



BSc in Psychology

Sexual abuse and excessive alcohol use among Icelandic adolescents in and out of high school

Nafn nemanda: Halldóra Ársælsdóttir

Kennitala: 070192 – 2689

Foreword

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

Abstract

This study examined the relationship between sexual abuse and alcohol use in adolescents in and out of high school. The data came from two cross-sectional, national studies in Iceland, conducted in 2000 and 2001. Participants were 2,835 Icelandic adolescents, aged 16-19 years. Using chi square test of independence and linear regression, the results indicated that adolescents out of school were more likely than those in school to have been sexually abused and to use alcohol more frequently. Girls were more likely to have been sexually abused, while boys were more likely to use alcohol more frequently. There was no difference in alcohol use among boys based on sexual abuse, although girls who had been sexually abused were more likely to have been frequently intoxicated. Girls out of school who had been sexually abused were more likely than those who had not been sexually abused to use alcohol frequently. The same was true for girls in school. These results underline the great importance of finding solutions for the victims of sexual abuse.

Keywords: sexual abuse, adolescents, education, alcohol, intoxication.

Útdráttur

Þessi rannsókn skoðaði samband kynferðislegrar misnotkunar og áfengisneyslu hjá íslenskum ungmendum, í og utan framhaldsskóla. Rannsóknin var unnin út frá gögnum frá spurningalistunum Ungt fólk frá árunum 2000 og 2001. Þátttakendur voru 2.835 talsins, á aldrinum 16-19 ára. Með kíkvaðrat greiningu og aðhvarfsgreiningu hlutfalla kom í ljós að ungmenni utan skóla voru líklegri en ungmenni í framhaldsskóla til að hafa orðið fyrir kynferðislegri misnotkun og til að hafa oftar neytt áfengis. Stúlkur voru líklegri til að hafa orðið fyrir kynferðislegri misnotkun en piltar líklegri til að neyta oftar áfengis. Engin munur var á áfengisneyslu stráka eftir hvort þeir höfðu verið kynferðislega misnotaðir eða ekki, en stúlkur sem höfðu orðið fyrir kynferðislegri misnotkun voru líklegri til að hafa neytt áfengis óhóflega. Stúlkur utan skóla sem höfðu verið misnotaðar voru líklegri en stúlkur sem ekki höfðu verið misnotaðar til að hafa oft verið óhóflega drukknar. Sama átti við um stúlkur í skóla. Niðurstöður rannsóknarinnar undirstrika mikilvægi þess að finna fylgja eftir og finna meðferðarúrræði fyrir einstaklinga sem hafa orðið fyrir kynferðislegri misnotkun.

Lykilhugtök: kynferðisleg misnotkun, ungmenni, menntun, áfengi, ölvun.

Sexual abuse and excessive alcohol use among Icelandic adolescents in and
out of high school

Sexual abuse is a grave act and can have a serious impact on the victim (Maniglio, 2009). According to the American Psychological Association, sexual abuse is described as an invasion or misuse of another person by sexual means (VandenBos, 2007). Sexual abuse of children involves all sexual contact between adults and children. According to the World Health Organization ('WHO | Child maltreatment', n.d.) approximately one in every five women and one in every 13 men have been sexually abused in their childhood, and in the first nine months of 2016 in Iceland, there were 288 reported cases of sexual abuse to the Government Agency for Child Protection in Iceland, of which 206 involved girls and 82 involved boys (Barnaverndarstofa, 2016). The fact that girls are more likely than boys to be the victim of sexual abuse, is in line with prior research (Afifi et al., 2014; Barth, Bermetz, Heim, Trelle, & Tonia, 2013; Dube et al., 2005; Finkelhor, Shattuck, Turner, & Hamby, 2014; Molnar, Buka, & Kessler, 2001; Tonmyr & Shields, 2016).

Sexual abuse can have various consequences for the victim, such as depression (Clark, Bellis, Lynch, Cornelius, & Martin, 2003), anxiety (Molnar et al., 2001), post-traumatic stress disorder (Ashby & Kaul, 2016; Epstein, Saunders, Kilpatrick, & Resnic, 1998), antisocial personality (Southwick Bensley, Van Eenwyk, Spieker, & Schoder, 1999), suicide intentions (Dube et al., 2005), misuse of alcohol and other illegal substances (Ásgeirsdóttir, 2011) are more prominent in victims of sexual abuse.

Sexual abuse and alcohol

As previously noted, misuse of alcohol is one possible consequence of sexual abuse (Ásgeirsdóttir, 2011). A Canadian longitudinal study (Tonmyr & Shields, 2016)

found that individuals who had reported childhood sexual abuse were more likely to be hazardous drinkers and use other illicit as well as off label drugs. These findings were supported by Ásgeirsdóttir's (2011), Ullman, Filipas, Townsend, and Starzynski's (2005) and Harrison, Fulkerson, and Beebe's (1997) studies. Harrison et al. (1997) looked at American adolescents, and found that alcohol misuse and illegal substance use was associated with a history of sexual abuse. Males who had been sexually abused were more likely to misuse alcohol and other illegal substances than females, and with growing age, the prevalence of the misuse of substances became higher among both genders.

However, in Tonmyr and Shields' (2016) study childhood sexual abuse was negatively associated with heavy episodic drinking, but it must be considered that males were more likely than females to be heavy episodic drinkers while females were more likely than men to report childhood sexual abuse.

