in general than adolescents who have not been sexual abused.

(2) There is a significant relationship between childhood sexual abuse experience and low self-esteem in both boys and girls.

(3) There is a relationship between sexual abuse and self-injurious behaviour that can be explained partly through self-esteem as a mediation.

Method

Participants

The present study uses pre-collected data from a cross-sectional nationally representative data from The Icelandic Centre for Social Research and Analysis (ICSRA). The participants come from a national population of all secondary school students in Iceland in 2018, a total number of 10,259. From this dataset, a randomly selected sample of 2,051 participants were used in this study, 50.1% girls (N = 1,039) and 48.1% boys (N = 997), between the age of 15-19. The participants in the study did not get any payment or reward for their participation.

Measures

Gender. The participants were asked about gender and they only had two response options, where 0 was coded for boys and 1 was coded for girls.

Sexual abuse. There are five questions measuring sexual abuse of varying severity: The questions were: "Someone exposed him/herself to indecently toward you", "Someone touched your body, excluding genitals, in an unbecoming way", "Someone touched your genitals", "Someone strained, persuaded or forced you to touch his/her genitals" and "Someone strained, persuaded or forced you to have intercourse". The answers options to the questions were "Yes" and "No". Participants who answered yes (yes = 1) to at least one of the five questions were coded as having experienced sexual abuse while participants who answered no to all questions were coded as not having experienced some form of sexual abuse. The sexual abuse variable is therefore used as a category variable that takes the values 0 and 1. A study by Asgeirsdottir et al (2011) is a precedent that is being followed to measure sexual abuse experience.

Self-esteem. To measure self-esteem, 10 items from the Rosenberg Self-Esteem scale were used (Rosenberg, 1965). The question to measure self-esteem was "How well or badly do you think the following statements apply to you". The following questions are examples that were used to ask how well the factors apply to the participants: "I find myself at least as worthy as other people", "I think I have a lot of good qualities" and "When it comes together I think I am a failure". The responses options were on a four-point Likert scale, where the higher you applied on the scale the higher is your self-esteem. 1 = "Applies very poorly to me," 2 = "Applies rather poorly to me," 3 = "Applies rather well to me," 4 = "Applies very well to me." All ten items were computed into scale variable for the analysis. The Rosenberg self-esteem scale has been used to measure self-esteem and showed high reliability in other studies (Evans & Smokowski, 2015; Wang et al., 2020; Eklund et al., 2018). The Cronbach's alpha value for the self-esteem scale in this study was 0,91 which is high reliability.

Self-injurious behaviour. To measure self-injurious behaviour the participants were asked if the following assertions apply to them: "In my lifetime, I have considered

committing suicide” and “In my lifetime, I have made an attempt to commit suicide.” The participants were asked to rate each question on a 5-point scale where 0 = “never,” 1 = “once,” 2 = “twice,” 3 = “3-4 times,” 4 = “5 times or more.” The two variables were computed into a scale variable, ranging from 0 – 8. The Cronbach’s alpha value for self-injurious behaviour in this study was 0.83 which is a little higher than was found in another study (Sigfusdottir et al., 2008) which is considered reliable.

Procedure

The data were collected by The Icelandic Centre for Social Research and Analysis (ISCRA). The study from *ISCRA* consisted of 32 pages questionnaires with 83 questions. The questionnaire is made of professionals and the scales are most often used to make sure the results are valid (Pálsdóttir et al., 2017). The questionnaire was sent to every secondary school in Iceland and the questions related to social background, culture, lifestyle and self-esteem. On the day the study was conducted, all the students who attended school were asked to participate in the study. The teacher surrendered the questionnaires to all the students. The students were asked to answer the questions to their best of their knowledge, but they were notified that they were not required to answer all the questions and they were able to quit in the study at any time. The students were told that the study was anonymous so they should not write any personal information such as name or ID. When participants had finished the questionnaire, they were asked to insert their questionnaire into a blank envelope and give them to their teacher. Due to sexual abuse and self-injurious behaviour variables, which are vulnerable, permission from the National Bioethics Committee to use these variables in the study was applied for.

