



B.Sc. in Psychology

Self-harm and suicidal behavior among adolescents in Iceland

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Foreword

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

Abstract – English

Adolescents' self-harm and suicide attempts have become a major public health concern in many countries, and their prevalence is increasing among boys and girls. What most research on self-harm and suicide attempts has found is that those who self-harm have experienced some kind of a traumatic life event. The purpose of this study was to investigate the prevalence and gender difference for self-harm and suicidal behavior among adolescents in Iceland and to examine whether negative life events are a possible risk factor, using scores on a negative life events questionnaire (NLE). The data used in the study was pre-existing, collected by ISCRA in 2016. Participants were 6,098 adolescents from multiple secondary schools in Iceland, 3,022 boys and 2,979 girls. Results showed that 19.4% had self-harmed, 27.6% of them had seriously considered committing suicide, and 9.4% had tried to commit suicide. Those who scored highest on the NLE were significantly more likely to have self-harmed, seriously considered attempting suicide, or attempted suicide, than those who got no points on the questionnaire. Girls were also significantly more likely than boys to have ever self-harmed, considered committing a suicide, or attempted suicide.

Keywords: Suicide attempts, self-harm, adolescents, NLE, gender differences

Abstract – Icelandic

Sjálfskaði og sjálfsvígstilraunir á meðal ungmenna er orðið að alvarlegu heilsufarsvandamáli í heiminum og tíðni þess er að aukast. Flestar rannsóknir sem hafa skoðað sjálfsskaða og sjálfsvígstilraunir ungmenna hafa sýnt fram á að ungmenni sem skaða sjálfan sig eða gera tilraunir til sjálfsvígs hafa gengið í gegnum einhvers konar áföll á ævinni. Tilgangur þessarar rannsóknar var að finna tíðni ungmenna á Íslandi sem höfðu skaðað sjálfa sig eða íhugað eða reynt sjálfsvíg, athuga mun á tíðni milli kynja og gá hvort að erfiðir atburðir eða áföll á lífsleiðinni væru hugsanlegur áhættuþáttur. Í rannsókninni voru notuð fyrirliggjandi gögn frá árinu 2016, sem Rannsóknir og greining söfnuðu. Þátttakendur voru 6098 framhaldsskólanemar á Íslandi, 3022 drengir og 2979 stúlkur. Niðurstöðurnar sýndu að 19,4% þeirra höfðu skaðað sjálfa sig, 27,6% þeirra höfðu alvarlega íhugað að fremja sjálfsvíg og 9,4% þeirra höfðu reynt að fremja sjálfsvíg. Þau ungmenni sem fengu flest stig í mælingum á erfiðum atburðum eða áföllum á lífsleiðinni voru marktækt líklegri til þess að hafa skaðað sig eða íhugað eða reynt sjálfsvíg en þau sem fengu engin stig. Þá voru stúlkur marktækt líklegri en drengir til að hafa skaðað sig eða íhugað eða reynt sjálfsvíg.

Lykilhugtök: Sjálfsvígstilraunir, sjálfskaði, ungmenni, áföll, kynjamunur

Non-suicidal self-harm and suicidal behavior among adolescents

Adolescent self-harm has become a major public health concern in many countries (Hawton, Saunders & O'Connor, 2012), and its prevalence is increasing (Morgan et al., 2017). Self-harm needs to be researched further, both as it can be a risk factor for suicide attempts, but also it is important to monitor self-harm in order to identify possible risk factors for self-harm and ways to prevent it (Hawton, Hall & Simkin, 2003). Suicidal behavior among adolescents is fortunately not common (Hawton, Rodham & Evans, 2005), but it is still of high importance to find risk factors and to try to prevent it.

Self-harm

The definition of non-suicidal self-harm varies among research, but in most cases, it is defined as any intentional, self-directed behavior that causes immediate destruction of body tissues, without suicidal intent (Kerr, Muehlenkamp & Turner, 2010; Whitlock, 2010). This self-directed behavior can include many behaviors such as cutting, hitting, pinching, banging or punching walls or other objects to induce pain, breaking bones, ingesting toxic substances, and interfering with healing of wounds (Peterson, Freedenthal, Sheldon & Andersen, 2008). As the definition of self-harm is so unclear, research on the matter is ambiguous, and results, therefore, are not in agreement on important matters such as risk factors, prevalence, and the definition of self-harm.