A review by Langeland and Hartgers (1998) concluded that there was a relationship between experiencing childhood sexual abuse and alcohol problems later in life for women but evidence was too limited among men to draw to a conclusion. Although, Ferguson, Boden, & Horwood findings (2008) demonstrated that exposure to childhood sexual abuse was consistently related to increased risks of mental health problems, including substance abuse problems, and the risks were the same for both genders. It is supported by Edghard and Ormstad's (2000) findings, where adolescents who had experienced sexual abuse were more likely than those who had not experienced sexual abuse, to report a heavy drinking bout before age of 15, for both genders. This general relationship between sexual abuse and the misuse of alcohol has been repeatedly supported (Arellano, Chavez, & Deffenbacher, 1998; Epstein et al., 1998; Goldstein et al., 2013; Harrison, Fulkerson, & Beebe, 1997). Hence, individuals

who have been sexually abused are more likely to misuse alcohol than individuals who have not been sexually abused.

Education and sexual abuse

So far, research on sexual abuse in relation to adolescents who discontinued their education before completing high school is scarce. A research on high school students who were classified as dropout-prone by school authorities in the USA reported that adolescents who had experienced trauma of any kind (e.g. sexual abuse, physical abuse, divorce by parents) (Harris, 1983). Of females who were classified as dropout prone, thirty-one percent reported having experienced incest, while 9% of the females in the control group reported experiencing incest. None of the male participants reported experiencing incest. However, about 30% of the dropout prone males reported having been a victim of sexual assault, as opposed to none of the males in the control group reported so. Of dropout-prone females 63% reported being a victim of a sexual assault, in contrast with only 22% of the non-dropout prone females.

These results found by Harris (1983) are further emphasized in a study by Edgardh and Ormstad (2000) on Swedish teenagers in and out of school, which showed that adolescents who had discontinued their education were more likely to have experienced sexual abuse. Of female adolescents 28% of those not in school reported having experienced sexual abuse, against only 11.2% of females in school. These numbers are smaller than Harris' (1983) findings, although they show the same pattern of sexual abuse being almost three times more common for females not in school than in school. However, unlike Harris (1983), the difference for males in Edghard and Ormstad's (2000) study was not so vast. In total 4% of those out of school reported being a victim of sexual abuse, while 3.1% of those in school reported

the same thing. Hence, individuals who have been sexually abused are more likely to discontinue their education than those who have not been sexually abused.

Education and alcohol intoxication

Wichstrøm (1998) found that adolescents in Norway who had discontinued their education were twice as often intoxicated than individuals still in school.

Although the researchers did not investigate whether gender differences were present.

Crum, Helzer and Anthony's (1993) findings reported that those individuals who dropped out of high school were 6.34 times more likely to develop alcohol abuse or dependence than individuals who graduated. This general relationship between dropping out of school and alcohol abuse has been repeatedly supported (Dee & Evans, 2003; Koch & Mcgeary, 2005; Zimmerman & Schmeelk-Cone, 2003). Hence, individuals who drop out of school are more likely to misuse alcohol than those who do not drop out of school.

As evident by the research described thus far, many older studies seem to focus mainly on the effects of sexual abuse on females (Ashby & Kaul, 2016; Epstein et al., 1998; Fleming, Mullen, Sibthorpe, & Bammer, 1999; Spak, Spak, & Allebeck, 1997). However, sexual abuse has also grave effects on boys (Grossman, 2008), and therefore this study will emphasize how the two genders are affected by sexual abuse. This study further aims to clarify how the effects of sexual abuse appear in Icelandic society. Based on the literature reviewed above the following hypothesis are put forward:

1. The frequency of sexual abuse will be higher among adolescents who are not in high school than those in high school.
2. The frequency of being drunk will be higher among adolescents who are not in high school than those in high school.

3. Girls (in and out of high school) are more likely to have been sexually abused compared to boys while boys (in and out of school) are more likely than girls to use alcohol very frequently.
4. Adolescents in and out of high school who have been sexually abused are more likely to have frequently used alcohol than adolescents who have not been sexually abused.
5. The link between sexual abuse and frequent alcohol use is stronger for adolescents out of high school than in school.

Method

Participants

This study used data from the 2000 Youth in Iceland (Pálsdóttir et al., 2014), a national survey among Icelandic adolescents in high school, along with the 2001 Youth in Iceland outside of High school (Jónsdóttir, Jónsson, Sigfúsdóttir, Björnsdóttir, & Ásgeirsdóttir, 2003), a national survey among Icelandic adolescents not enrolled in high school, both administered by the Icelandic Centre for Social Research and Analysis (ICSRA). In the 2000 Youth in Iceland, the survey was administered to every student present in class one day in October, 2000. Out of the 12,799 students enrolled in school (Hagstofa Íslands, n.d.) 8,699 individuals completed the survey, with a 68% response rate.

The 2001 Youth in Iceland outside of high school was mailed to a random sample of 2,174 out of the 4,632 Icelandic high school aged (16-19 years old) adolescents not enrolled in high school, of which 745 individuals participated (Jónsdóttir et al., 2003).

In the current study, data from the 745 participants not in school was used along with a randomly selected sample of 2,090 consisting of 16-19 year old participants from the Youth in Iceland high school study. The total number of

participants was 2,835. Table 1 shows the mean age (M) and standard deviation (SD) of the participants (although three participants did not disclose their age) in the current study by educational status (whether in school or not) and by gender.

Table 1

Age and number of participants based on gender and educational status

	Male		Female	
	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>
Not in High School	355	17.95 (0.946)	386	17.97 (0.97)
In High School	947	17.20 (1.09)	1108	17.28 (1.11)
Total	1329	17.40 (1.10)	1494	17.46 (1.12)

Measures

The current study focused on measures regarding educational status, age, gender, sexual abuse and alcohol intoxication. The Youth in Iceland studies consisted of 151 question (Youth in Iceland 2000) and 106 question (Youth in Iceland out of school) questionnaires. All questions relevant to the current study were identical in both studies.

Educational status. Participants were split into groups regarding their educational status. Those outside of high school got the value 0 and individuals in high school got the value 1.

