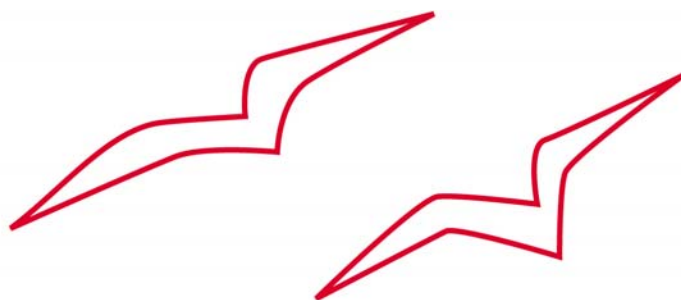


Memorandum on suicidal ideations and suicide attempts among youth in Greenland

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Memorandum on suicidal ideations and suicide attempts among youth in Greenland

In 2004-2005, the National Institute for Public Health and Paarisa (Office of Health and Preventive Measures) conducted a study of well-being among school-age children in seven towns in Greenland. The main findings of this study are published in the report by Tine Curtis et al. entitled *Well-being of Youth in Greenland 2004*, published by the Home Rule Authority's series of working papers, INUSSUK *Greenland Research Journal* 2006:2. Subsequently, MIPI - Documentation Centre on Children and Youth, has commissioned a more detailed analysis of the collected data with special emphasis on suicide behaviour, including the characteristics of those youth who have high levels of well-being and on what the youth themselves believe is necessary so that children can have better social conditions. This memorandum focuses on the risk factors, which might contribute to the presence of suicidal ideations and suicide attempts.

The study comprises 508 youth aged 15-17 and a few 18-year-old school pupils from grades 9-11, 231 boys and 277 girls. The young people answered an electronic questionnaire with both Greenlandic and Danish text and speech.

The Survey of well-being among Youth in Greenland

'Just wake up!' This is the way one Greenlandic teenager ends his response of a survey about youth well-being in Greenland. The exclamation is directed towards the adult part of the Greenlandic population, and is one among many statements by the youth and an appropriate contribution to the ongoing debate about social conditions for children and youth. For several years, Greenland has seen considerable debate about the causes of the many youth suicides and the fact that many children and youth in Greenland experience unstable upbringing conditions with alcohol problems in the family and sexual abuse (Curtis et al. 2006). The Greenlandic media has often projected this image of neglect, but it is rare to hear the voices of the youth on the issue. Therefore, it was decided in 2003 to ask the young people about suicidal behaviour, about traumatic experiences and their well-being within their families, in their free time and in school, and about their health behaviour. Many of the youth who participated in this study expressed the view that they are managing well, and that they themselves have not experienced being treated badly by adults, that they have good social relations, do well in school and can talk with their parents about their problems (Curtis et al. 2006). Nevertheless, the study also shows a very high occurrence of

suicidal ideations and suicide attempts. This memorandum will therefore focus on those youth who have reported having serious suicidal ideations and suicide attempts. The point of departure for the analyses in this memorandum is the assumption that there is an association between suicide behaviour and several social, health-related and life-style variables. These (independent) variables can be divided into six major themes:

- **Socio-demographic factors:** Ethnicity, Age, Parents' education, Language.
- **Upbringing factors:** Urban/Rural residence at age 10, Family living situation (live with foster parents, parents living together), Conflicts with parents, Alcohol problems in the family.
- **Social relations:** Loneliness (to be alone even if you actually want to spend time with someone, Number of close friends, Together with peers/friends after school; Someone to talk to about problems (parents, boy-/girlfriend, peers).
- **Lifestyle factors:** Alcohol use, Number of times intoxicated; Physical activities. .
- **School/leisure time:** Academic performance in school, Enjoy going to school, Leisure time activities, Outdoor activities.
- **Traumatic experiences:** Suicide of boy-/girlfriend or good friend, Subjected to domestic violence Broke-up with boy-/girlfriend, Parents separated, Problems in school, Subjected to sexual abuse.
- **Physical and mental health:** Self-rated health, Symptoms of depression, Body perception, Feelings of energy, Feeling in good spirits.

In a cross-sectional study such as this one, the statistical analyses say nothing about causal relations. In some cases, we can probably assume that the social/health variables are a contributory cause of suicidal behaviour, e.g., for age and sex. In most other cases, it is difficult to determine whether the 'independent' variable is a cause of suicidal behaviour, whether suicidal behaviour is the cause of the 'independent' variable, or whether there is a common cause to both the 'independent' variable and the suicidal behaviour.