Self-harm has been divided into three types of behaviors (Favazza, 1996). The first type is major self-harm and usually only occurs with individuals who have severe schizophrenia or are in a state of psychosis because of a drug overdose. Self-harm of this severity is rare but can be very dangerous, such as stabbing something into one's own eyeballs or genital abuse. The second type is stereotypic self-harm, which can

usually be detected in individuals who have some kind of a disability or developmental disorder. In most cases, that kind of behavior is involuntary, such as repeatedly banging their head against a wall. The last type is superficial-to-moderate self-harm, which can be further divided into two categories: impulsive self-harming behavior or compulsive self-harming behavior (Svirko & Hawton, 2007). The compulsive type of self-harm behavior is, for example, hair pulling, scratching oneself, and biting nails or skin around the nails. Such behavior has often become a habit and is repeated multiple times by the individual. Impulsive behavior, on the other hand, is a behavior that occurs occasionally, such as cutting, hitting, or burning own skin.

There are various motivations for self-harm. There can be motivations that are more focused on the environment of the individual, where he or she seems to be asking for attention or help by self-harming (Nock, 2008). If the person feels like they cannot express themselves well enough in words, they might decide that it is necessary to use other methods to express themselves, such as self-harming – actions speak louder than words. Other motivations have to do with the individual themselves and their thoughts and emotions. The individual might self-harm to try to repress some bad feelings, avoid bad thoughts, or to feel any other feeling than numbness, trying to reconnect with their emotions (Nock, 2008).

Some adolescents report that they use self-harm to self-medicate. When a bodily tissue is harmed, endorphins are released into the blood stream and function as a natural painkiller. The individuals then feel relieve of tension, and that often starts a vicious circle where the individual feels pain, relieves it by self-harm and afterwards feels shame and self-hatred for participating in the self-destructive behavior (Hicks & Hinck, 2008).

Suicidal behavior and suicidal gestures

The argument used most often to support the distinction between suicide and self-harm is that individuals who engage in self-harm are doing so to try to feel better, manage stress and calm themselves, while those who attempt suicide are trying to end their life (Muehlenkamp & Gutierrez, 2004). Therefore, it could be argued that those who self-harm are still intent on living but have adopted a dysfunctional coping strategy, while those who attempt suicide have given up on life and believe that death is the only option they have (Muehlenkamp & Gutierrez, 2004).

Suicide is defined as the act of intentionally ending one's own life (Nock, 2008). An example is an overdose on drugs on purpose or hanging oneself. If a person has suicidal thoughts, they are classified into three categories (Nock, Borges, Bromet, Cha, Kessler & Lee, 2008). The first category is suicidal ideation, which refers to the thoughts of engaging in behavior that is intended to end one's life but not going through with it – it is merely the idea of ending one's life. The second category is a suicide plan, where the individual has made a formulation of specific methods through which he or she intends to die. The last category is a suicide attempt, where the individual engages in potentially self-injurious behavior where he or she has at least some intention to die. These attempts are in some cases successful and result in death (Nock et al., 2008).

When adolescents commit suicide, it is likely a manifestation of a chronic problem, but sometimes, it can be sudden and without any prior warning (Harrington, 2001). The most significant predisposing factors for suicidal behavior are depression, substance abuse, and previous attempts; some personality traits can also be risk factors as well, such as impulsivity. There are also a few factors that can act as risk factors for suicide attempts in adolescents. They can be acute events such as a sudden

heartbreak or getting caught doing something illegal, as well as factors that alter the mind, such as intoxication or marked hopelessness. These factors coupled with opportunity to commit suicide can result in suicide attempts (Harrington, 2001).

Prevalence and gender differences

There exists very limited research on gender difference regarding self-harming behavior, and the findings of those that exist are very equivocal (Laye-Gindhu & Reichl, 2005), where some of them show that women self-harm more, while other show no gender difference. Not only is it necessary to research the difference in prevalence between genders further, but also to see whether there is a difference in the way the genders self-harm, as men tend to be more violent towards themselves and their self-harm behavior is more often misdiagnosed as accidental compared to woman's self-harming behavior (Taylor, 2003).

