The Effect of Sexual Abuse on Adolescents as Associated with Substance Abuse, Depression and Anger

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Foreword

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

Abstract – English

Substantial evidence has shown that there are connection between sexually abuse, substance use, anger and depression. Those who have been sexual abused in their early years are more likely to develop depression, experience anger symptoms and abuse addictive substance. In the current study participants were all college students in Iceland in the year 2010.
The sample was 3.000 individuals and the age of the participants were from sixteen to nineteen, born in the years 1991–1997. The participants were asked to answer detailed questionnaires which teachers submitted to the students. Two models were used to focus only on those who had been sexually abused, total of 179 individuals. Binary logistic regression was used for both models. The independent variable in Model 1 was stimulative substance and independent variable in Model 2 was sedative substance, dependent variables for both models were depression and anger. The results for Model 1 showed no connection between depression and stimulative substance, but there was a connection between anger and stimulative substance. Furthermore, results for Model 2 showed no connection between depression and anger.

Útdráttur – Icelandic

Rannsóknir hafa sýnt fram á tengsl á milli kynferðislegra misnotkunar, vímuefnamisnotkun, reiði og þunglyndi. Þeir einstaklingar sem hafa orðið fyrir kynferðislegri misnotkun á barnárum eru líklegri til þess að þróa með sér þunglyndi, upplifa reiði og nota vímuefni. Í þessari rannsókn voru þátttakendurnir nemendur í öllum framhaldskólum Íslands árið 2010. Þátttakendurnir voru sextán til nítján ára, fæddir á árunum 1991–1997. Þátttakendurninr voru beðnir um að svara ítarlegum spurningalista sem kennarinn lagði fyrir nemendur. Tvö model voru notuð til að einblína einundis á þá sem höfðu orðið fyrir kynferðislegri misnotkun, þeir einstaklingar voru 179 talsins. Aðhvarfsgreining hlutfalla var notuð fyrir bæði módelin. Frumbreytan í módel 1 var örvandi vímuefni og frumbreytan í módel 2 var róandi vímuefni, fylgibreyturnar fyrir bæði módelin voru þunglyndi og reiði. Niðurstöður sýndu fram á að í módel 1 var engin tengsl á milli þunglyndi og örvandi vímuefna en það var tengsl á milli reiði og örvandi vímuefna. Ennfremur gáfu niðurstöður til kynna að í módel 2 voru engin tengsl á milli þunglyndi, reiði og róandi vímuefna.

The Effect of Sexual Abuse on Adolescents as Associated with Substance Abuse, Depression and Anger

Childhood sexual abuse has garnered great attention from researchers and from society. The article by Johnson (2004) assumed that 2–62% of women have been victims of sexual abuse versus 3–16% of males. Even though sexual abuse of children has existed throughout history, many individuals have recently opened their eyes and seen the negative effects of sexual abuse (Haileye, 2013).

Substantial evidence suggests that childhood sexual abuse plays a large and important role in antisocial behaviour and is associated with early substance use among adolescents (Bergen, Martin, Richardson, Allison and Roeger, 2004; Dube et al., 2003; Ompad et al., 2005). Ompad et al. (2005) found that females are more likely to have experienced sexual abuse than men. They also found that experience a stressor like sexual abuse at a young age can be the cause of substance abuse in adolescents. Females have shown more internal problems and symptoms rather than external behaviour connected to sexual abuse (Bergen et al., 2004). Individuals who have been sexually violated show more psychological and physical symptoms and are more likely to engage in substance abuse (Asberg and Renk, 2013). Singer, Song and Ochberg (1994) concluded that this is because adolescents perceive great benefits from using addictive substances.

During childhood and adulthood, sexual abuse is recognised as a risk factor for depression and anger (Calam, Horne, Glasgow and Cox, 1998; Johnstone et al., 2009; Thomas and Hall, 2008). Depressed adolescents are more sensitive to traumatic events later in life, and furthermore, depressed adolescents are more likely to be at risk for suicide (Son and Kirchner, 2000; Cappelli et al., 1995). It has been estimated that 28% of adolescents will experience major depression before the age 20 (Lewinsohn, Rohde and Seeley, 1998). Future

psychological well-being can be adversely affected in those who have experienced childhood sexual abuse (Haileye, 2013).