Age. There was a straight forward question asking what year participants were born. The options ranged from “1970” to “1986” and an open-ended option, “other, the year 19__”. The current study only included individuals who were 16 to 19 years of age at the time of administration. Those born in the years 1981 (19 years old) to

1984 (16 years old) were therefore included in the current study. Individuals who were 16 years of age at the year of participation got the value 1, those who were 17, the value 2, individuals who were 18 got the value 3 and those who were 19 years of age got the value 4.

Sexual abuse. One question was used to measure sexual abuse. It asked “How often have you been sexually abused”. The options were “Never”, “1 time”, “2-3 times”, “4-6 times”, “7-10 times”, “11-15 times” and “16 times or more”. For this research, participants were split into two groups based on whether they reported having been sexually abused or not. Those who had not been sexually abused got the value 0, and those who had been sexually abused were coded as 1.

Alcohol intoxication. Alcohol consumption was measured with the question: “How often have you been drunk, ever?”. The options for the question were “Never”, “1-2 times”, “3-5 times”, “6-9 times”, “10-19 times”, “20-39 times” and “40 times or more”. This measure has been previously used to assess alcohol consumption among Icelandic adolescents (Kristjánsson, Sigfúsdóttir, Sigfússon, & Pálsdóttir, 2012), although in the present study participants were split into two groups based on whether they had been drunk (excessive intoxication) 40 times or more over their lifetime, or not. Less than 40 times was coded as 0 and forty times or more was coded as 1. More detailed statistical descriptive below.

Research Design and Statistical Analysis

This was a cross-sectional between-subjects study. Since only categorical variables were used, it was decided to use Pearson’s chi square test of independence (Field, 2013). First, a chi square test of independence was run to test the relationship between educational status and sexual abuse, and educational status and excessive alcohol intoxication. Secondly, a chi square test of independence was run to test the

relationship between gender, educational status and sexual abuse on the first hand, and the relationship between gender, educational status and excessive alcohol intoxication. Another chi-square test was run to test the relationship of educational status, gender, sexual abuse and excessive alcohol intoxication, followed by a linear logistic model to test the relationship among excessive alcohol intoxication, age, educational status and sexual abuse.

The independent variables included age, gender, educational status (in and out of high school) and sexual abuse.

The dependent variable was alcohol intoxication over the lifespan, which was binary, moderate intoxication (less than 40 times) and excessive intoxication (40 times or more).

Procedure

The data for both Youth in Iceland 2000 and Youth in Iceland 2001 outside of school was collected following the regulations of the privacy and data protection authority in Iceland and the National Bioethics Committee of Iceland.

Youth in Iceland 2000. An informed consent was mailed to all guardians of minor high school students in Iceland, and to those high school students who were of age weeks before the survey was administered (Sigfusdottir, Kristjansson, Thorlindsson, & Allegrante, 2008a). The ICSRA sent questionnaires to every high school in Iceland accompanied by specification for teachers regarding administration of the survey. Before participants began the survey, the following was restated to them: The surveys were untraceable, they could skip any question they found uncomfortable, and they could discontinue the survey at any time without any consequences (see Appendix A). Accompanying the questionnaire was a blank

envelope, which participants were instructed to put the survey in, once the survey was completed.

The Youth in Iceland 2001 outside of high school. The original researchers looked in Þjóðskrá (National Registry of Iceland) and found the individuals aged 16-20 who were not enrolled in high school. A random sample of 2174 was mailed the questionnaire, and they were asked to finish the survey at home. As with the previous study, it was reiterated that each survey form could not be traced to individuals as well as that participants were not obligated to answer questions they found discomfiting and that individuals could discontinue participation at any time (see Appendix B). After the questionnaire had been completed, participants sent the survey back to ICSRA free of charge (Jónsdóttir et al., 2003). This study is equivalent to the Youth in Iceland 2000, aside from a few minor changes. The survey involved the same subjects as the previous one but was slightly shorter, or 106 questions long instead of 151.

Results

The number of participants who reported having been sexually abused, based on educational status, are shown in Table 2. Chi square test of independence indicated a significant difference regarding sexual abuse between the in school and out of school groups ($\chi^2(1) = 66.62, p < .001$), where 18.8% of the out of school group reported having experienced sexual abuse, while 7.8% of the in school group reported so. Another chi square test of independence reported a significant difference between the in school and out of school groups ($\chi^2(1) = 126.138, p < .001$) for excessive intoxication, where 50.7% of those out of school had been excessively intoxicated compared to 27.8% of the in school group having been excessively intoxicated.

Table 2

Number and percentages of participants who had been sexually abused and alcohol intoxication forty times or more over lifetime, based educational status

	Out of high school		In high school	
	<i>n</i>	%	<i>n</i>	%
Sexual abuse				
Never	599	81.2	1786	92.2
One time or more	139	18.8	152	7.8
Alcohol intoxication				
Less than 40 times	363	49.3	1480	72.2
40 times or more	373	50.7	571	27.8

Table 3 shows that approximately 4.5% of males out of school reported having been sexually abused, almost 2% of males in school declared having been a victim of sexual abuse. Just over 31% of females out of school reported having been sexually abused compared to only 12.7% of the females in high school. Pearson chi square test showed a significant difference between educational status and sexual abuse for both girls ($X^2(1) = 69.65, p < .001$), and boys ($X^2(1) = 5.488, p = .019$), with girls and boys out of school being more likely to report sexually abusive experiences. The number of participants who reported having being drunk 40 times or more over their lifetime is as well reported in Table 2. Pearson chi square test indicated a significant difference between educational status and excessive drunkenness for both girls ($X^2(1) = 64.06, p < .001$) and boys ($X^2(1) = 61.07, p < .001$) where both girls and boys out of school

were more likely to report having been drunk forty times or more than girls and boys in school.