In this memorandum, we use term 'suicide behaviour' as a composite designation for both ideations of suicide and actual suicide attempts. 'Suicide behaviour' thus encompasses more than attempts at suicide.

Method of analysis

The analyses have been undertaken separately for boys and girls. The data are initially analysed by cross-tabulations between the 'independent' variables mentioned above and suicidal behaviour and then tested for statistical significance using Pearson's χ^2 test and for a few observations Fisher's Exact Test. The χ^2 test tests for the extent to which there is an association between the selected variables. Hence, when we cite differences between the two groups of youth in the text, it means that a statistical test has revealed that the difference between the two groups does not depend on chance. A significance level of 5% has been used, i.e., that in 95% of the cases, there is a probability that the result occurs within one confidence interval

The participants have been divided into three groups according to their suicide behaviour: youth who have had neither suicidal ideations nor have attempted suicide (N=296); youth who have had only ideations of committing suicide (N=83) and youth who have attempted suicide (N=113). On the basis of the cross-tabulations, some variables have been selected within each theme for a multivariate, logistic regression analysis of suicidal behaviour with the odds ratio (OR) as impact measure. Odds ratio is a measure of the strength of the association between variables. Odds describe how many times one outcome occurs in relation to another. If the variables are entirely independent of each other, OR=1. The more OR deviates from 1, the stronger the association between variables. In the case of rarely occurring events (e.g., living with foster parents), which apply to only some, few percent of all those participating in the study, the odds ratio is nearly equal to the relative risk between the two groups.

Knowledge about suicidal behaviour among youth

It is well known that both ideations and actions concerning suicide are to a great degree a youth phenomenon in Greenland, in that the number of suicides has for many years been highest among the youth. Studies have shown that the proportion of those with suicidal ideations or attempting suicide declines with age (Bjerregaard et al. 2003, 2006). This is not just the case for Greenland. Suicide rates (no. of suicides per 100,000 population) among Inuit across the Arctic region, from Alaska to Canada, are alarmingly high among the 15-24 year-olds (Arctic Council 2005, Kirmayer et al. 1994, Wexler, 2006). In the study of Health behaviour among Greenlandic schoolchildren from 1994, schoolchildren aged 11 to 17 answered the question, 'Have you ever thought of committing suicide?' In this survey, 18% of the pupils stated that they had had suicidal ideations, 22% of the girls and 14% of the boys. The proportion that had had suicidal ideations increased

with age, such that 37% of the 16-year-old girls had had suicidal ideations and 25% of the 16-year-old boys (Pedersen, 1997).

There exist no previously published figures from Greenland about self-reported suicide attempts among youth 15-17 years of age. In the Population Surveys from 1999-2001, people were asked whether they had ever attempted suicide. Eighteen percent of the men aged 18-24 years had attempted suicide, and 20% of the women (Bjerregaard et al. 2003). The two aforementioned articles on the extent of suicide attempts in Greenland stem from studies based on figures from hospitalizations (Grove and Lynge 1979, Thorslund, 1992). The studies revealed no difference between men and women in the proportion of hospitalizations due to suicide attempts in Nuuk, but that a higher proportion of men died as a consequence of their suicide behaviour due to more lethal methods. In addition, they found that for both sexes there were significantly more suicide attempts than completed suicide (Grove and Lynge 1979). On the other hand, Thorslund found that the number of suicide attempts for men aged 15-30 was lower than the number of suicides (Thorslund 1992). It is important to add, however, that these figures are often based on lacking registrations of suicide using hospitalization data, and therefore we are probably dealing with an underestimation of the number of attempted suicides.

There are many explanations for the causes of suicidal behaviour, but in general we can discern a picture that factors such as troubled upbringing conditions, personal crises due to conflicts with boy-/girlfriends or with other close personal relations, the suicide of others and alcohol problems are all contributing factors to acts of suicide (Lynge 2002, Thorslund 1992, Leineweber et al. 2001). Several studies have found an association between alcohol problems and suicide. The population studies show an association between alcohol problems in the family, sexual abuse and suicidal ideations (Bjerregaard 2006), while Grove and Lynge found that among the most important determinants of suicide attempts is a troubled upbringing with alcohol problems in the home, own alcohol problems and problematic relations to close social relations (Grove and Lynge 1979).

Suicidal behaviour among youth in Greenland

Nearly all (97%) of the youth answered the questions about suicide. The study confirms earlier findings that suicidal ideations and suicide attempts are more frequent among young women than men, while suicide rates are higher for the young men (figure 1).