Depression can develop in females at a young age if they have a history of sexual abuse furthermore, depression is twice as common for girls than boys in adolescents (Naninck, Lucassen and Bakker, 2011; Buzi et al., 2007). Haileye (2013) wanted to examine psychopathology associated with childhood sexual abuse. Her finding showed that there was a difference between females who had experienced childhood sexual abuse and females who hadn´t been abused associated with depression and panic. Haileye (2013) also found that 98.4% of all participants knew other females who had been sexually abused. Furthermore, the results indicated that females who had experienced sexual abuse were more likely to develop psychological deviation.

In their research, Asgeirsdottir, Sigfusdottir, Gudjonsson and Sigurdsson (2011) examined whether anger and depression were associated with sexual abuse, as well as whether family conflict/violence, self-injurious behaviour and substance use were so assoiciated. Their results showed that sexual abuse and family conflict/violence impacted of behaviour in adolescence. There was a greater likihood that adolescents would exhibit self-injurious behaviour and substance use if they had experienced sexual abuse. Another study by Sigfusdottir, Asgeirsdottir, Gudjonsson and Sigurdsson (2008) examined whether anger and depression associated with sexual abuse had an effect on suicidal behaviour. Their results indicated that stress in the form of sexual abuse did effect depression and anger in adolescence. The connection of sexual abuse to suicidal behaviour was very strong.

Feerick and Snow (2005) estimated that if sexual abuse is one of the events in a child life, it is possible that such an individual will exhibit anxiety and agony in adolescence and adulthood. The reason that they gave was that the victims might be more aware that sexual abuse could happen again later in life. This speculation can explain why sexual abuse victims

are always on the lookout for repeated abuse even if years have passed since the inital incident.

When looking at studies that examine the association between sexual abuse, internalize disorders (e.g. depression and anger) and substance use, findings confirm the suspicion that sexual abuse has a negative effect on an individual´s future (Singer, Song, and Ochberg, 1994; Freeman, Collier and Parillo, 2002; Gladstone et al., 2004; Johnstone et al., 2009). We can estimate that adolescents who have been exposed to childhood trauma such as sexual abuse may experience helplessness, depression, anger and chaos (Thomas and Hall, 2008; Johnstone et al., 2009; Buzi et al., 2007). In that respect, adolescents' substance use can be easy way to escape from the environment that they are in as well as the unpleasant feelings that childhood sexual abuse brings, such as anger, pain and confusion (Lansford et al., 2008).

Researchers have examined the internal and external factors leading to school dropouts (Beauvais, Chavez, Oetting, Deffenbacher and Cornell, 1996; Gfroerer, Greenblatt and Wright, 1997; Quiroga, Janosz, Bisset and Morin, 2013). Jón Torfi Jónasson and Kristjana Stella Blöndal (2002) wanted to examine whether there was any connection between school dropouts, social factors and psychological factors. Their main results indicated that individuals' background had an impact whether they dropped out of school. The authors found three underlying factors that could give a reason for dropping out. The first factor was poor educational success, the second factor was that individual thought the course was pointless and the third factor was because of external factors.

The prior studies examine the connection in women, rather than men, childhood sexual abuse and depression (Haileye, 2013; Gladstone et al., 2004). The author finds it important to examine adolescent's boys equally with girls in this matter. It is not only girls who are sexually abused in the childhood (Jones et al., 2013) even though they are more likely to

experience this traumatic life event (Buzi et al., 2007). Like previous studies have shown, sexual abuse has negative life changing effects on an individual's future.

The purpose of the present study was to examine the negative effects of sexual abuse in terms of depression, anger and substance use among Icelandic adolescents. In the study, participants who reported being sexually abused once or more in their lifetime were used. Based on the previous literature the following hypotheses were put forward:

1. Sexual abuse increases the likelihood of substance use.
2. Depression and anger are associated with stimulative substance abuse among individuals with a history of sexual abuse.
3. Depression and anger are associated with sedative substance abuse among individuals with a history of sexual abuse.

Method

Participants

Those who participated in the current study were all college students in Iceland in the year 2010. The participants were not chosen personally; rather they were those who were present in class when the questionnaires completed. In 2010, the number of valid questionnaires was 11388, but the current sample consisted of 3000 students, 1437 boys (47.9%) and 1554 girls (51.8%). The participants were from the age sixteen to nineteen, born in the years 1991–1997. The participants did not get paid or received any reward for their participation. The participants were informed that the data collected could not be traced back to them, that there was anonymity.