Suicide attempts, on the other hand, are more frequent among females, with females being 3–9 times more likely to attempt suicide. Even so, successful suicides are 2–4 times more frequent among males. That might have to do with their attempts being more serious and success oriented, such as gunshots or hanging, while females are more prone to using pills (Wunderlich, Bronisch, Wittchen & Carter, 2008).

Negative life events

Negative life events have been associated with increased risk of suicide ideations and suicide attempts among adolescents (Liu, Frazier, Cataldo, Simon, Spirito & Prinstein, 2014). Those events can be of different kinds, such as abuse (Hawton, Rodham & Evans, 2005), exposure to violence or sexual assault, divorce of parents, or the death of a family member (Song, Singer and Anglin, 1998). These events can have all kinds of effects, such as low self-esteem, heightened sense of vulnerability, and sensitivity to environmental threat, constricted emotions, and

excessive worries (Armsworth & Holaday, 1993). Stressful or negative life events have been statistically significantly associated with self-harming behavior among adolescents, where the suicide or self-harm of someone close to you was the life event most strongly related to self-harm, followed closely by sexual abuse (Madge et al, 2011).

The current study

The purpose of this study was to investigate the prevalence of self-harm and suicidal ideation among Icelandic secondary school students and see whether there was a significant difference between boys and girls. The hypotheses of the study were:

- 1) Girls self-harm more than boys.
- 2) Girls have suicide ideations and attempt suicide more often than boys.
- 3) Experiencing negative life events increases the odds of self-harm or suicide attempts, regardless of gender.

Method

Participants

The study was based on pre-collected data from the population-wide cross-sectional survey of *Youth in Iceland 2016*. The survey was a national, anonymous self-report survey conducted by The Icelandic Center for Social Research and Analysis (ICSRA) (Pálsdóttir, Sigfússon, Krisjánsson, Guðmundsdóttir, Þórisdóttir & Sigfúsdóttir, 2017). A total of 10,717 students participated, in every secondary school in Iceland, which is a 71% response rate. The students were told that they had a choice if they wanted to participate and that if they did participate, they would not receive any reimbursement. The parents or legal guardians of those who were not of age were notified of the research beforehand and given the chance to refuse their child's participation. The sample used in this study consisted of 6,098 adolescents, whereof 50.4% were male ($N = 3,022$) and 48.9% female ($N = 2,979$). 97 students did not report their gender. The reported age of the participants ranged from 14 to 21, with 17.5 years being the mean age ($SD = 1.4$).

Instruments and measures

The questionnaire used in the study was made by ICSRA, addressing various aspects of adolescents' lives, such as progress in school, sports participation, family situation, activities and hobbies, drug use, nutrition, religion, etc. Since the questionnaire was completely anonymous, there was no ethical issue at hand, even though some of the questions were of a very personal matter. The questionnaire contained 85 questions in total on 29 pages, and the questions had sub-questions of different lengths, from 1 sub-question to 21 sub-questions. Apart from gender, there were 4 questions used in this research. The questions concerned the frequency of self-harm among the students, suicidal ideations or suicide attempts, and negative life events the students might have experienced at some point in life.

Gender. The question about gender had 2 possible answers, 1 = “male” or 2 = “female”.

Self-harm. One question was used to measure self-harm: “Have you ever in your life self-harmed?” That question was answered on a 5-point Likert scale, ranging from “Never” to “5 times or more often”. In this study, the answers were recoded and were afterwards only in two categories, “Yes” or “No”, so all the answers that contained any number of self-harm were put together in one category.

Suicide attempts. One question was used to measure suicide attempts: “Have you ever attempted suicide?” The question had only “Yes” or “No” answers.

Suicide ideations. One question was used to measure suicide ideations among the adolescents. That question was “Have you ever seriously considered attempting suicide?” The question was a two-category question of “Yes” or “No”.