Table 3

Number and percentages of participants who had been sexually abused and alcohol intoxication forty times or more over lifetime, based on gender and educational status

	Male				Female			
	Out of high school		In high school		Out of high school		In high school	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Sexual abuse								
Never	334	95.4	847	97.9	262	68.2	909	87.3
One time or more	16	4.6	19	2.1	122	31.8	132	12.7
Alcohol intoxication								
Less than 40 times	157	44.6	650	68.3	204	53.7	825	75.5
40 times or more	195	55.4	302	31.7	176	46.3	267	24.5

To test on one hand, if females in and out of school were more likely to have experienced sexual abuse than males, and on the other hand, if males were more likely to be more often drunk than females, another chi square test of independence was run to test for gender differences. A chi square showed a significant difference for both in school group ($X^2(1) = 74.46, p < .001$), where girls in school were more likely to report sexual abuse than boys in school, and the out of school group ($X^2(1) =$

88.73, $p < .001$) where girls out of school were more likely to report sexual abuse than boys out of school.

Finally, when looking for alcohol intoxication over the lifetime, Pearson chi square test indicated a significant difference for both the in school group ($X^2(1) = 13.39, p < .001$), where boys in school were more likely to be excessively intoxicated than girls in school, and the out of school group ($X^2(1) = 3.03, p = .014$), where boys out of school were more likely to be excessively intoxicated than girls out of school. See Table 3 for descriptives.

Table 4 and Table 5 show the relationship between sexual abuse and excessive alcohol intoxication for girls in and out of school (Table 4), and boys in and out of school (Table 5). For girls, those who had been sexually abused were more likely to have been excessively intoxicated over their lifetime, both for in school group ($X^2(1) = 33.52, p < .001$) and out of school group ($X^2(1) = 5.18, p = .023$). For the in school group 45% of girls who had been sexually abused had been excessively intoxicated compared to the out of school group, where 55% of those who had been sexually abused, had been excessively intoxicated.

For boys, the differences between the groups were not significant, hence those who reported having being sexually abused were not significantly more likely to report excessive drinking.

To test if the relationship between sexual abuse and drunkenness was statistically stronger for females in school than out of school, a logistic regression model was conducted controlling for age (see Table 6). A logistic regression was not run for boys since the chi square did not report a significant difference for in school and out of school.

Table 4

Number and percentage of female participants who reported being drunk forty times or more over lifetime based educational status and whether they had been sexually abused or not

	In school				Out of school			
	Sexual abuse		No sexual abuse		Sexual abuse		No sexual abuse	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Intoxication								
Less than 40 times	71	55.0	707	78.5	54	45.0	149	57.5
40 times or more	58	45.0	194	21.5	66	55.0	110	45.2

Table 5

Number and percentage of male participants who reported being drunk forty times or more over lifetime based educational status and whether they had been sexually abused or not

	In school				Out of school			
	Sexual abuse		No sexual abuse		Sexual abuse		No sexual abuse	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Intoxication								
Less than 40 times	13	68.4	591	68.5	4	25.0	150	45.3
40 times or more	6	31.6	272	31.5	12	75.0	181	54.7

A logistic regression without interaction was first performed to ascertain the effects of sexual abuse and educational status on the likelihood that girls had been excessively intoxicated (forty times or more) during their lifetime, controlling for age (See Table 6). The logistic regression model was statistically significant, $\chi^2(3) = 152.095, p < .001$. The model explained between 11% (Cox & Snell R^2) to 16%

(Nagelkerke R^2) of the variance in excessive alcohol intoxication and correctly classified 69.7% of cases. Sensitivity was 19.6% and specificity was 91.5%. Of the three predictor variables, all of them were statistically significant, age, educational status and sexual abuse (as shown in Table 6). Increasing age was associated with an increased likelihood of excessive alcohol intoxication. Girls who had been sexually abused were more likely to frequently become excessively intoxicated than girls who had not been sexually abused. Girls in school were less likely to have been frequently intoxicated than girls out of school.

The model was run again with the same variables but an interaction term was added for sexual abuse and educational status to examine whether sexual abuse for girls was a stronger indicator of excessive alcohol use over the lifetime for girls out of school than for girls in school. The interaction effect between sexual abuse and educational status was not significant, indicating that the relationship between sexual abuse and excessive alcohol intoxication was not significantly different for those in and out of school.

Table 6

Logistic regression model for girls using sexual abuse and educational status to predict alcohol intoxication forty times or more over the lifetime, controlling for age

	Model 1:			
	<i>b</i>	SE	<i>p</i>	Exp(B)
Age	.505	.059	<.001	1.656
Sexual abuse	.569	.229	.013	1.767
Educational status	-.703	.156	<.001	.495
Constant	-1.832	.223	<.001	.106
Cox & Snell R^2	.113			
Nagelkerke R^2	.160			

Discussion

The aim of current study was to clarify how the effects of sexual abuse appear in Icelandic adolescents in relation to gender, educational status and alcohol use. As hypothesized, adolescents out of school were more likely to have experienced sexual abuse than adolescents in school, and this was true for both boys and girls. This is in line with Harris' (1983) and Edgardh and Ormstad's findings (2000), where adolescents who had discontinued their education were more likely to report experiencing sexual abuse than adolescents still in school.

The second hypothesis was also supported, where adolescents out of school were more likely to have been excessively intoxicated than adolescents in school. Again, this was true for both genders. This aligned with Wichstrøm (1998) findings, where Norwegian adolescents who had discontinued their education were twice as often intoxicated than individuals still in school. The current findings revealed that individuals not in school had been just over twice as often excessively intoxicated than participants who were still in school. As mentioned earlier, Crum et al., (1993) found that adults who had discontinued their education were more likely to develop alcohol abuse than others who finished further education (high school or college). However, the current study indicates that excessive alcohol use may start earlier than adulthood.