Procedure

Detailed questionnaires were submitted to students in Icelandic collages. These questionnaires have been developed for years, first by the employees of the Ministry of Culture and Education and later on from the Icelandic Centre for Social Research and Analysis (ICSRA) (Hrefna Pálsdóttir, Inga Dóra Sigfúsdóttir, Álfgeir Logi Kristjánsson, Margrét Lilja Guðmundsdóttir and Jón Sigfússon, 2010).

The questionnaire was given to all of the students who were in the class when the questionnaire was taken (Hrefna Pálsdóttir et al., 2010). The questionnaires were sent to all colleges in Iceland, and the teachers were those who submitted the questionnaire to students. The teachers told the participants to raise their hand and ask for help if they didn't understand the questions; they were also asked to answer the questions to the best of their knowledge. In addition, the teachers were given the instruction to tell the participants to write no personal information on the questionnaires, for example social security number or name, in order to ensure anonymity (Hrefna Pálsdóttir et al., 2010). The participants were told to put the questionnaires in an empty envelope so their answers could not be traced back to them.

Measures

The questionnaire contained 110 questions on 34 pages about students education, culture, family, social background, athletics and leisure activities. Only 4 questions were used in the current study, question on sexual abuse, anger, depression and substance use (see appendix A, p. 23).

The question about sexual abuse "Have you experience sexual abuse" had four responses scale they were "Yes, in the last 30 days", "Yes, in the last 12 months", "Yes, more than 12 months ago" and "No". The researcher combines three of those responses together. The response "No" stayed the same. After combining these responses, the variable had a response scale of two (1 ="Yes" and 0 ="No").

The question about depression was in 10 parts, the participants were asked how often in the last 30 days they had experienced the following: "You were sad or had little interest in doing things", "You had little appetite", "You felt lonely", "You cried easily or wanted to cry", "You had trouble sleeping or stay sleeping", "You felt blue or sad", "You were not exited to be doing things", "You felt slow or powerless", "The future seemed hopeless" and "You thought about taking your own life". The responses were on a four–point scale: "Never", "Seldom", "Sometimes" and "Often".

The question about anger was in 5 parts. The participants were asked how often in the last 30 days they experienced the following: "You were easily annoyed or irritated", You experienced an outburst that you couldn't control", "You got into a fight" and "You screamed and threw things". The responses were on a four–point scale: "Never", "Seldom", "Sometimes" and "Often".

In the question about substance use, participants were asked "How often (if ever) have you used the substance mentioned below?". The question was in 13 parts but only 3 parts were used in this study. The responses were "Never", "1–2 times", "3–5 times", "6–9 times",

“10–19 times”, “20–39 times” and “40 times or more”. The substance used was divided into two categories, sedative substance and stimulative substance. To create the dependent variable sedative substance, two sections were used from the question about substance use, cannabis and marijuana. The researcher put six responses together to create the response “Yes”, the response “never” stayed the same. The six responses were: “1–2 times”, “3–5 times”, “6–9 times”, “10–19 times”, “20–39 times” and “40 times or more”. After those changes the sedative substance variable had two response scale (1 =”Yes” and 0 =”No”). To create the dependent variable stimulative substance one section was used from the question about substance use, amphetamine. The researcher combined responses in the stimulative substance variable like in sedative substance variable. The researcher put six responses together to create the response “Yes” the response “Never” stayed the same. The six responses were: “1–2 times”, “3–5 times”, “6–9 times”, “10–19 times”, “20–39 times” and “40 times or more”. After those changes the stimulative substance variable had two response scale (1 =”Yes” and 0 =”No”).

Data analysis

In the current study binary logistic regression was used, whereas the categorical outcomes are only two for the dependent variables (Field, 2009). The researcher decided to use two models focusing only on those who had been sexually abused. In Model 1, the dependent variable was stimulative substance and the independent variables were depression and anger. In Model 2, the dependent variable was sedative substance and the independent variables were the same as “in Model 1”: depression and anger. The researcher used Cronbach’s alpha to test the reliability of the two models.

Results

The results showed that 179 individuals reported that they have been sexually abused at least once in their lifetime, or 5.97% of the 3000 sample. Of those 179 individuals that reported sexual abuse, 118 were women or, 65.9% and 61 were male or, 34.1%. Cronbach's alpha for the independent variables anger and depression was .80, which indicates that those two variables are positively contributing to the overall reliability.