Negative life events. The question about negative life events had 21 sub-questions, all regarding experience the students might have gone through in their life, where the main question was: “Have you ever had the following experiences?” The 21 sub-questions had 4 different choices of answer, “Yes, in the last 30 days”, “Yes, in the last 12 months”, “Yes, more than 12 months ago”, or “No”. In this study, all the responses that contained “Yes”, indifferent of when, were recoded into one variable of yes, to make the answers a two-category variable of “Yes” and “No”. Afterwards, all the sub-questions were weighted, to give more serious life events more value than those that were less serious. The negative life event questionnaire has been used in previous research (Mann, Kristjansson, Smith & Sigfusdottir, 2016), and the method that was used in that research to weigh the questionnaire was also used in this study. Three questions were not considered very influential and were given the value of 1, as they were considered the least serious life events (had a serious argument with your

parent, received an exceptionally low grade, witnessed a serious argument by your parents). Six questions were given the value 2 (Had a severe illness, witnessed physical violence in your home where an adult was involved, broke up with a girlfriend/boyfriend, been rejected by your friends, separated from a friend, had a father or mother lose a job), while 5 questions were considered more serious and given the value 3 (been involved in a serious accident, experienced a separation or divorce of your parents, been expelled from school, had a friend die, been involved in physical violence in your home where an adult was involved). Only three questions were considered serious enough to receive the value 4 (the death of a parent or sibling, experienced sexual abuse by peer, experienced sexual abuse by an adult). Four questions were not included in the previous study and were therefore weighted by the current researcher; the questions were “Have you moved to another neighborhood?” (1), “Have you moved between states?” (1), “Have you been sent to the principal’s office?” (1), and “Have your parents ever been in prison after breaking the law?” (3). The questions were then computed and the weighting was taken into account, so the students score on the negative life event questionnaire consisted of their total score after weighting. The participants’ scores ranged from 0 to 48 points, and to make it possible to use the results for comparison, they were divided into four groups, where those who scored 0 points on the questionnaire were in one group (No NLE), those who scored 1–5 points were in one group (Low NLE score), those who scored 6–10 points were put together in a group (Medium NLE score), and those who scored 11 points or more were in one group (High NLE score).

Procedure

As previously mentioned, the survey was a cross-sectional study conducted by ICSRA. The survey is conducted every 3 years, and the data for the current study was

collected in the year 2016. The survey was conducted on the same day in every secondary school in Iceland in the fall of 2016, and every student that attended school on that day participated in the survey. The teachers of the classes supervised the procedure according to instructions given by ISCRA. The students were asked to answer every question to the best of their ability, informed that they were not obligated to answer all the questions if they didn't want to, and told to ask for help if they needed it. They were also informed that they could stop participation at any time, without any consequences or explanation. The study was completely anonymous, and participants were asked not to put their name, social security number, or any identifying information on the questionnaire in order to ensure that their answers were not traceable in any way. When the students completed the survey, it was put in an envelope, sealed, and sent to ISCRA for data analysis. Permission from the ICSRA was obtained for the use of the data in this study.

Research design and data analysis

SPSS version 24 was used to analyze the data in this study. Crosstabs were used to examine the frequencies of self-harm, serious suicide considerations, and suicide attempts, among boys and girls. A chi-square test was performed to see whether there were any relations between the variables self-harm and gender and whether the relations were significant. The dependent variables in this study were self-harm, serious consideration of a suicide, and suicide attempts, and since they were all two-category variables, binominal logistic regression was used to analyze the data. Logistic regression calculated the odds of someone self-harming, considering suicide, or attempting suicide, based on the independent variables of gender and the participants score on the negative life event questionnaire.

Results

In total, there were 6,098 adolescents who answered the questionnaire from ISCRA. In order to see how many of them had shown any self-destructive behavior in their life, a crosstab report was created. Table 1 shows the number of females and males who had self-harmed, had suicide ideations, and/or attempted suicide at any point in their life. Those who did not report their gender were not included in the table. There was a significant difference between females and males in all three self-destructive behaviors ($p < .001$), and in all cases, the numbers were higher among females than males.

Table 1

Number of participants who had self-harmed, had suicide ideations, and/or attempted suicide

	N	Self-harm	Suicide ideation	Suicide attempt
Females	2979	780 / 26.7%	947 / 32.6%	344 / 11.8%
Males	3022	330 / 11.5%	637 / 22%	203 / 7%
Total	6001	1110 / 19.2%	1584 / 27.4%	547 / 9.4%

After the adolescents completed the weighted negative life event questionnaire, their scores ranged from 0 to 48, ($M= 7.0$, $SD= 7.3$) with 48 being the highest possible score on the questionnaire, and 25 out of 6098 adolescents scored that score. Table 2 shows the four groups that the participants were divided into, according to their results on the negative life event questionnaire. Those with a medium negative life event score were the most populous group, with 31.2% of the total participants, but those who scored low on the questionnaire were of a similar size, 29.5% of the total participants.