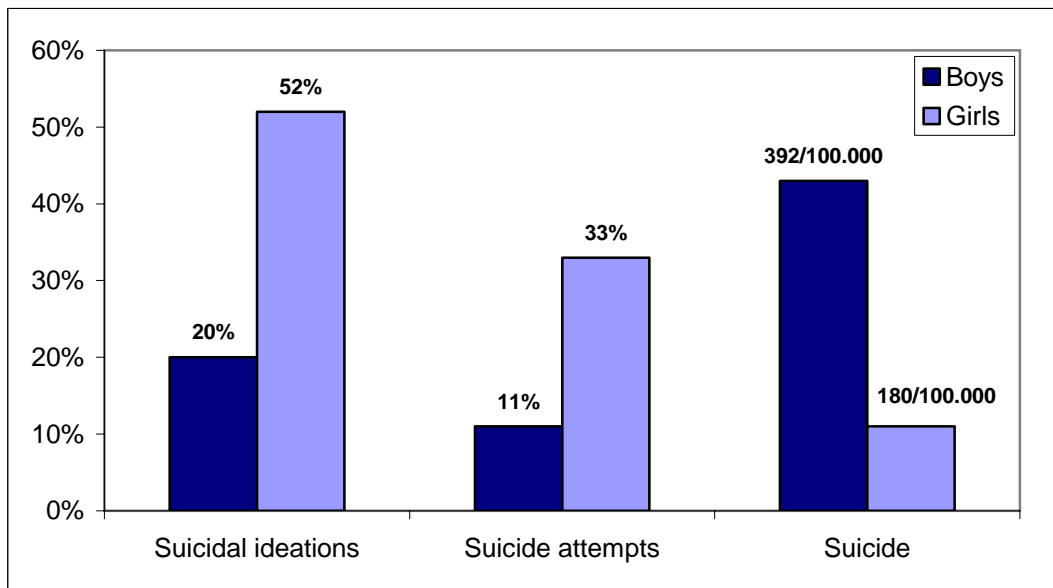


Figure 1. Suicidal ideations and suicide attempts among 15-17-year-olds in Greenland. Number of suicides per 100,000 in the age group 15-19 years old, 2000-2002.

One-third (183) of the youth have given serious thought to committing suicide, significantly more girls than boys (52% versus 20%). Among the 18-24-year-olds who participated in the Health Profile in 1993-1994 and in the Population Survey in 1999-2001, 19% of the men and 32% of the women indicated that they had had serious suicidal ideations, and the study also showed that the proportion with ideations of suicide (within the past 12 months) declined with age (Bjerregaard et al. 2006). Twenty-three percent (114) of the youth in this study stated that they had attempted suicide, a significantly larger proportion of girls than boys (33% of the girls vs. 11% of the boys). One-fifth (100) of the youth has had both suicidal ideations and has attempted suicide. Thus, over half the youth who have had suicidal ideations have also attempted suicide.

On the basis of the two questions, 'Have you ever thought seriously about committing suicide?' and 'Have you ever attempted suicide?', we have divided the youth into three groups: 1) no suicide behaviour: youth who have neither suicidal ideations nor attempted suicide (60%); 2) suicidal ideations: youth who only have ideations of suicide (17%); 3) suicide attempts: youth who have attempted suicide (23%). Nearly 10% of the boys (22) who participated in the survey have had suicidal ideations without having attempted suicide, whereas 23% (61) of the girls have had suicidal ideations without having attempted suicide. Similarly, 10% (22) of the boys and 29% (78) of the girls reported having had serious suicidal ideations and having attempted suicide. If we compare the figures for the 16-year-olds with the Survey of schoolchildren from 1994 (Pedersen,

1997), there appears to be a decline in the number of children with suicidal ideations among the 16-year-old boys (from 25% to 16%) and an increase among the girls (from 37% to 49%). Because of the different methods in the surveys, a direct comparison with the current survey should be viewed with reservations.