Data analysis

In this research study the statistical software IBM SPSS in the 27th edition was used to analyse the data. Descriptive statistics were performed for sexual abuse, physical abuse, self-

esteem, and self-injurious behaviour. The independent variables in the study were gender and sexual abuse, the dependent variable was self-injurious behaviour and self-esteem was the mediator. The Pearson's chi-square test was used to see whether there was a connection between sexual abuse and gender. Independent samples t-test was used to compare and estimate the differences between self-esteem and self-injurious behaviour by sexual abuse and for physical abuse for the total sample, as well as for boys and girls separately.

In accordance with Baron and Kenny's method for testing mediation (1986), 3 linear regression analyses were conducted to explore if self-esteem mediates the effect of sexual abuse on self-injurious behaviour for both genders. The *PROCESS* tool was used to assess the mediation model for the whole study (Hayes, 2013). 5000 bootstrap samples were used to assess the confidence interval for the indirect impact of self-esteem.

Results

The number and percentages of participants who reported sexual abuse are outlined in table 1. There were 29.2% ($N = 605$) of the adolescents that reported having experienced some type of sexual abuse. Majority of boys (80,7%) and girls (62,7%) in the sample have never been exposed to sexual abuse as it is defined in this study, however abuse is more common among the girls. Chi square test of independence indicated a significant difference in sexual abuse exposure by gender, $X^2(1, N = 2.036) = 81.691, p < .001$. The distribution of sexual abuse by severity 8.3% reported least severe abuse, 7.5% severe abuse and 13.5% very severe abuse. The distribution of sexual abuse by severity was higher in all severity for girls.

The range for self-esteem among the adolescents was high ($M = 30.77$) and the self-injurious behaviour was rather low ($M = 0.37$). The self-esteem among girls was lower than self-esteem among boys on average. Girls showed on average more self-injurious behaviour than boys.

Table 1

Number and percentages of boys and girls who had been sexually abused.

	Boys		Girls		Total	
	N	%	N	%	N	%
Sexual abuse						
Yes	805	80.7%	651	62.7%	1,456	71.5%
No	192	19.3%	388	37.3%	580	28.5%

Note. *N* = Number of participants

Table 2

Descriptive statistics and correlation for self-esteem and self-injurious behaviour.

Variable	<i>Self-esteem</i>	<i>N</i>	<i>M</i>		<i>SD</i>		Min	Max
			Boys	Girls	Boys	Girls		
Self-esteem		1904	32.4	29.3	6.1	6.7	10	40
Self-injurious behaviour	-.0045**	1930	0.9	2.2	1.9	2.9	0	8

Note. *N* = Number of participants; *M* = Mean; *SD* Standard Deviation

As shown in the table above there is a significant correlation between self-injurious behaviour and self-esteem; the higher the self-esteem the lower the score on the self-injurious behaviour measure, $r(1930) = -.0045$; $p < 0.01$. Girls, on average, scored significantly lower on the self-esteem scale than boys, $t(1886) = 10.52$, $p < .001$. On the other hand, girls score significantly higher than boys, on the self-injurious measure than boys $t(1909) = 10.78$, $p < .001$.

Independent-samples t-test was used to see whether there was a difference in self-esteem between participants who reported history of sexual abuse and participants who did not. Results showed that participants that have experienced sexual abuse ($M = 28.35$, $SD = 0.68$) had lower self-esteem than those who had not experienced sexual abuse, ($M = 31.66$, $SD = 0.64$), $t(1902) = 9.85$, $p < .001$. Results showed that participants who have experienced

sexual abuse ($M = 3.08$, $SD = 3.23$) were significantly more likely to develop self-injurious behaviour compared to non-victims, ($M = 1.10$, $SD = 2.12$), $t(1928) = 15.30$, $p < .001$.

Multiple regression and mediation analysis

Table 3 reveals a linear regression model predicting self-injurious behaviour which was statistically significant $F(3,1802) = 453.82$, $p < 0.001$. Sexual abuse was related to less self-injurious behaviour and high self-esteem was related to less self-injurious behaviour.

Table 3

Multiple Regression.