Table 2

Score on the negative life event questionnaire, divided into 4 groups

Group	Score	N	%
No NLE	0	964	15.8%
Low NLE	1–5	1798	29.5%
Medium NLE	6–10	1902	31.2%
High NLE	11+	1410	23.1%
Missing answer		24	0.4%
		6098	100%

Logistic regression was used to calculate the odds of someone self-harming, seriously considering suicide, or attempting suicide based on the independent variables of gender and score on the negative life event questionnaire. The logistic regression model was statistically significant for self-harm, $\chi^2(3) = 692.050, p < .001$. The model explained 18.1% (Nagelkerke R^2) of the variance in self-harm and correctly classified 80.9% of cases. As can be seen in Figure 1, girls were 2.8 times more likely than boys to self-harm ($p < .001$), and those who scored high on the negative life event questionnaire were 8 times more likely to self-harm when compared to the no NLE group ($p < .001$). There was also a significant difference between the no NLE group and medium NLE group, ($p < .001$), which was 2.8 times more likely to self-harm, but there was not a significant difference between the no NLE group and the low NLE group ($p = .083$).

The logistic regression model was also statistically significant for suicide ideation, $\chi^2(4) = 668.011, p < .001$. The model explained 15.9% (Nagelkerke R^2) of the variance in suicide ideations and correctly classified 72.6% of cases.

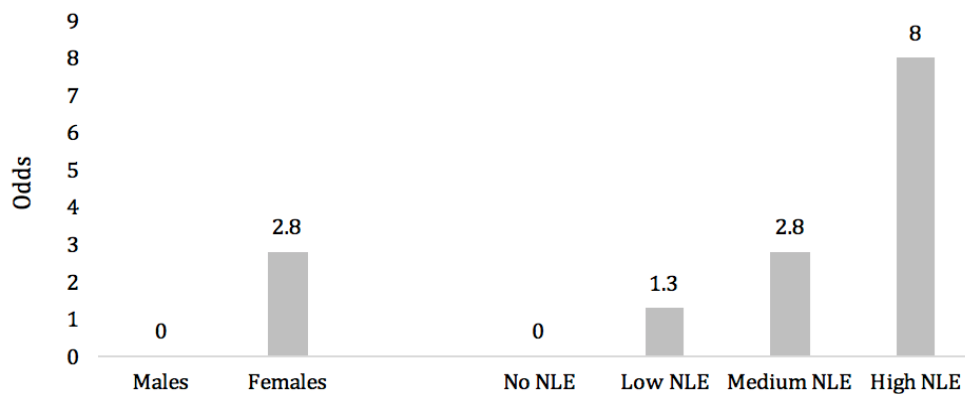


Figure 1. Calculated odds of self-harming, where females were compared to males (0 group) and those who scored low, medium, or high on the negative life event questionnaire were compared to those who scored 0 on the NLE questionnaire (0 group).

Figure 2 shows that girls were 1.6 times more likely to have seriously considered suicide than boys ($p < .001$) and that the likelihood of considering suicide increased consistent with an increased score on the negative life event questionnaire. There was a significant difference between all the groups ($p < .001$) who obtained any scores on the negative life event questionnaire and the no NLE group, and those who scored high on the NLE were 7.7 times more likely to seriously consider suicide when compared to those in the no NLE group.

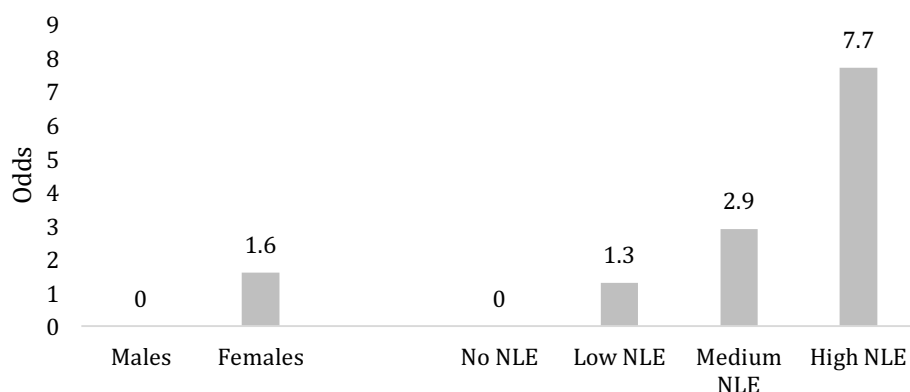


Figure 2. Calculated odds of suicide ideations, with females being compared to males (0 group) and those who scored low, medium, or high on the negative life event questionnaire compared to those who scored 0 on the questionnaire.