Seventy-eight percent of the youth who were asked whether they know someone who has committed suicide answered 'Yes', and half of these have indicated that these persons consist of peers, a boy- or girlfriend or good friend. Thirty percent indicated that it was someone within their family. A third of the pupils in the Health behaviour among Greenlandic Schoolchildren Survey from 1994 have indicated that they know someone in their family or among their close friends who have committed suicide (Pedersen, 1997), and 48% of the 18-24 year olds in the Health Profile experienced suicide in the family or among friends (Bjerregaard et al, 1997). A significantly larger share (57%) of the youth in the current survey knows someone who has committed suicide in his or her family, mates, a good friend or girlfriend/boyfriend. The Health Profile shows that the proportion of respondents who know someone who has attempted suicide declines with age. As the suicide rates are highest among the youth, it is not surprising that such a large share of the youth in this survey have indicated that they know someone who has attempted suicide. The figures show a very upsetting picture of the impact of the suicide problem on the daily lives of the youth.

Unfortunately, it is not possible to derive reliable data on suicide attempts from the National Patient Registry, and the existing figures can therefore not be compared with hospital data.

Geographical variations in suicide behaviour

There is no significant regional difference between those who have not reported suicide behaviour and those who have had suicidal ideations. On the other hand, there are geographic differences (for both boys and girls) in the occurrence of suicide attempts (table 1). Over half the youth in East Greenland have attempted suicide, and a third of the youth in Northwest Greenland.¹ In Nuuk and Southwest Greenland, respectively 15% and 20% of the youth have attempted suicide.

¹ Northwest Greenland covers the towns of Ilulissat and Upernavik, while Southwest Greenland covers Narsaq and Qaqortoq.

Table 1: Distribution of suicide attempts among youth according to regions.

	Nuuk (N=126)	Southwest Greenland (N=79)	Northwest Greenland (N=152)	East Greenland (N=52)
Suicide attempts (N=113)	15%	20%	33%	54%

These regional differences in self-reported suicide attempts accord well with the geographical distribution of completed suicides, which shows a very high occurrence of suicide in East Greenland, followed by West Greenland, while the proportion in Nuuk is lowest (Bjerregaard 2004). The survey thus shows an overlap between the youth's reporting of suicide behaviour and actual suicides in terms of geographical variation. In the Population Survey from 1993-1994, the proportion of those who had suicidal ideations was higher in Nuuk than in the rest of West Greenland, while in 1999-2001 no regional differences in the proportion having suicidal ideations could be found (Bjerregaard 2006).

Socio-demographic conditions

Table 2: *Socio-demographic factors for girls. P-values for the association between youth with and without suicidal behaviour (in percent).*

	No suicidal behaviour (N=119)	Suicidal ide- ations (N=61)	Suicide attempts (N=89)	P-value for suicidal ide- ations	P-value for suicide at- tempts
Ethnicity (Greenlandic)	76.5	83.1	87.4	0.194	0.022
Mother's educa- tion (Pri- mary/lower sec- ondary school)	42.0	53.6	64.2	0.363	0.009

For the girls, a significant difference can be seen between the groups showing suicide behaviour in terms of whether they consider themselves ethnic Greenlander, both Greenlander and Danish, or Danish. Eighty-seven percent of the girls who have attempted suicide label themselves Greenlanders, compared to 76% of those girls who have not reported any suicide behaviour. There are no significant differences between those who have had suicidal ideations and those who have not reported suicide behaviour in relation to the declaration of ethnicity, neither for girls nor boys.

There are no differences between the groups of suicide behaviour in relation to the father's education, whereas for the girls there appear to be differences related to the mother's level of educa-

tion. Hence, 64% of the girls who have attempted suicide have mothers with primary/lower secondary school compared to 42% of the girls who have not reported suicide behaviour. The proportion of girls who have attempted suicide decreases with the mother's increasing level of education.

There is no significant difference between the age groups in relation to suicidal ideations and suicide attempts. Nor is there any difference between the suicidal behaviour groups for either boys or girls in terms of speaking Greenlandic. For the girls, among those who have attempted suicide, 45% indicated that they speak poor Danish or no Danish at all; this compares with only 28% of the girls who have not reported suicide behaviour ($p=0.013$).

Upbringing conditions

Table 3: *Upbringing conditions for boys. P-values for associations between youth with and without suicide behaviour (in percent).*

	No suicidal behaviour (N=177)	Suicidal ideations (N=22)	Suicide attempts (N=22)	P-value for suicidal ideations	P-value for suicide behaviour
Rural residence at age 10	20.6	22.7	52.2	0.784	0.003
Live with foster parents	2.8	13.6	16.7	0.046	0.013
Conflict with parents (2-8 conflicts vs. 0-1 conflicts)	23.7	27.3	50.0	0.792	0.012

Table 4: *Upbringing conditions for girls. P-values for association between youth with and without suicide behaviour (in percent).*