The third hypothesis was supported, where girls in and out of school were more likely to be sexually abused compared to boys, while boys were more likely than girls to use alcohol very frequently. This pattern of sexual abuse has been demonstrated multiple times before (Afifi et al., 2014; Barth et al., 2013; Dube et al., 2005; Finkelhor et al., 2014; Molnar et al., 2001; Tomnys & Shields, 2016), where girls are more likely to have experienced sexual abuse. The fact that boys were more

likely than girls to use alcohol very frequently is in line with previous studies, such as Tonmyr and Shields' (2016) study.

The fourth and fifth hypothesis were both partially supported, as although there was no significant difference in alcohol use among boys based on sexual abuse, there was a difference among the girls. Girls out of school who had been sexually abused were more likely to use alcohol more frequently than girls out of school who had not been sexually abused. The same was true among girls in school, although this difference was non-significantly larger. This slight difference could indicate that the school environment is only a protecting factor for girls who have not been sexually abused. This has been demonstrated before (Ásgeirsdóttir, 2011; Edghard & Ormstad, 2000; Langeland & Hartgers 1998; Tonmyr & Shields, 2016), for example Ullmann et al. (2005) revealed that sexually abused women were more likely than non-abused women to drink. It was considered as a coping mechanism. However, as in Langeland and Hartgers' (1998) study, the evidence for boys was insufficient, due to the fact that a very low number of the boys in this study had been sexually abused. Because of this, the requirements for further statistical analysis were not met.

The current study had some limitations. For example, the Youth in Iceland 2001 outside of high school had a relatively low response rate compared to Youth in Iceland, 2000 in high school. Individuals outside of high school were more difficult to contact since the questionnaire was a mail survey. It is known that mail surveys have a lower response rate than paper and pen surveys (Jónsdóttir et al., 2003).

Another limitation is that 5.6% of the participants did not answer the question about sexual abuse, and the reasons for not answering are unknown. Sexual abuse is a very sensitive subject so fixing this problem would take some care. This could for example be done by asking about various versions of sexual abuse.

This low response rate could also be due to how the sexual abuse question was put into words. The Icelandic term “kynferðisleg misnotkun” is a relatively strong term. It was translated to “sexual abuse”, but it could just as easily be translated to “sexual molestation”. Also, the individual’s impression about what is classified as sexual abuse can vary. Some individuals might not classify one act as a sexual abuse, while others might. No explanation of what “sexual abuse” means was given to participants, so the term was left to their own interpretation. This could be considered both as a strength and a limitation. In further research, it would be interesting to see whether changing the wording would make a difference, for example, do boys interpret the word differently from girls?

Despite these limitations, this study provides a large sample size, reaching most high school aged students in Iceland. This means that the participation of both genders is fairly equal, although more girls than boys participated in the Youth in Iceland 2001 (out of school). The sample also included both urban and rural areas, providing a comprehensive picture.

Recently, the focus of research on those who discontinue their education before finishing high school has moved away from alcohol abuse towards substance abuse (Kelly et al., 2015; Patrick, Schulenberg, & O’Malley, 2016; Tomnøy & Shields, 2016; Zimmerman & Schmeelk-Cone, 2003). However, in the current study, alcohol was strongly connected to both educational status and sexual abuse. Although alcohol use among Icelandic adolescents has decreased (Sigfusdóttir, Kristjánsson, Thorlindsson, & Allegrante, 2008b) it is still an important subject. It should stay as a relevant fixture in future research in relation to adolescents’ education.

It is important to not forget this minority of adolescents who discontinue their high school education, especially in relation to sexual abuse. In recent years, sexual

abuse among both genders has gotten increased attention from the media and the community in Iceland. This is believed to have led to the increase in reported cases of sexual abuse to the Government Agency for Child Protection in Iceland (Barnaverndarstofa, 2014). With increased cases the need for continued studies in these fields is crucial.

The fact that one in every three girls out of high school in Iceland has been sexually abused (as opposed to only one in ten of girls in school) is striking. This calls for that elementary schools in Iceland pay attention to and follow up on students who show the signs of having experienced sexual abuse and ensure that those individuals get the help and support they need, as a preventive factor for negative behavior, such as leaving school and excessive alcohol use. It is imperative for a healthy community as healthy adolescents later become positive contributors to the society.

References

- Afifi, T. O., MacMillan, H. L., Boyle, M., Taillieu, T., Cheung, K., & Sareen, J. (2014). Child abuse and mental disorders in Canada. *CMAJ: Canadian Medical Association Journal*, 186(9), E324–E332.
<https://doi.org/10.1503/cmaj.131792>
- Arellano, C. M., Chavez, E. L., & Deffenbacher, J. L. (1998). Alcohol use and academic status among Mexican American and White non-Hispanic adolescents. *Adolescence*, 33(132), 751–60.
- Ásgeirsdóttir, B. B. (2011). Kynferðislegt ofbeldi gegn börnum sem áhættuþáttur tilfinninga- og hegðunarvandamála. In S. Í. Ólafsdóttir (Ed.), *Hinn launhelgi glæpur: Kynferðisbrot gegn börnum* (pp. 269–296). Reykjavík: Háskólaútgáfan.
- Ashby, B. D., & Kaul, P. (2016). Post-traumatic Stress Disorder After Sexual Abuse in Adolescent Girls. *Pediatric and Adolescent Gynecology*, 29, 531–536.
<https://doi.org/http://dx.doi.org/10.1016/j.jpag.2016.01.127>
- Barnaverndarstofa. (2014). *Ársskýrsla 2012-2013*. Barnaverndarstofa. Retrieved from http://www.bvs.is/media/arsskyrslur/Barnaverndarstofa_2012-2013.pdf
- Barnaverndarstofa. (2016). *Skýrsla um samanburð fyrstu níu mánuði áranna 2014 - 2016* (pp. 1–16). Retrieved from <http://www.bvs.is/media/samanburdarskyrslur-tolulegar-uppl/Skyrsla-um-samanburd-fyrstu-niu-manudi-aranna-2014-og-2016.pdf>
- Barth, J., Bermetz, L., Heim, E., Trelle, S., & Tonia, T. (2013). The current prevalence of child sexual abuse worldwide: a systematic review and meta-analysis. *International Journal of Public Health*, 58(3), 469–483.
<https://doi.org/10.1007/s00038-012-0426-1>

Clark, D. B., Bellis, M. D. D., Lynch, K. G., Cornelius, J. R., & Martin, C. S. (2003).