	B	Std.Error	Beta	<i>t</i>	<i>p</i>
Constant	2.74	.139		19.74	< .001
Gender	.23	.055	.090	4.21	< .001
Sexual abuse	.67	.064	.223	10.46	< .001
Self-esteem	-.73	.041	-.376	-17.88	< .001

Dependent variable: self-injurious behaviour

* $P < 0,001$

To assess whether the proposed mediational model (see figure 1) is correctly specified Baron and Kenny's four step regression analysis will be used. The steps are based on three linear regression analyses conducted separately for boys and girls. The three regression are: Model 1: sexual abuse (IV) predicting self-esteem (MV) , model 2: sexual abuse (IV) predicting self-injurious behaviour (DV) and model 3: both sexual abuse (IV) and self-esteem (MV) predict self-injurious behaviour (DV). As table 3 demonstrates, the mediation model fits the data well. The dependent variable and the mediator variable both predict the dependent variable individually. For boys, however, the strength of the association between sexual abuse and self-injurious behaviour becomes insignificant when self-esteem is added to the model (see model 3). With girls, while the association of sexual abuse on self-injurious behaviour loses some of its strength when accounting for self-esteem it still remains

significant. These results indicate that gender moderates the effect of self-esteem on self-injurious behaviour (Baron & Kenny, 1986).

Table 4

Baron and Kenny's four step mediation analysis. Three inear regressions to evaluate whether the impact of sexual abuse on the development of self-injurious behaviour in the study is mediated by self-esteem.

Gender	Dependent variable	Independent variable	R^2	B	Std. Error	β	P	
Boys	Self-esteem (model 1)	(Constant) Sexual abuse	0.0%	32.751 -1.582	0.226 0.516		< .001 .002	
	Self-injury (model 2)	(Constant) Sexual abuse	0.0%	0.799 0.651	0.071 0.161		< .001 < .001	
	Self-esteem (model 3)	(Constant) Sexual abuse Self-injury	0.2%	4.608 0.467 -0.116	0.333 0.155 0.010		< .001 .003 < .001	
	Girls	Self-esteem (model 1)	(Constant) Sexual abuse	0.0%	30.414 -2.940	0.265 0.433		< .001 < .001
		Self-injury (model 2)	(Constant) Sexual abuse	0.1%	1.391 2.050	0.109 0.179		< .001 < .001
		Self-esteem (model 3)	(Constant) Sexual abuse Self-injury	0.3%	6.420 1.564 -0.165	0.388 0.171 0.012		< .001 < .001 < .001

Note. R^2 , variance; B, unstandardized beta; β , standardized beta; p, significance level

The main effect between sexual abuse and low self-esteem was met because sexual abuse did significantly predict low self-esteem for boys and girls. Self-injurious behaviour did significantly predict the development of low self-esteem in boys and there was also a strong predictor of the onset of low self-esteem in girls. The connection between self-injurious behaviour and low self-esteem was met for girls since self-injurious behaviour significantly predicted the probability of developing low self-esteem. But it was not met for boys, which means that sexual abuse does not significantly associate boys self-esteem when

self-injurious behaviour is in the model. Sexual abuse has an indirect impact on boys self-esteem. The association between sexual abuse experience and self-esteem in boys is $b = -0.10$, $p = .002$, but when self-injurious behaviour is added as a predictor as well it reduces to $b = -0.37$, $p < .001$. The relationship between sexual abuse and self-injurious behaviour decreases in boys when self-esteem is in the model (model 3).

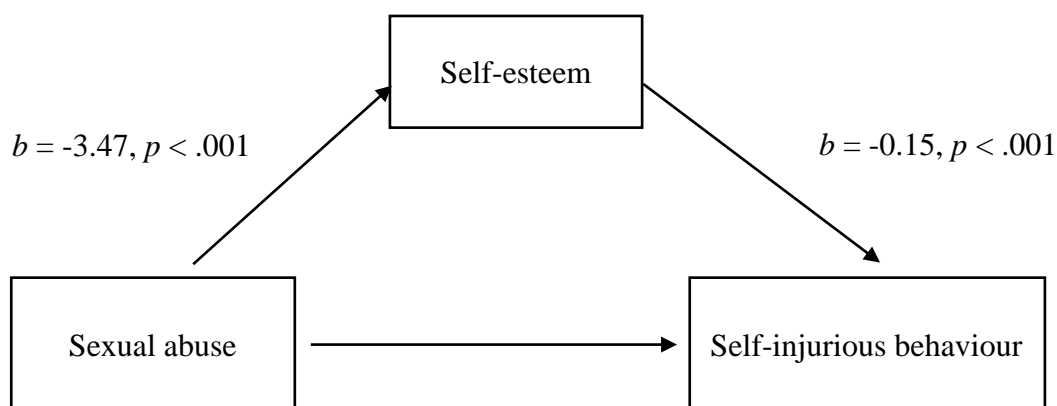
The mediation impact model, self-esteem as a predictor, and the connection between sexual abuse and increased self-injurious behaviour. In girls, the connection between sexual abuse and low self-esteem symptoms is $b = -0.21$, $p < .001$, but when self-injurious behaviour is included as a predictor as well it reduces to $b = 0.05$, $p < .001$.