Last, the logistic regression was statistically significant for suicide attempts, $\chi^2(4) = 438.279, p < .001$. The model explained 15.8% (Nagelkerke R^2) of the variance in suicide attempts and correctly classified 90.6% of cases. Girls were 1.6 times more likely to have attempted suicide than boys, which can be seen in Figure 3 ($p < .001$). Regarding the negative life event questionnaire, those who scored low were not significantly more likely to attempt suicide than those who were in the no NLE group ($p < .204$), but the medium group was 3.2 times more likely than the no NLE group ($p < .001$), and those who were in the group of high NLE were 12.3 times more likely to have tried to commit suicide than the no NLE group.

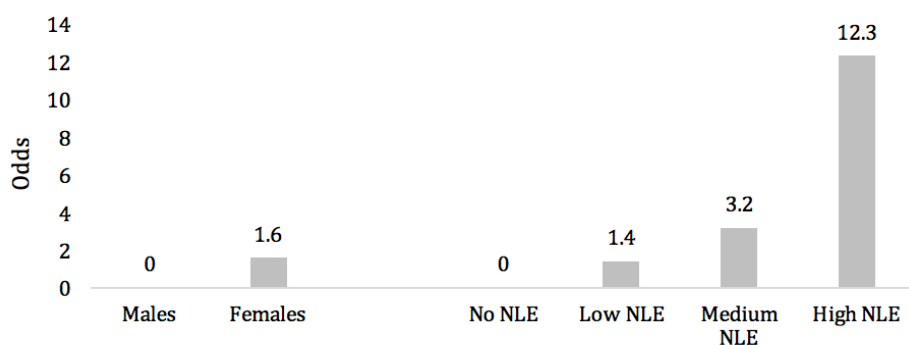


Figure 3. Calculated odds of suicide attempts, with females compared to males (0 group) and those who score low, medium, or high on the negative life event questionnaire compared to those who scored 0 on the negative life event questionnaire (0 group).

Discussion

Prior studies have either indicated that girls might be more prone to self-harm than boys or that no significant difference can be found between the genders (Laye-Gindhu & Reichl, 2005). In this study, there was a significant difference between girls and boys in each of the self-destructive behaviors: self-harm, suicide ideations and suicide attempts; in all cases, girls reported higher numbers than boys. These findings

support the first and the second hypotheses of this study, which predicted girls to self-harm more than boys and girls to be more likely than boys to have serious suicidal ideations or attempt suicide. The gender proportion in this study was equal, so this significant difference between genders cannot be traced to girls being the larger group in the study. Self-harm in adolescents has not been studied before in Iceland, and therefore, there is no data to compare to.

The number of adolescents who had self-harmed was very high (~20%), which is consistent with prior research, claiming self-harm to be one of the major health problems in the world (Hawton, Saunders & O'Connor, 2012). The percentage of girls who self-harm was rather higher than boys in this study (27.6% vs 11.4%), which needs to be further researched in order to see whether girls are reporting higher on any specific risk-factors for self-harm. Those risk-factors might, for example, include that their confidence is lower than boys; that they report more depression, anxiety, or other mental illnesses; or that they have been sexually abused at any point in life (Mars et al, 2014; Fliege, Lee, Grimm & Klapp, 2009).

Adolescents who had seriously considered committing suicide were 27.4% of the sample, whereof girls were a bigger risk than boys. That is very serious matter at hand, as suicide ideations are a big risk factor for suicide attempts, which 9.4% of the adolescents answered that they had tried already. What would have been valuable to know is how large a percent of those 9.4% made an attempt that required medical attention. The fact that these numbers are so great is a very serious matter that needs to be further addressed by health services in Iceland, who will need to identify possible risk factors and try to intervene in order to save lives. In 2014, the rate of suicides in Iceland was 14 per 100,000 residents (World Health Organization, n.d.). That sums to around 45 deaths per year, with the average per 100,000 being much

higher than in Norway and in Denmark, where it is around 9 per every 100,000 residents. This difference is of interest, as the countries are all modern, Nordic countries and rank as the second, third, and fourth happiest countries in the world (Madden, 2018), yet the difference of suicides is significant.