	No suicide behaviour (N=119)	Suicidal ideations (N=61)	Suicide attempts (N=89)	P-value for suicidal ideations	P-value for suicide attempts
Rural residence at age 10	17.2	24.6	41.9	0.309	<0.001
Live with foster parents	2.5	3.3	9.0	1.000	0.058
Conflicts with parents (2-8 conflicts vs. 0-1 conflicts)	25.2	34.4	43.8	0.223	0.007
Alcohol problems in the family	61.3	67.2	77.5	0.514	0.016

It is characteristic of both boys and girls that a large proportion of those who have attempted suicide have lived in a village² at age 10 when compared to those who have not reported suicide behaviour. Boys and girls who have attempted suicide also have a greater degree of conflicts with

² Greenland is divided into 17 municipalities. Within each municipality, the largest community is the town while the other communities are villages, also often called settlements. In 2006, the population of towns in Greenland varied between 543 and 14,500; the population of the villages varied between 1 and 528. Living conditions differ considerably between towns and villages in Greenland.

their parents compared to those who have not reported suicide behaviour. This difference is not found for those who have had only suicidal ideations. For the boys, we can observe an association between suicidal behaviour and living with foster parents in comparison with the youth who do not show signs of suicidal behaviour.

Among the girls who have attempted suicide, 77% report that someone in their family has had alcohol problems, as compared with 61% of the girls who have not reported suicide behaviour. There is no association between reporting of alcohol problems in the family and suicide behaviour among the boys. Neither for the girls nor the boys is there any significant association between suicide behaviour and living with both parents or living alone with their father or mother.

Social relations

Table 5: *Social relations among boys. P-values for associations between youth with and without suicidal behaviour (in percent).*

	No suicide behaviour (N=177)	Suicidal ideations (N=22)	Suicide attempts (N=22)	P-value for suicidal ideations	P-value for suicide attempts
Loneliness	22.5	38.1	62.5	0.174	<0.001
1 or no close friends	7.4	9.1	20.8	0.675	0.047
How often together with friends during leisure time	9.8	18.2	25.0	0.229	0.041

Table 6: *Social relations among girls. P-values for associations between youth with and without suicidal behaviour (in percent).*

	No suicidal behaviour (N=119)	Suicidal ideations (N=61)	Suicide attempts (N=89)	P-value for suicidal ideations	P-value for suicide attempts
Loneliness	26.9	61.7	58.3	<0.001	<0.001
How often together with friends during leisure time	20.2	15.0	24.4	0.541	0.497
Difficulty talking with parents about problems	17.9	44.1	50.0	<0.001	<0.001
Difficulty talking with boyfriend about problems	7.3	16.7	24.0	0.100	0.002

Both for girls and boys, there is an association between having attempted suicide and feeling lonely. A significantly higher proportion of those who have attempted suicide have felt lonely. This is also the case for the girls who reported having serious suicidal ideations.

As an expression of the youth's social network among peers, we have used a variable of how often they spend time with classmates or friends in leisure time and how many close friends they have.

There is an association between how often the boys spend time with friends or mates after school and suicide attempts, and how many close friends they have and suicide attempts. Among those who have attempted suicide, higher proportions of the boys have few close friends (none or 1) and are seldom (1 day a week or less) together with friends after school. For girls, there is no association between suicide behaviour and social network among friends.

Another measure of social relations is the degree to which the youth feel they can speak with close relatives or partners about their problems. For the girls, there is an association between having attempted suicide and finding it difficult to talk with their boyfriend or parents about problems. This association cannot be identified for the boys. While half the girls who have attempted suicide find it difficult to talk with their parents about problems, this is true for only 18% of the girls who have not reported suicide behaviour.

Life-style factors

Table 7: *Life-style factors among boys. P-values for associations between youth with and without suicide behaviour (in percent).*

	No suicide behaviour (N=177)	Suicidal ideations (N=22)	Suicide attempt (N=22)	P-value for suicidal ideations	P-value for suicide attempt
Drink alcohol at least one day a week	13.6	9.1	34.8	0.691	0.021
Have been intoxicated at least three times	27.2	33.3	47.6	0.584	0.073

For the boys, there is a significant association between how many times they have been intoxicated and having attempted suicide. The proportion indicating having been drunk more than three times increases with the seriousness of the suicide behaviour. Nearly half of those boys who have attempted suicide report that they have been intoxicated four times or more. For the boys, there is also an association between how often they drink alcohol and suicide attempts, in that 35% of the boys who have attempted suicide have indicated that they drink alcohol at least once a week. As expected, there was also an age effect associated with the consumption of alcohol, in that the eldest participants in the survey report being drunk more often than the younger ones.

