When life loses its meaning: Sense of Coherence among elderly suicide attempters

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Abstract

Title: When life loses its meaning: Sense of Coherence in elderly suicide attempters

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Aim and research questions: The aim of this study was to test the relationship between socio-demographic and social variables and Sense of Coherence (SOC) among elderly suicide-attempters. The research questions are: Do socio-demographic and social variables have a relationship with SOC? If so, does the relationship remain when controlling for clinical variables which are often associated with suicide?

Methods: Data from *When life feels difficult to live*, in which 103 elderly suicide-attempters interviewed. Eighty individuals (fifty-seven women and forty-six men) answered the SOC-questionnaire. Independent sample t-test was used to compare means among dichotomised variables. ANOVA was used to compare means among variables with three outcomes. Bivariate logistic regression was used to analyze associations between SOC and socio-demographic and social variables. All significant associations were analysed in separate multivariate regressions, adjusting for 1) Hopelessness, 2) Number of previous suicide attempts, 3) Major depression, 6) SIS score.

Results: SOC was associated with time spent with ones children and grandchildren. It was also associated with having moved in the past five years and perceived loneliness. The results remained in models adjusted for hopelessness, previous suicide attempt, major depression and SIS score.

Conclusions: Social variables are associated with SOC. The results are independent of such variables associated with suicidal behaviour. The results show the importance of having a satisfying social life as it may affect an individual's coping ability.

Keywords: Sense of Coherence, suicide-attempters, elderly, social support

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1. Introduction and background

The study of suicide has a long tradition in the field of sociology. Though it has been met by competition from both the field of medicine and psychology, sociology has an important role in studies focusing on suicide. It is possible that this is linked to Emilé Durkheim's groundbreaking study *Le Suicide* (1897, 1983). This study showed that suicide rates varied in different societies, but at the same time stay stable over time. This implies that factors leading to suicide do not exclusively lie on the individual by psychological, biological and medical factors, but they also show that social factors play a part. Despite these facts, there are few sociological studies of suicide and even fewer with a focus on elderly.

Elderly have for many decades been over-represented in suicide statistics, especially in the industrialised countries (Waern 2000:50). To grow old is a time which is associated with change for the individual, such as loss of loved ones, physical and/or mental health, as well as social status (Waern in Beskow 2000:261). Although these facts have been proven time and again, research on suicide mainly focuses on younger generations. In Sweden during 1950-1990 the group of individuals 65 years and older has increased by 100 % (SCB 2009-05-06). This increase implied that in 2007 there were 1.6 million individuals 65 years and older which constitutes 18 % of the population. In 2020 this number is assumed to reach nearly 2.1 million, and in 2050 nearly 2.4 million (Hjälpmedelsinstituet 2009-05-04). These numbers are presumed to have large effects on the society, as it will lead to increased costs for the health care system as well as a decline of the proportion of working individuals (FHI 2009-05-06).

During the past years suicide rates have decreased in Sweden. Although, when looking at specific age groups results are not so positive for elderly. Among elderly women suicide rates have increased. Sweden is 17 % above the mean suicide rate in Europe (WHO 2009-05-14). This might be affected by the negative image of elderly that exists. Elderly are seen as not having too much time left, and that they are not longer interesting to their surroundings. Another possible explanation is that many elderly get depressed (NASP 2009-05-06). Each year in Sweden there are 15 000 suicide-attempts, 1500 result in death (Sjöström 2009:38). In the ages 65 years and above there are approximately 400 suicides per year. This number does necessarily not represent the truth, as the estimated number of unknown cases may be large. As the population is becoming older it is possible that suicide will become a more common cause of death. Notable here, is that suicide among men in this age group has increased dramatically during the past twenty years. An increase in age will have an impact on suicide statistics. According to Waern, suicides can double in years to come (2000:50).