Mediation effect between sexual abuse experiences and self-injurious behaviour

Mediation model was tested in Figure 1, the experience of sexual abuse was set up as a predictor developing self-injurious behaviour, mediated by self-esteem. There was a significant indirect effect in sexual abuse on self-injurious behaviour through self-esteem, $b = 0.52$, BCa CI [0.402, 0.653]. Sexual abuse is connected with lower self-esteem which is then correlated to more self-injurious behaviour. Sexual abuse predicts lower self-esteem ($p < .000$), which is partially explained by lower self-esteem ($p < .000$).

Figure 1

The model of mediation effect, sexual abuse as a predictor of self-injurious behaviour, mediated by self-esteem.



Direct effect, $b = 1.48$, $p < .001$
 Indirect effect, $b = 0.52$, 95% CI [0.40, 0.65]

Discussion

The aim of this study was to see if there was a connection between sexual abuse, self-esteem, and self-injurious behaviour among Icelandic secondary school students. The main research question in this present study aims to explore the mediation effect of self-esteem between sexual abuse experience and developing self-injurious behaviour, and to find out if there is a gender difference.

The findings of the study support the first hypothesis and showed that sexual abuse among adolescents is correlated with low self-esteem. These findings are in line with previous studies, children that have experienced sexual abuse have significantly lower self-esteem than students with no history of sexual abuse (Brayden et al., 1995; Mullen et al., 1996; (Priebe et al., 2010; Bonomi et al., 2008).

The findings of the study support the second hypothesis and showed that there is a significant relationship between childhood sexual abuse experience and low self-esteem in both boys and girls. Girls that have experience of sexual abused had significantly lower self-esteem than the non-abused girls. But previous studies are not in line with that result because they showed that boys that have sexual abused experience had not significantly lower self-esteem compared to the non-abused boys (Tong et al., 1987; Valente, 2005). Findings in the current study showed a higher proportion of girls have been sexual abused compared to boys and these findings are consistent with previous research on the prevalence of sexual abuse, which found that girls are more likely than boys to be victims of sexual abuse (Pérez-Fuentes et al., 2013). Girls have on average lower self-esteem than boys both for those who have been victims of abuse and those who have not been victims of abuse.

The findings of the study also support the third hypothesis, there is a relationship between sexual abuse and self-injurious behaviour that can be explained partly through self-esteem as a mediation. According to Baron and Kenny's 4 steps, the relationship is fully

mediated in boys but partly in girls (Baron & Kenny, 1986). Previous study showed that childhood maltreatment was positively correlated with the frequency of self-injurious behaviour and negatively correlated with self-esteem. Higher self-injurious behaviour frequency was correlated with lower self-esteem. The results also showed that self-esteem mediated the relationship between childhood maltreatment and self-injurious behaviour (Wang et al., 2020). Since the sample's linear regression coefficient was significant, a further study was carried out to see whether there were any variations between boys and girls.

The current study's strengths lie in the research method and the extensive willingness of Icelandic school officials to promote and participate in the survey during school hours. Therefore, all registered students attending school on the designated survey days participate in the survey. Another strength is the relatively large sample size ($n = 2051$) that was drawn out of the total population frame. Since sexual abuse affects a proportion of students the large sample increases the reliability of statistical research. Another advantage was that the gender ratio was very equal where boys ($n = 997$) and girls ($n = 1039$).