For the girls, there is no association between these life-style factors and suicide behaviour. As a measure for the youth's physical activity, they were asked about how often they engage in high intensive exercise (jogging, soccer etc.). For neither boys nor girls is there any association between physical exercise and suicidal behaviour.

Traumatic experiences

Table 8: *Traumatic experiences among boys. P-values for associations between youth with and without suicide behaviour (in percent).*

	No suicide behaviour (N=177)	Suicidal ideations (N=22)	Suicide attempt (N=22)	P-value for suicidal ideations	P-value for suicide attempt
Girlfriend or good friend has committed suicide	35.0	59.1	62.5	0.036	0.013
Broke up with girlfriend	19.8	40.9	37.5	0.032	0.064
Problems in school	7.9	4.5	25.0	1.000	0.019

Table 9: *Traumatic experiences among girls. P-values for associations between youth with and without suicide behaviour (in percent).*

	No suicide behaviour (N=119)	Suicidal ideations (N=61)	Suicide attempts (N=89)	P-value for suicidal ideations	P-value for suicide attempts
Boyfriend or good friend has committed suicide	29.4	27.9	60.7	0.864	<0.001
Subjected to violence	6.7	9.8	19.1	0.558	0.009
Subjected to sexual abuse	16.2	29.3	60.4	0.033	<0.001

Different pictures are revealed for boys and girls in the associations between traumatic experiences and suicide behaviour. For both boys and girls, there is a strong association between suicide of close personal relations and one's own suicide attempt, in that a high proportion of those who have attempted suicide have had a mate, good friend or boy-/girlfriend who committed suicide.

For the boys, there is an association between suicide behaviour and a break-up with a girlfriend and with problems in school. Among those boys who have attempted suicide, one-fourth report having had problems in school.

For the girls, the data indicate a strong association between suicide behaviour and having been subjected to domestic violence or sexual abuse. Sexual abuse is defined differently here than in the report on Well-Being among Youth in Greenland 2004 (Curtis et al. 2006), where a penal definition was used that included only those youth who had experienced an abuse event prior to the age of 15. In these analyses, we have chosen to utilise a broader definition, where all youth who now and at that time experienced the episode as an assault, are included.³ On the basis of this

³ Due to a programming error in the electronic questionnaire, only about half of the youth who participated in the survey answered the detailed questions regarding sexual abuse.

definition, 157 of the youth have not been subjected to sexual abuse, while 60 indicated having been victimized. As the number of boys in this group is very small, they are not included in the further analysis due to great statistical uncertainty.

School and leisure time

Table 10: *School and leisure time activities among boys. P-values for associations between youth with and without suicide behaviour (in percent).*

	No suicide behaviour (N=177)	Suicidal ideations (N=22)	Suicide attempt (N=22)	P-value for suicidal ideations	P-value for suicide attempt
Low academic performance in school	40.3	50.0	62.5	0.492	0.049
Does not enjoy going to school	24.6	18.2	50.0	0.605	0.014
Jogging, biking or skiing	38.4	9.1	20.8	0.008	0.115

Table 11: *School and leisure time activities among girls. P-values for associations between youth with and without suicide behaviour.*

	No suicide behaviour (N=119)	Suicidal ideations (N=61)	Suicide attempts (N=89)	P-value for suicidal ideations	P-value for suicide attempts
Low academic performance in school	29.4	48.3	61.6	0.020	<0.001
Does not enjoy going to school	17.6	26.7	30.2	0.175	0.043
Jogging, biking or skiing	26.9	16.4	13.5	0.138	0.025
Does not participate in sports activities	19.3	3.3	14.6	0.003	0.460

There is an association between the youth's level of well-being in school and suicide behaviour. The factor 'does not like school' and 'low academic performance in school' comprises those youth who have answered 'somewhat' or 'not so good' to the two questions. A larger proportion of the boys who have attempted suicide report that they do poorly in academic school performance, and a larger proportion have indicated that they do not like attending school compared with the youth who have not reported suicidal behaviour. We investigated for associations between several leisure time factors, among them leisure time activities, but significant differences were found only in suicidal behaviour for those who had indicated that they participate in scouting, play music or cultivate other non-sport leisure activities, and for those who reported that they jog, bike or ski. For the boys, there is also an association between these free time activities and no suicide behaviour, in relation to serious ideations of suicide. The girls who have not attempted suicide have a greater tendency to jog, bike or ski in comparison with the girls who have attempted suicide. The

girls who do not exhibit suicide behaviour have are more likely to report that they participate in scouts or other non-sports activities compared with the girls who have had serious suicidal ideations. The results of these analyses could suggest that it is the social aspect rather than the physical aspect that has a positive effect on the youth's relation to suicide behaviour, cf. page 11.