Leading theories in medical research have shown an association between elderly suicide and mental health, or lack of it. For example, depression is a major risk factor for suicide. This disorder is often linked to social isolation and reduced mental and physical health (Wasserman 2001:128). These factors can also have an effect on what Antonovsky calls Sense of Coherence

(SOC), as this has been proven to have an effect on how well the individual copes with his/her internal and external situation (2005). A series of negative life-events can be devastating for the individual, making it seem impossible to continue living. A suicide attempt is a warning signal which needs to be taken seriously, in order to prevent future attempts. As an association between SOC and suicide has been shown through previous studies (Mehlum 1998, Giotakos 2003, Petri & Brook1992, Ristkari 2005, Sjöström 2009), this implies that SOC is an important tool which should be included when studying suicide.

1.1 Aim

The aim of this study is to test the relationship between socio-demographic and social variables with Sense of Coherence (SOC) among elderly suicide attempters.

- Do socio-demographic and social variables have a relationship with SOC?
- If so, does the relationship remain when controlling for clinical variables which are often associated with suicide?

1.2 Limitations

This study is limited to 80 individuals between the ages 70-91, who at some period during 2003-2006 attempted to take their lives. All individuals who took part of the study were at the time of the interview registered as living in Västra Götalands Län. Focus lies on non-demented individuals, as their answers are evaluated as more reliable.

1.3 Disposition

In order to fulfil the aim of this study, some areas need to be addressed. Firstly, previous studies will be described in section two. This is followed by section three, in which the theoretical framework which this master thesis is built upon will be presented. In section four the reader is given a description of the data and methods of this study. This is followed by section five, in which the results of the study are presented. These results will be analyzed and discussed in section six. Lastly, in section seven the reader is given a short summary of this master thesis and recommendations for further studies.

2. Previous studies

For decades it has been discussed why certain individuals have the ability to maintain their mental health in situations where they are faced with stressful life events, while others do not (Antonovsky 1979). This has led to a number of studies which have focused on different factors that have been proven to have an impact on suicidal ideation. According to Antonovsky, an individuals' SOC is essential for the salutogenic model, which aims to explain why certain individuals remain healthy while others do not.

Within the field of psychiatry, psychiatric disorders such as depression have been shown to be associated with suicide. However, depression can not on its own explain why individuals perform suicidal acts (Beskow 2005). One half of all women, and a quarter of all men suffer from depression sometime during their lifetime. However, men are twice as likely as women to commit suicide (2005:58). In a study of completed suicides, Waern (2000) found that depression was a major risk factor. Other studies have shown that individuals suffering from psychiatric disorders often have low SOC (Carstens & Spangenberg 1997, Sjöström 2009). Individuals who recover from major depression have been shown to increase their SOC score (Carstens & Spangenberg 1997).

As mentioned above, psychiatric disorders have been shown to have an association with low SOC. As disorders of this sort are major risk factors for suicide, it is likely that SOC is associated with suicide. Non-clinical studies of military conscripts have shown an association between low SOC and suicidal ideation and attempts (Giotakos 2003, Mehlum 1998, Ristkari 2005). Military conscripts are often regarded as a healthy group (Mehlum 1998); although research has shown that the group is at high risk for suicide (Schroderus et al 1992). Even though this association has been shown, only two studies have been found, which focus lies on suicide attempters (Petrie & Brook 1992, Sjöström 2009). Petrie & Brook (1992) found that when analyzing the three subscales of SOC on their own it is possible to distinguish which individuals who will and who will not execute a future suicide attempt. Sjöström (2009) found, in his study of suicide attempters that low SOC was a predictor of suicidality, both at index and at follow up.

Social support and social inclusion have through previous studies been shown to be associated with suicide. Lebret (2006) showed that social isolation was associated with suicide attempts. Feelings of loneliness and difficulties with ones partner have shown to be associated with both suicide attempts and completed suicides (De Leo 2002, Lebret 2006, Waern 2000). Several studies have shown that social support correlates with SOC (Holmberg 2004, Nilsson 2000, Skärsäter 2005). Nilsson (2000) found that in a Swedish population sample, low SOC was associated with low social support. In a study of Swedish males, Holmberg (2004) found that social support was the only variable that had a positive association with individuals SOC scores. Skärsäter (2005) showed that social support is a key factor in individuals rebuilding process of SOC. In a study of individuals with mental health problems the results showed that the quality of social support predicted a positive development of SOC at follow up, one year after the first