The first limitation is the measure was self-reported, which can lead to inaccuracy in the answers because some students may not have accurately reported their behaviours. The second limitation is that the research design is cross sectional, so it is impossible to make conclusions about causality because the cause-and-effect relationship is not clear. We do not know for sure if the abuse caused these problems or if they existed before the abuse because we do not have any data from before the abuse. Longitudinal studies should be included in future research to determine which components are critical in minimizing the long- and short-term consequences of sexual abuse victims. The third limitation is that the sexual abuse variable does not take into account the seriousness of the abuse, only has two values whether you have experienced some type of sexual abuse or not experienced any type of sexual abuse.

The abuse is likely to have different effects on the adolescents self-esteem and self-injurious behaviour depending on its severity.

Further studies are needed to explore the association of sexual abuse and frequency or the extent of self-injurious behaviour and the mediation of self-esteem. In conclusion, sexual abuse in childhood is associated with both self-injurious behaviour and low self-esteem. The results of the study showed that sexual abuse and low self-esteem have are significantly associated with self-injurious behaviour, but more research is required to look at those three factors together, especially since the relationship varies between genders. In the future it would be exciting to compare two groups of adolescents that have experience of sexual abuse, were one group consists of adolescents with low self-esteem and the other group consist of adolescents with high self-esteem, to explore if there is a difference in self-injurious behaviour scores between the two groups. In future research, it could also be interesting to investigate what other factors that sexual abuse can affect such as e.g. body image, anxiety and depression. Prior studies have showed that depressed mood is affective in mediating the effect of sexual abuse on self-injurious behaviour. The study also showed the effect of sexual abuse have more effect on depressed mood among girls than boys (Sigfusdottir et al., 2008).

It is our responsibility as a community to look for ways to support those who have been victims of sexual abuse and help them reclaim their power. Since most previous research on this subject has been done in the United States, this study adds to our knowledge. Many advances are required in scientific and clinical efforts to better understand, assess, and treat self-injurious behaviour, and this research is one little step in that direction.

References

- Al-Fayez, G., Ohaeri, J. & Gado, O. (2012). Prevalence of physical, psychological, and sexual abuse among a nationwide sample of arab high school students: Association with family characteristics, anxiety, depression, self-esteem, and quality of life. *Psychiatry Psychiatr Epidemiol.* <http://doi.org/10.1007/s00127-010-0311-2>
- Almuneef, M. (2019). Long-term consequences of child sexual abuse in Saudi Arabia: A report from national study. *Child Abuse & Neglect, 116*(1).
<https://doi.org/10.1016/j.chiabu.2019.03.003>
- Anderson, P. L., Tiro, J. A., Price, A. W., Bender, M. A., & Kaslow, N. J. (2002). Additive impact of childhood emotional, physical, and sexual abuse on suicide attempts among low-income african american women. *Suicide and Life-Threatening Behavior, 32*, 131–138.
- Arboleda, C. M., Duarte, C. J. & Canton-Cortes, D. (2011). Characteristics of sexual abuse of minors and its consequences on victims' mental health. *Gaceta Sanitaria, 25*(2), 157–165. <http://doi.org/10.1016/j.gaceta.2010.10.009>
- Asgeirsdottir, B. B., Sigfusdottir, I. D., Gudjonsson, G. H., & Sigurdsson, J. F. (2011). Associations between sexual abuse and family conflict/ violence, self-injurious behavior, and substance use: The mediating role of depressed mood and anger. *Child Abuse & Neglect, 35*(3), 210-219.
<http://doi.org/10.1016/j.chiabu.2010.12.003>
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1186.
- Bergen, H, A. Martin, G., Richardson, A, S., Allison, S., & Roeger, L. (2003). Sexual abuse and suicidal behavior: A model constructed from a large community sample of

- adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42(11), 1301-1309. <http://doi.org/10.1097/01.CHI.0000084831.67701.d6>
- Bolger, K., Patterson, C. & Kupersmidt, J. (1998). Peer relationships and self-esteem among children who have been maltreated. *Child Developmental*, 69(4), 1171-1197.
- Bonomi, A., Cannon, E., Anderson, M., Rivara, F. & Thompson, R. (2008). Association between self-reported sealth and physical and/or sexual abuse experienced before age 18. *Child abuse & Neglect*, 37(7), 693-701. <https://doi.org/10.1016/j.chiabu.2007.10.004>
- Brayden, R. M., Deitrich-Maclean, G., Dietrich, M. S. & Sherrod, K. B. (1995). Evidence for specific effects of childhood sexual abuse on mental well-being and physical self-esteem. *Child abuse & Neglect*, 9(10), 1255-1262.
- Eklund, M., Backstrom, M. & Hanson, L. (2018). Psychometric evaluation of the swedish version of rosenberg's self-esteem scale. *Nordic Journal of Psychiatry*, 72(5), 318-324. <https://doi.org/10.1080/08039488.2018.1457177>
- Eskin, M., Kaynak-Demir, H. & Demir, S. (2005). Same-sex sexual orientation, childhood sexual abuse, and suicidal behavior in university students in Turkey. *Archives of Sexual Behavior*, 34(2), 185-195. <http://dx.doi.org/10.1007/s10508-005-1796-8>
- Evans, C. R. & Smokowski, P. R. (2015). Prosocial bystander behavior in bullying dynamics: assessing the impact of social capital. *J Youth Adolescence*. 44, 2289–2307. <http://doi.org/10.1007/s10964-015-0338-5>
- Forrester, R. L., Slater, H., Jomar, K., Mitzman, S & Taylor, P, J. (2017). Self-esteem and non-suicidal self-injury in adulthood: A systematic review. *Journal of Affective Disorders*, 172-183. <http://dx.doi.org/10.1017/j.jad.2017.06.027>

- Glassman, L. H., Weierich, M. R., Hooley, J. M., Deliberto, T. L., & Nock, M. K. (2007). Child maltreatment, non-suicidal self-injury, and the mediating role of self-criticism. *ScienceDirect*, 45(10), 2483–2490.
- Gooding, P., TARRIER, N., DUNN, G., SHAW, J., AWENAT, Y., ULPH, F., PRATT, D., (2015). The Moderating effects of coping and self-esteem on the relationship between defeat, entrapment, and suicidality in a sample of prisoners at high risk of suicide. *European Psychiatry* 30(8), 988–994.
- Gray-Little, B., Williams, V. S. L., & Hancock, T. D. (1997). An item response theory analysis of the rosenberg self-esteem scale. *Personality and Social Psychology Bulletin*, 23(5), 443–451. <http://doi.org/10.1177/0146167297235001>
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: a regression-based approach*. New York: The Guilford Press.
- Heim, C., Newport, D. J., Heit, S., Graham, Y. P., Wilcox, M., Bonsall, R., Miller, A. H. & Nemeroff, C. B. (2000). Pituitary-adrenal and autonomic responses to stress in women after sexual and physical abuse in childhood. *American Medical Association*, 284(5), 592-597. <http://doi.org/10.1001/jama.284.5.592>
- Lam, K. Y.-I. (2015). Disclosure and psychological well-being of sexually abused adolescents in Hong Kong. *Journal of Child Sexual Abuse*, 24(7), 731–752. <http://doi.org/10.1080/10538712.2015.1077364>
- McGee, R., Williams, S. & Nada-raj, S. (2001). Low self-esteem and hopelessness in childhood and suicidal ideation in early adulthood. *Journal of Abnormal Child Psychology*, 29, 281-291.
- Mossige, S. (2004). *The Baltic Sea Regional Study on Adolescent's Sexuality: A survey among young people*. Oslo: Norwegian Social Research.