Physical and sexual abuse, depression and alcohol use disorders in
adolescents: onsets and outcomes. *Drug & Alcohol Dependence*, 69(1), 51–60.

[https://doi.org/10.1016/S0376-8716\(02\)00254-5](https://doi.org/10.1016/S0376-8716(02)00254-5)

Crum, R. M., Helzer, J. E., & Anthony, J. C. (1993). Level of education and alcohol

abuse and dependence in adulthood: a further inquiry. *American Journal of
Public Health*, 83(6), 830–837.

Dee, T. S., & Evans, W. N. (2003). Teen Drinking and Educational Attainment:

Evidence from Two-Sample Instrumental Variables Estimates on JSTOR.

Journal of Labor Economics, 21(1), 178–209. [https://doi.org/DOI:](https://doi.org/DOI:10.1086/344127)

10.1086/344127

Dube, S. R., Anda, R. F., Whitfield, C. L., Brown, D. W., Felitti, V. J., Dong, M., &

Giles, W. H. (2005). Long-Term Consequences of Childhood Sexual Abuse
by Gender of Victim. *American Journal of Preventive Medicine*, 28(5), 430–

438. <https://doi.org/doi:10.1016/j.amepre.2005.01.015>

Edgardh, K., & Ormstad, K. (2000). Prevalence and characteristics of sexual abuse in

a national sample of Swedish seventeen-year-old boys and girls. *Acta*

Paediatrica, 89(3), 310–319. <https://doi.org/10.1080/080352500750028456>

Epstein, J. H., Saunders, B. E., Kilpatrick, D. G., & Resnic, H. S. (1998). PTSD as a

mediator between childhood rape and alcohol use in adult women. *Child*

Abuse & Neglect, 22(3), 223–234. [https://doi.org/doi:10.1016/S0145-](https://doi.org/doi:10.1016/S0145-2134(97)00133-6)

2134(97)00133-6

Ferguson, D. M., Boden, J. M., & Horwood, L. J. (2008). Exposure to childhood

sexual and physical abuse and adjustment in early adulthood. *Child Abuse &*

Neglect, 32, 607–619. <https://doi.org/doi:10.1016/j.chiabu.2006.12.018>

- Field, A. (2013). *Discovering statistics using IBM SPSS Statistics: And sex and drugs and rock n' roll* (fourth). London: Sage.
- Finkelhor, D., Shattuck, A., Turner, H. A., & Hamby, S. L. (2014). The Lifetime Prevalence of Child Sexual Abuse and Sexual Assault Assessed in Late Adolescence. *Journal of Adolescent Health, 55*, 329–333.
- Fleming, J., Mullen, P. E., Sibthorpe, B., & Bammer, G. (1999). The long-term impact of childhood sexual abuse in Australian women. *Child Abuse & Neglect, 23*(2), 145–159. [https://doi.org/10.1016/S0145-2134\(98\)00118-5](https://doi.org/10.1016/S0145-2134(98)00118-5)
- Goldstein, A. L., Henriksen, C. A., Davidov, D. M., Kimber, M., Pitre, N. Y., & Afifi, T. O. (2013). Childhood Maltreatment, Alcohol Use Disorders, and Treatment Utilization in a National Sample of Emerging Adults. *Journal of Studies on Alcohol and Drugs, 74*(2), 185–194.
- Grossman, F. K. (2008). 'I keep that Hush-Hush': Male Survivors of Sexual Abuse and the Challenges of Disclosure. *Journal of Counseling Psychology, 55*(3), 333–345. <https://doi.org/DOI: 10.1037/0022-0167.55.3.333>
- Hagstofa Íslands PX-Web - Tafla. (n.d.). Retrieved 20 December 2016, from http://px.hagstofa.is/pxis/pxweb/is/Samfelag/Samfelag__skolamal__3_framhaldsskolastig__0_fsNemendur/SKO03108.px/table/tableViewLayout1/?rxid=346c5ef0-6802-4bfe-bad5-7496daf95771
- Harris, L. H. (1983). Role of Trauma in the Lives of High School Dropouts. *Children & Schools, 5*(2), 77–88. <https://doi.org/doi: 10.1093/cs/5.2.77>
- Harrison, P. A., Fulkerson, J. A., & Beebe, T. J. (1997). Multiple substance use among adolescent physical and sexual abuse victims. *Child Abuse & Neglect, 21*(6), 529–539. [https://doi.org/10.1016/S0145-2134\(97\)00013-6](https://doi.org/10.1016/S0145-2134(97)00013-6)

Jónsdóttir, S. N., Jónsson, S. H., Sigfúsdóttir, I. D., Björnsdóttir, H. H., &

Ásgeirsdóttir, B. B. (2003). *Utanskólarannsókn, Félagsleg staða ungmenna utan framhaldsskóla og samanburður við jafnaldra þeirra í framhaldsskólum* (pp. 1–121). Reykjavík: Rannsóknir & Greining. Retrieved from http://www.ru.is/publications/ICSRA/Utanskolarannsokn_2003.pdf

Kelly, A. B., Evans-Whipp, T. J., Smith, R., Chan, G. C. K., Toumbourou, J. W.,

Patton, G. C., ... Catalano, R. F. (2015). A longitudinal study of the association of adolescent polydrug use, alcohol use and high school non-completion. *Addiction*, 110(4), 627–635. <https://doi.org/10.1111/add.12829>

Koch, S. F., & Mcgeary, K. A. (2005). The Effect of Youth Alcohol Initiation on High School Completion. *Economic Inquiry*, 43(4), 750–765. <https://doi.org/10.1093/ei/cbi052>

Kristjánsson, Á. L., Sigfúsdóttir, I. D., Sigfússon, J., & Pálsdóttir, H. (2012).