Physical and mental health

Table 12: *Physical and mental health among boys. P-values for associations between youth with and without suicide behaviour (in percent).*

	No suicide behaviour (N=177)	Suicidal ideations (N=22)	Suicide attempts (N=22)	P-value for suicidal ideations	P-value for suicide attempts
Poor self-rated health	27.3	50.0	41.7	0.045	0.156
More than two symptoms of depression	37.7	66.7	87.5	0.017	< 0.001
In good spirits	12.8	27.3	33.3	0.100	0.015

Table 13: *Physical and mental health among girls. P-values for associations between youth with and without suicide behaviour (in percent).*

	No suicide behaviour (N=119)	Suicidal ideations (N=61)	Suicide attempts (N=89)	P-value for suicidal ideations	P-value for suicide attempts
Poor self-rated health	30.3	52.5	57.3	0.006	<0.001
More than two symptoms of depression	54.7	84.7	81.6	<0.001	<0.001
Energy	16.1	36.7	43.2	0.004	<0.001
In good spirits	18.6	33.3	50.6	0.039	<0.001

There is an association between the youth's self-reported health and suicide behaviour, in that for both boys and girls, larger proportions with poor self-rated health are found among those who have attempted suicide than among the youth who have not reported suicide behaviour. There is no association, for either boys or girls, between their body perception and suicidal ideations or suicide attempts.

Both for boys and girls, there is an association between how vigorous they felt within the last month and suicide behaviour, including both suicidal ideations and suicide attempts. For the girls, there is also an association between their reported level of energy and suicide behaviour, with 43% of the girls who have attempted suicide saying that they seldom feel full of energy versus 16% of the girls who have not reported suicide behaviour.

The youth were asked about 8 relatively general symptoms of anxiety and depression, which they had experienced in periods of at least two weeks' duration within the past year. On the basis of

the eight questions, we have constructed a scale with the values 0-16, where 0 is an expression of no symptoms and 16 of having indicated all symptoms. The study shows a significant tendency for the youth with suicide behaviour (both suicidal ideations and attempts) to have an increasing number of symptoms of depression in relation to groups of youth who have not reported suicide behaviour ($p < 0.001$) (not shown in the table). If the symptoms of depression are divided into two groups with, respectively '0-2 symptoms' and 'more than two symptoms', there is also a significant association between symptoms of anxiety depression and suicide behaviour, for both boys and girls (tables 12 and 13).

Summary

Among those youth who have stated that they have serious ideations of suicide but have not attempted suicide, there is an association among the girls between feeling lonely, finding it difficult to talk with their parents about problems, subjected to sexual abuse, poor performance in school and poor self-rated health, as well as several symptoms of depression. For the boys, there is an association between suicidal ideations and having a friend or girlfriend who has committed suicide, having broken off with a girlfriend and poor self-rated health.

The analyses show that for both girls and boys, there is an association between suicide attempts and having lived in a town or settlement when they were 10 years of age. The girls and boys who have attempted suicide have more conflicts with their parents than those who do not report suicide behaviour, they more often feel lonely and a larger proportion have indicated that a mate, friend or boy-/girlfriend have committed suicide. Among the boys, there are also several other factors associated with suicide attempts. Boys who have attempted suicide have fewer close friends and are more seldom together with friends or mates after school than are boys without suicidal behaviour. In addition, there is an association between suicide attempts and factors such as alcohol use and problems in school. A larger proportion of the boys who have had serious ideations of suicide have stopped seeing their girlfriend within the past year.

For girls, the picture of correlations is different. A large proportion of the girls who have attempted suicide feel themselves to be Greenlanders, there is a tendency that the shorter the mother's education, the higher the proportion of girls reporting suicide behaviour. Among those who have reported suicide attempts, larger proportions have indicated alcohol problems among the closest relatives, and more have difficulties talking about their problems with parents and boyfriend. Fur-

thermore, there is an association between suicide attempts and the experiences of violence or sexual abuse.