- Mullen, P. E., Martin, J. L., Anderson, J. C., Romans, S. E. & Herbison, G. P. (1996). The Long-term Impact of the Physical, Emotional, and Sexual Abuse of Children: a Community Study. *Child Abuse & Neglect*, 20(1), 7–21. [http://doi.org/10.1016/0145-2134\(95\)00112-3](http://doi.org/10.1016/0145-2134(95)00112-3)
- Pérez-Fuentes, G., Olfson, M., Villegas, L., Morcillo, C., Wang, S., & Blanco, C. (2013). Prevalence and correlates of child sexual abuse: a national study. *Comprehensive Psychiatry*, 54(1), 16–27. <https://doi.org/10.1016/j.comppsy.2012.05.010>
- Priebe, G., Hansson, K. & Svedin, C. G. (2010). Sexual abuse and associations with psychosocial aspects of health. A population-based study with swedish adolescents. *Nordic Journal of Psychiatry*, 64(1), 40-48. <http://dx.doi.org/10.3109/08039480903265769>
- Pálsdóttir, H., Sigfússon, J., Kristjánsson, Á. L., Guðmundsdóttir, M. L., Þórisdóttir, I. E., & Sigfúsdóttir, I. D. (2017). *Ungt fólk 2016: Framhaldsskólar. Reykjavík: Rannsóknir og Greining.*
- Roosa, M. W., Reyes, L., Reinholtz, C., & Angelini, P. J. (1998). Measurement of women's child sexual abuse experiences: An empirical demonstration of the impact of choice of measure on estimates of incidence rates and of relationships with pathology. *Journal of Sex Research*, 35, 225–233.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Russell, D. E. (1983). The incidence and prevalence of intrafamilial and extrafamilial sexual abuse of female children. *Child Abuse & Neglect*, 7, 133–146.
- Santrock, J. W. (2016). *Adolescence* (16. útgáfa). New York: McGraw Hill Education
- Sigfusdottir, I. D., Asgeirsdottir, B. B., Gudjonsson, G. H. & Sigurdson, J. F. (2008). A model of sexual abuse's effects on suicidal behavior and delinquency: The role of

- emotions as mediating factors. *Journal of Youth and Adolescence*, 37, 699-712.
<http://doi.org/10.1007/s10964-007-9247-6>
- Sigurvinsdottir, R., Asgeirsdottir, B. B., Ullman, S. E. & Sigfusdottir, I. D. (2021). The impact of sexual abuse, family violence/conflict, spirituality, and religion on anger and depressed mood among adolescents. *Journal of Interpersonal Violence*, 36(1-2).
<https://doi.org/10.1177/0886260517734860>
- Solomon, C. R & Francoise, S. (2019). Effects of parental verbal aggression on children's self-esteem and school marks. *Child Abuse & Neglect*, 23(4), 339-251.
- Teten, A., Ball, B., Valle, L., Noonan, R. & Rosenbluth, B. (2009). Considerations for the definition, measurement, consequences, and prevention of dating violence victimization among adolescent girls. *Journal of women's health*, 18(7).
<http://doi.org/10.1089=jwh.2009.1515>
- Thompson, A. E. & Kaplan, C. A. (1996). Childhood emotional abuse. *British Journal of Psychiatry*, 168(2), 143-148. <https://doi.org/10.1192/bjp.168.2.143>
- Tong, L., Oates, K., and McDowell, M. (1987). Personality development following sexual abuse. *Child Abuse & Neglect*, 11(3), 371-383. [https://doi.org/10.1016/0145-2134\(87\)90011-1](https://doi.org/10.1016/0145-2134(87)90011-1)
- Valente, S. M. (2005). Sexual abuse of boys. *Journal of Child and Adolescent Psychiatric Nursing*, 18(1), 10–16. <http://doi.org/10.1111/j.1744-6171.2005.00005.x>
- Wang, S., Xu, H., Zhang, S., Wan, Y. & Tao, F. (2020). Mediating effects of self-esteem in the relationship between childhood maltreatment and non-suicidal self-injury among adolescents: The roles of sex and only-child status. *Social Science & Medicine*, 249.
<https://doi.org/10.1016/j.socscimed.2020.112847>
- Whitaker, D., Le, B., Hanson, K., Baker, C., McMahon, P., Ryan, G., Klein, A. & Rice, D. (2008). Risk factors for the perpetration of child sexual abuse: A review and meta-

analysis. *Child Abuse & Neglect*, 32(5), 529-548.

<https://doi.org/10.1016/j.chiabu.2007.08.005>

Weierich, M. R. & Nock, M. K. (2008). Posttraumatic stress symptoms mediate the relation between childhood sexual abuse and nonsuicidal self-injury. *Journal of Consulting and Clinical Psychology*, 76(1), 39–44.