Vímuefnaneysla unlinga í efstu. Reykjavík: Rannsóknir & Greining. Retrieved from <http://www.rannsoknir.is/download/vimuefnaneysla-unglinga-i-efstu-bekkjum-grunnskola-a-islandi-1997-2012/?wpdmdl=713>

Langeland, W., & Hartgers, C. (1998). Child sexual and physical abuse and

alcoholism: a review. *Journal of Studies on Alcohol*, 59(3), 336–348.

Maniglio, R. (2009). The impact of child sexual abuse on health: A systematic review of reviews. *Clinical Psychology Review*, 29(7), 647–657. <https://doi.org/http://dx.doi.org/10.1016/j.cpr.2009.08.003>

Molnar, B. E., Buka, S. L., & Kessler, R. C. (2001). Child sexual abuse and

subsequent psychopathology: Results from the National Comorbidity Survey. *American Journal of Public Health*, 91(5), 753–60.

- Newcomb, M. D., Abbott, R. D., Catalano, R. F., Hawkins, J. D., Battin-Pearson, S., & Hill, K. (2002). Mediation and deviance theories of late high school failure: Process role.... EBSCOhost. *Journal of Counseling Psychology*, 49(2), 172–186.
- Pálsdóttir, H., Guðmundsdóttir, M. L., Sigfússon, J., Sigfúsdóttir, I. D., Kristjánsson, Á. L., & Þórisdóttir, I. E. (2014). *Ungt fólk 2013* (pp. 1–194). Rannsóknir & Greining.
- Patrick, M. E., Schulenberg, J. E., & O'Malley, P. M. (2016). High School Substance Use as a Predictor of College Attendance, Completion, and Dropout: A National Multicohort Longitudinal Study. *Youth & Society*, 48(3), 425–447.
<https://doi.org/10.1177/0044118X13508961>
- Sigfusdottir, I. D., Kristjansson, A. L., Thorlindsson, T., & Allegrante, J. P. (2008a). Trends in prevalence of substance use among Icelandic adolescents, 1995–2006. *Substance Abuse Treatment, Prevention, and Policy*, 3, 12.
<https://doi.org/10.1186/1747-597X-3-12>
- Sigfusdottir, I. D., Kristjansson, A. L., Thorlindsson, T., & Allegrante, J. P. (2008b). Trends in prevalence of substance use among Icelandic adolescents, 1995–2006. *Substance Abuse Treatment, Prevention, and Policy*, 3, 12.
<https://doi.org/10.1186/1747-597X-3-12>
- Southwick Bensley, L., Van Eenwyk, J., Spieker, S. J., & Schoder, J. (1999). Self-reported abuse history and adolescent problem behaviors. I. antisocial and suicidal behaviors. *Journal of Adolescent Health*, 24(3), 163–172.
[https://doi.org/10.1016/S1054-139X\(98\)00111-6](https://doi.org/10.1016/S1054-139X(98)00111-6)
- Tonmyr, L., & Shields, M. (2016). Childhood sexual abuse and substance abuse: A gender paradox? *Child Abuse & Neglect*. Retrieved from <http://ac.els->

cdn.com/S0145213416302551/1-s2.0-S0145213416302551-

main.pdf?_tid=1361b7ae-c3a6-11e6-89ea-

00000aab0f27&acdnat=1481903053_35ea54cb69264c07628e0ba7dcc63d49

Ullman, S. E., Filipas, H. H., Townsend, S. M., & Starzynski, L. L. (2005). Trauma Exposure, Posttraumatic Stress Disorder and Problem Drinking in Sexual Assault Survivors. *Journal of Studies on Alcohol*, 66(5), 610–619.

VandenBos, G. . (2007). APA Dictionary of Psychology. *APA Dictionary of Psychology*. Washington DC: American Psychological Association.

WHO | Child maltreatment. (n.d.). Retrieved 19 December 2016, from

<http://www.who.int/mediacentre/factsheets/fs150/en/>

Wichstrøm, L. (1998). Alcohol intoxication and school dropout. *Drug and Alcohol Review*, 17(4), 413–421.

Zimmerman, M. A., & Schmeelk-Cone, K. H. (2003). A Longitudinal Analysis of Adolescent Substance Use and School Motivation Among African American Youth. *Journal of Research on Adolescence (Wiley-Blackwell)*, 13(2), 185–210. <https://doi.org/10.1111/1532-7795.1302003>

Appendix A

Youth in Iceland in high school, 2000

Informed consent

Kæri framhaldsskólanemi

Í þessu hefti eru spurningar sem þú ert beðin(n) að svara. Þær fjalla um skoðanir þínar á ýmsum málum og um hvað þú hefur fyrir stafni. Hugsanlega hefur þú áður tekið þátt í könnunum um svipað efni en við vonum samt að þú svarir þessari af samviskusemi, því svör þín skipta miklu máli. Mikilvægt er að þú svarir eins og þér finnst best því það eina sem skiptir máli er að þínar skoðanir komi fram.