Analysis with several simultaneous, explanatory variables

In order to examine the associations between suicide behaviour and the explanatory variables, we undertook multivariate statistical analyses. The following table shows which variables have been selected for analysis on the background of significant associations found in the cross-tabulations for boys and girls, respectively.

Table 15: *Variables, which are included in the final model for suicidal ideations for boys and girls, respectively.*

Boys	Girls
➤ Self-rated health	➤ Loneliness
➤ Broke-up with girlfriend	➤ Self-rated health
➤ Girlfriend or good friend has committed suicide	➤ Academic performance in school
➤ Symptoms of depression	➤ Subjected to sexual abuse
	➤ Difficulty talking with parents about problems
	➤ Symptoms of depression

Table 16: *Variables included in the final model for attempted suicide for boys and girls, respectively.*

Boys	Girls
➤ Urban/rural residence at age 10	➤ Urban/rural residence at age 10
➤ Conflict with parents	➤ Conflicts with parents
➤ Loneliness	➤ Loneliness
➤ Girlfriend or good friend has committed suicide	➤ Self-rated health
➤ Academic performance in school	➤ Boyfriend or good friend has committed suicide
➤ Alcohol consumption	➤ Academic performance in school
➤ How often together with friends in leisure time	➤ Difficulty talking with parents about problems
➤ Symptoms of depression	Subjected to sexual abuse
	➤ Alcohol problems in the family
	➤ Symptoms of depression

Depression is a strong predictor of suicidal ideations and suicide attempts and can be considered as a mediator between social risk factors and suicidal behaviour. We have therefore decided to undertake analyses with and without depression in the statistical model. If depression is incorporated into the models, it eliminates some of the associations with suicidal behaviour and the other social factors in the model, but basically, the picture does not change significantly and therefore the symptoms of depression are included in the final models presented here.

Symptoms of depression show a strong association with suicidal behaviour for both boys and girls, and the significance of their suicide is considerable for both boys and girls in relation to suicide attempts. For the boys, factors such as loneliness and break-up with girlfriend also have great importance for suicide behaviour. For the girls, it is assault, which has the greatest significance for suicide attempts. In addition, feelings of loneliness, having problems talking with parents are significant for the girls. In the statistical models without depression, self-rated health operates as an indicator for the mental well-being, and for the boys suicide attempts, rural residence at the age of 10 and conflicts with parents are also statistically significant explanatory factors.

Table 17: *Factors of significance for suicidal ideations among boys.*

	OR	P-value	95% confidence interval	
Break-up with girlfriend	3.6	0.016	1.27	10.19
Girlfriend or good friend has committed suicide	3.1	0.033	1.10	8.63
Symptoms of depression	1.4	<0.001	1.18	1.64

Table 18: *Factors of significance for suicide attempts among boys.*

	OR	P-value	95% confidence interval	
Loneliness	5.1	0.006	1.61	16.29
Girlfriend or good friend has committed suicide	4.5	0.014	1.35	15.10
Symptoms of depression	1.8	<0.001	1.42	2.29

Table 19: *Factors of importance for suicidal ideations among girls.*

	OR	P-value	95% confidence interval	
Loneliness	3.6	<0.001	1.71	7.50
Difficulty talking with parents about problems	2.4	0.028	1.10	5.35
Symptoms of depression	1.2	0.001	1.09	1.33

Table 20: *Factors of importance for suicide attempts among girls.*

	OR	P-value	95% confidence interval	
Subjected to sexual abuse	12.1	<0.001	3.31	44.39
Boyfriend or good friend has committed suicide	3.6	0.014	1.31	10.16
Loneliness	2.9	0.031	1.11	7.85
Symptoms of depression	1.2	0.021	1.02	1.31

The analyses reveal strong associations between suicidal behaviour and factors such as loneliness, traumatic events and for the girls, difficulty speaking about problems with their parents. These results confirm earlier findings showing the association between suicidal behaviour and difficult

upbringing conditions (Bjerregaard, 2006; Grove & Lynge, 1979; Thorslund, 2001). The results also lie in extension of what the youth themselves expressed through two open questions in the study. The youth are searching for more caring behaviour, attention, and receptivity from the adults, more possibilities to be able to come to them and talk about their problems, but also that there is a general need to become better to talk together and listen to each other. The youth thus gave a very good message as to how the conditions for children and youth can be improved.

All four statistical models presented here are in accordance with data, but it is important to be aware that there are other explanatory variables that also could be in accordance with data. This means that there can be other factors of significance for the suicidal behaviour of boys and girls.

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