Table I shows the frequency and percentage of the two dependent variables, stimulative and sedative substance. Looking at the table, we see that 140 individuals have never used a stimulative substance versus 31 individuals who had used that kind of substance. The table also shows that for the variable sedative substance, 105 individuals had never tried it and 66 tried it once or more.

Table 1. Descriptive Statistic for the Dependent Variables Stimulative Substance and Sedative Substance.

Variables	Values	Frequency	Percentage
Stimulative substance	Yes	31	17.3%
	No	140	78.2%
Sedative substance	Yes	66	36.9%
	No	105	58.7%

Table II shows the mean score for the independent variables depression and anger. The mean score for the independent variable depression on a scale of 1–30 (the higher the number, the greater the symptoms) was 12.94 (SD = 8.2). The mean score for the variable anger on a scale of 1–15 (the higher the number, the greater the symptoms) was 5.8 (SD = 4.4)

Table II. Mean for the Dependent Variables Depression and Anger.

	Mean	Std. Deviation	Total
Depression	12.94	8.2	171
Anger	5.8	4.4	175

In Table III, Model I show the results of the logistic regression for anger and depression when predicting stimulative substance use. The results show that anger was significantly related to stimulative substance use but that depression did not show significant a relation to stimulative substance. The odds of stimulative substance use are 1.1 times higher if individuals reported that they had felt anger symptoms in the last 30 days. The results also show the odds of depression which did not show significant relation; the odds were 1 time higher if the individuals had felt depression symptoms in the last 30 days. The odds for depression are very low whereas the value to increase the predictor was 1.

The model correctly classifies 131 individuals who did not use a stimulative substance. The model also classified 30 individuals who did use stimulative substance. The overall accuracy of classifications was the weighted average of these two values, or 81.4%. The model explains 5.5% (according to Cox and Snell's R square) to 8.8% (according to Nagelkerke's adjusted value) of the variance of the dependent variable stimulative substance. When testing for sexual abuse interactions in Model 1, the only interaction that was significant was anger (Exp(B)=1.168, $p < .001$).

Table III. Logistic Regression for Anger and Depression when Predicting Stimulative Substance Use.

		Model I					
		B	S.E.	Sig.	Exp(B)	95% C.I. for Exp(B)	
						Lower	Upper
Step 1[a]	Anger	.132	.054	.014	1.141	1.027	1.269
	Depression	.044	.030	.906	1.004	.946	1.065
	Constant	-2.384	.452	.000	.092		

In Table IV, Model II shows the results of the logistic regression for anger and depression when predicting sedative substance use. The results show that neither anger nor depression was significantly related to sedative substance use. The odds of sedative substance were 1 time higher for both anger and depression if the individuals had felt anger or depression symptoms in the last 30 days. Both odds are very low; if the value would be lower than 1, the odds of the outcome occurring decreases. The model correctly classifies 94 individuals who did not use a sedative substance but misclassifies 7 others (it correctly classifies 93.1% of the cases). The model also correctly classifies 53 individuals who did use a sedative substance but misclassified 8 individuals (it correctly classified 13.1% of cases). The overall accuracy of classification was the weighted average of these two values, or 63%. The model explains 2.7% (according to Cox and Snell's R square) to 3.7% (according to Nagelkerke's adjusted value) of the variance of the dependent variable sedative substance. When testing for sexual abuse interactions in Model 2, the only interaction that was significant was anger (Exp(B)=1.151, $p < .001$).

Table IV. Logistic Regression for Anger and Depression when Predicting Sedative Substance Use.

		Model II					
		B	S.E	Sig.	Exp(B)	95% CI. for Exp(B)	
						Lower	Upper
Step 1[a]	Anger	.034	.044	.441	1.034	.950	1.126
	Depression	.030	.024	.205	1.031	.984	1.080
	Constant	-1.095	.332	.001	.335		

Discussion

Many studies have examined the relationship among sexual abuse and substance use (Bergen et al., 2004; Dube et al., 2003; Ompad et al., 2005). Their findings are very similar, that sexual abuse is associated with substance use and has a negative impact on our internal well-being. Furthermore, previous studies often focused only on females rather than males. In the current study, 5.97%, or 179 individuals of the 3000 sample, reported being sexually abused at least once in their lifetime. Of those 179 individuals that reported having been sexually abused, 118 were female or, 65.9% and 61 were male or, 34.1%. Those numbers are consistent with previous studies that showed females are more likely to experience sexual abuse (Buzi et al., 2007).