Við flestum spurningunum eru nokkrir svarmöguleikar og þú þarft aðeins að velja einn þeirra. Settu kross í reitinn við það svar sem þú hefur valið. Best er að nota bláan penna. Ekki fylla alveg út í reitina sem þú merkir í. Ef þú skiptir um skoðun og vilt breyta svari við einhverri spurningu er best að fylla reitinn alveg út þannig að ekkert hvítt sjáist. Á fáeinum stöðum eru ekki gefin svör og þar ertu beðin(n) að skrifa þitt eigið svar. Þar þarftu að skrifa mjög greinilega og helst nota prentstafi. Þú ræður því auðvitað hvort þú svarar einstökum spurningum en við biðjum þig samt að svara þeim öllum eftir bestu getu. Ef þér finnst enginn svarmöguleiki í einhverri spurningu eiga nákvæmlega við um þig merktu þá við þann svarmöguleika sem þér finnst komast næst sannleikanum.

Svör þín verða trúnaðarmál, það er að segja, enginn sem þekkir þig, hvorki kennarar þínir né foreldrar, kunningjar eða vinir, munu nokkurn tíma fá að sjá svör þín eða fá að vita hvernig þú svaraðir. Gættu þess því að skrifa *hvorki nafn þitt né kennitölu* á spurningalistann eða umslagið sem honum fylgir. Þegar þú hefur lokið við að svara öllum spurningunum, settu þá listann í umslagið, límdu vel fyrir og skildu eftir á borðinu. Umslögnum verður síðan safnað saman þegar allir hafa lokið við að svara listunum.

Ef þú hefur einhverjar spurningar um spurningalistann, lokaðu þá listanum þínum og réttu upp hönd. Starfsmaður eða kennari kemur þá með óútfyllt eintak af spurningalistanum og þú getur því leitað ráða án þess að viðkomandi sjái þín svör.

Með kærri þökk fyrir þátttökuna,

Starfsfólk Rannsóknna & greiningar

The independent variable gender

1. Ert þú strákur eða stelpa?☐ Strákur ☐ Stelpa

The independent variable age

2. Hvaða ár ert þú fædd(ur)?

<input type="checkbox"/> 1986	<input type="checkbox"/> 1980
<input type="checkbox"/> 1985	<input type="checkbox"/> 1979
<input type="checkbox"/> 1984	<input type="checkbox"/> 1978
<input type="checkbox"/> 1983	<input type="checkbox"/> 1977
<input type="checkbox"/> 1982	<input type="checkbox"/> 1976
<input type="checkbox"/> 1981	<input type="checkbox"/> 1975

<input type="checkbox"/> 1974
<input type="checkbox"/> 1973
<input type="checkbox"/> 1972
<input type="checkbox"/> 1971
<input type="checkbox"/> 1970
<input type="checkbox"/> annað, árið 19 _____

76. Hve oft hefur þú orðið drukkin(n)? (Merktu í EINN reit í HVORUM lið)

[illegible]

148. Hefur þú einhvern tíma orðið fyrir kynferðislegri misnotkun?(Merktu í EINN reit eftir því sem við á)

[illegible]

Appendix B

Informed consent

- Trúnaðarmál -*Ágæti viðtökandi*

Í þessu hefti eru spurningar sem þú ert beðin(n) að svara. Við biðjum þig um að svara af samviskusemi því svör þín skipta miklu máli. Mikilvægt er að þú svarir eins og þér finnst best því það eina sem skiptir máli er að þínar skoðanir komi fram.

Við flestum spurningunum eru nokkrir svarmöguleikar og þú þarft aðeins að velja einn þeirra. Settu kross í reitinn við það svar sem þú hefur valið. Best er að nota bláan penna. Ekki fylla alveg út í reitina sem þú merkir í. Ef þú skiptir um skoðun og vilt breyta svari við einhverri spurningu er best að fylla reitinn alveg út þannig að ekkert hvítt sjáist. Á fäcinum stöðum eru ekki gefin svör og þar ertu beðin(n) að skrifa þitt eigið svar. Þar þarftu að skrifa mjög greinilega og helst að nota prentstafi. Þú ræður því auðvitað hvort þú svarar einstökum spurningum en við biðjum þig samt að svara þeim öllum eftir bestu getu. Ef þér finnst enginn svarmöguleiki í einhverri spurningu eiga nákvæmlega við um þig, merktu þá við þann svarmöguleika sem þér finnst komast næst sannleikanum.

Svör þín verða trúnaðarmál, það er að segja, enginn sem þekkir þig, hvorki foreldrar, kunningjar eða vinir, munu nokkum tíma fá að sjá svör þín eða fá að vita hvernig þú svaraðir. Gattu þess því að skrifa *hvorki nafn þitt né kennitölu* á spurningalistann eða umslagið sem honum fylgir. Þegar þú hefur lokið við að svara öllum spurningunum, settu þá listann í umslagið, límdu vel fyrir og komdu því í næsta póstkassa.

Með kærri þökk fyrir þátttökuna,

Starfsfólki Rannsóknena & greiningar

Hafðu endilega samband ef þú óskar aðstoðar; sími: 535-3800, netfang: rannsokenir@rannsokenir.is

Rannsóknir & greining

The independent variable gender

1. Ert þú strákur eða stelpa?

☐ Strákur ☐ Stelpa

The independent variable age

2. Hvaða ár ert þú fædd(ur)?

☐ 1984

☐ 1983

☐ 1982

☐ 1981

☐ Annað, árið 19 _____

59. Hve oft hefur þú orðið drukkin(n)? (Merktu í EINN reit í HVORUM lið)

[illegible]

103. Hefur þú einhvern tíma orðið fyrir kynferðislegri misnotkun? (Merktu í EINN reit eftir því sem við á)

[illegible]