Negative life events have been an indicator for self-harm and suicide attempts in prior research (Liu et al., 2014), and the hypothesis in this study was that there would be an increased risk of self-destructive behavior with increased scoring on the negative life event questionnaire. That hypothesis was supported by the results of this study in all three self-destructive behaviors - self-harm, suicide ideations, and suicide attempts – where those who scored high on the negative life event questionnaire were in all cases significantly more likely to have participated in self-destructive behavior than those who scored 0 on the questionnaire. Therefore, it can be concluded that a high score on the negative life event questionnaire is a possible risk factor for self-destructive behavior if there is no preventive factor taken into account. What needs to be assessed as well is whether the individuals who report high scores on the negative life event questionnaire have had any psychological help, whether they found such help useful, and whether they feel that the negative life events still have impact on their life.

This study has some notable strengths, one of them being the number of participants (71% of all students in secondary school in Iceland) and that the sample is taken from all secondary schools in Iceland, making it a population study. The sample should therefore have a variety of individuals with different backgrounds, which can then be transferred to represent adolescents in Iceland as a whole. The procedure of the data sampling was trustworthy, and the anonymity of the survey increased the probability of truthful answers, since many of them were of a sensitive

matter. Another strength of this study was the use of the negative life event questionnaire, which has been used before and weighted in other studies, and therefore, it can be predicted that the questionnaire covers a big part of negative life events and that its weighting is accurate.

The study also has some limitations. When the participants answered the question about self-harm, they did not report what kind of self-harm they had engaged in. Since the definition of self-harm is so ambiguous, some students might have evaluated some behavior as self-harming in cases where the “official” definition of self-harm would not consider it to be self-harm or vice-versa. Since there was no way to distinguish what kind of self-harming behavior the students had been involved in, it was not possible to delve deeper into that category to figure out whether girls and boys were self-harming in the same way or different ways. Furthermore, it was impossible to say whether younger or older students were self-harming differently or whether some behavior was a better predictor than others for any specific kind of self-harming, e.g. cutting. With the knowledge of what kind of self-harm the students were participating in, it would also be possible to analyze whether there are different risk factors for repetitive self-harm or compulsive self-harm. In addition, the questions regarding suicide could have been more specific, for an example asking how many times they had seriously considered committing suicide, if they had been hospitalized after their attempt, and how they tried to commit a suicide. With that information at hand, it would have been possible to analyze differences in risk-factor amongst those who had been hospitalized and those who had not, and those who had seriously considered suicide multiple times and those who had considered it once.

Future research should focus on longitude studies, where researchers can analyze whether the self-destructive behavior is increasing or decreasing with the

seasons changing, the age of the individuals, or with stressful times such as Christmas or examination period, etc. Research should also focus on different kinds of self-harming behavior and try to associate them with specific risk-factors, as different self-harm behaviors need different preventive methods. Personality of the individuals is also a significant factor that needs to be assessed, and future research should take individuals' results from known and valid personality tests to compare to self-destructive behavior in order to see whether any specific personality factors are risk factors or whether any of them might be protective factors. What is also important to research is other possible protective factors, that is, to examine if sports participation, artistic expression or good relationship with friends, siblings and/or parents, for an example, can be protective factors for self-destructive behavior. Another factor that might be interesting to examine is if there are more adolescents who participate in self-destructive behavior who live in the capital area or who live in smaller towns in the countryside of Iceland.

In conclusion, it seems that self-harm and suicide ideations are a severe problem amongst adolescents in Iceland, which is a health issue to be taken very seriously. Girls are reporting worse results than boys on all of the self-destructive factors in this study, which needs to be researched further, and possible reasons for that difference should be examined in depth. Risk factors for self-destructive behavior need to be identified in order to make preventive plans for adolescents, in order to point them to better solutions than self-harming or suicide attempts. Access to psychologists and/or self-help needs to be better and more accessible, as those who have gone through many negative life events in their life are more likely to be involved in self-destructive behavior, which might possibly be prevented with the help of a professional who could help them work through their experience.

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