The finding did not support the first hypothesis, that history of sexual abuse increases the likelihood of substance abuse. When looking at the results for substance use 140 individuals had never used a stimulative substance, while 31 individuals who had used such a substance once or more often. In addition, 105 individuals had never used a sedative substance versus 66 individuals who had used that kind of substance once or more often. Previous studies have shown that history of sexual abuse does increase the likelihood of substance abuse (Fendrich, Mackesy-Amiti, Wislar and Goldstein, 1997; Asberg and Renk, 2013; Bergen et al., 2004; Singer, Song and Ochberg, 1994; Freeman, Collier and Parillo, 2002).

The findings partially supported the second hypothesis, that depression and anger are associated with stimulative substance use. The results in the current study showed that anger was significantly related to stimulative substance use but depression did not show significant relation. The results are in line with previous studies when looking at anger associated with stimulative substance use (Zweben et al., 2004). Furthermore, the findings are not consistent

with the results when looking at depression whereas other studies have shown that stimulative substance use is associated with depression (Topp, Day and Degenhardt, 2003).

The findings did not support the third hypothesis, that depression and anger are associated with sedative substance use. The result in the current study showed that neither anger nor depression was significantly related to sedative substance use. Previous studies have found that sedative substance use is associated with anger and depression (Nichols, Mahadeo, Bryant and Botvin, 2008; Dore, Mills, Murray, Teesson and Farrugia, 2012).

The current study has a several limitations so the above findings should be interpreted with caution. First, the question about sexual abuse has no timeframe after combining the three–response scale, which consisted of the responses "Yes, in the last 30 days", Yes, in the last 12 months" and "Yes, more than 12 months ago", into the response "Yes". The response "No" stayed the same. There was no way to know when the participants had experienced sexual abuse or whether it was childhood sexual abuse or sexual abuse later in life. Studies have shown that childhood sexual abuse is a strong risk factor for substance use among adolescents (Bergen et al, 2004; Freeman et al., 2002). Other studies have shown that sexual abuse later in life is also associated with substance use (Fendrich, Mackesy-Amiti, Wislar and Goldstein, 1997; Singer et al., 1994). It is not clear whether it would make a difference if the abuse had occurred in childhood or later in life. Second, the results showed that 179 individuals reported that they had been sexually abused at least once in their lifetime, or 5.97% of the 3000 sample. The reason for this low response among those who reported being sexually abused is unknown. The researcher has concluded several suppositions for that matter: mistrust of the questionnaires, shame and suppression. Participants may have a hard time trusting the questionnaires even though the participants were informed that the data collected could not be traced back to them, that there was anonymity. Victims of sexual abuse can experience shame and studies have shown that individuals can suppress memories that are

psychologically demanding and are very unpleasant to remember (Geraerts, McNally, Jelicic, Merckelbach and Raymaekers, 2008; Talbot, 1996). It would be interesting to examine larger sample or more diverse sample. Third, the questionnaires were a self-reported measure. Participants may not answer the questions correctly for the same reasons that were mentioned above.

The main strength of the current study is the anonymity. The questionnaires had great strength in anonymity. The participants were told not to put any personal information on the forms so there could be no way to trace the data back to them. In the current study, the researcher used a sample of 3000 from the overall data, which strengthens the anonymity. The sample size is very large, 70.5% of the total Icelandic adolescent' students who answered the questionnaires, which makes them very representative for this age group.

In conclusion, the results indicate that individuals who are experiencing anger are more likely to use a stimulative substance such as amphetamine rather than a sedative substance such as cannabis. Furthermore individuals who are experiencing depression are not likely to use a stimulative substance or a sedative substance. Future studies should examine further collage dropouts and individuals who are in this age group and are not engaging in any school activity. Further examination is also needed of gender difference associated with sexual abuse, whereas previous studies examine primarily women in this matter (Gladstone et al., 2004; Haileye, 2013). A perpetrator can ruin the future of an innocent child in a split second without even realising how dramatic the consequences of this one event can be. It is very important that individuals realise how severe damage sexual abuse can cause, especially if it happens in the early years. The researcher thinks it is very important to continue to examine individuals who have experienced sexual abuse and the negative effect that it brings. It is important for the community to know the consequences of sexual abuse and know how to help those individuals who experience this traumatic event.

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