interview (Langeland 2009). Antonovsky notes that circumstances concerning individuals' life such as education level, work and personal economy have an impact on SOC (2005:120). Sjöström (2009) did not find an association between socio-demographic variables and SOC. Although socio-demographics such as sex etc. have been shown to have an association with suicide, perhaps variables measuring level of social support and/or inclusion, which are an indirect result of socio-demographics, are more important for suicidal individuals' SOC strength.

Thus, this brings us closer to Durkheim's reasoning that social factors are of great importance in studies of suicide. For instance, the major finding in Durkheim's study was that religion can be a protective factor against suicide. Similar results were found in my bachelor thesis; individuals that were active within ones religion were less likely to have suicidal ideation. It may be possible that the activeness led to social inclusion which had a positive effect for the individual (Mellqvist 2008).With the results that have been presented through previous studies and the fact that elderly are over-represented in suicide statistics; it seems quite relevant to perform a study of this sort. Also, to my knowledge, no other study has been performed on SOC among explicitly elderly suicide attempters.

3. Theoretical framework

In the text below, the theories and theorists which I have found to be the most relevant for the aim of this master thesis are presented.

3.1 Antonovsky's Sense of Coherence

Aaron Antonovsky (1923-1994) was a professor in medical sociology, active at the Ben Gurion University of the Negev in Israel (Gassne 2008:11). Antonovsky was especially noted for his studies of individuals' social class, disease and death.

Antonovsky developed SOC after a study which was conducted in the 1970's, in which women's adaption to menopause was studied. The results showed that 29 % of the Jewish women, whom were Holocaust survivors, reported having good mental health. These were high numbers, which resulted in Antonovsky changing the main focus of his study. The pathogenic model, which means that the focus lies on why individuals get ill, was replaced with the salutogenic model which focuses on the opposite; why certain individuals who are faced with stressful life events remain healthy (Antonovsky 2005:15). According to Antonovsky, an individual is never completely healthy or ill, he/she moves between these as pairs of opposition depending on the strength of SOC.

SOC is defined as:

a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement (Antonovsky 1987:19).

According to Antonovsky, an individuals SOC stabilises when they reach their thirties. Furthermore this means that an individual who has managed to secure a high SOC-score is likely to maintain this for the duration of their life. This implies the opposite for an individual with a low SOC-score. Although when an individual is faced with difficulties his/her SOC-score might vary. When the individual has overcome these difficulties it is possible for the SOC-score to return to the same level as before (Antonovsky 2005).

3.2 Comprehensibility, manageability, and meaningfulness

According to Antonovsky there are three components which have an impact on SOC; comprehensibility, manageability, and meaningfulness. These are described below.

Comprehensibility is what Antonovsky calls the cognitive component. The component has to do with the extent that the individual perceives inner and outer stimuli as tangible, e.g. information is cohesive and structured instead of chaotic and unexpected. An individual with a high sense of comprehensibility who is exposed to different forms of stimuli perceives these as explainable and predictable (1991:39).

Manageability is the behaviour component, and has to do with which extent the individual perceives themselves as having resources to their

disposal. These resources can be of help when meeting the demands which are placed on the individual by the stimuli one is subjected to. Resources can be individuals such as family members and friends, or things which the individual has a strong confidence in such as society or God. An individual with a high sense of manageability feel they have the capacity to meet the difficulties they are faced with (1991:40).

Meaningfulness is the motivational component. This component implies that taking part of processes surrounding the individual creates the individuals destiny as well as daily experiences (1991:41). Meaningfulness is according to the sociologist, the most important component of the three. An individual with a high sense of meaningfulness, who is met by a challenge, will seek a deeper meaning, resulting in life getting an emotional significance. On the other hand, if an individual is lacking meaningfulness, he/she will not invest in situations resulting in the other components losing their strength. These three components are according to Antonovsky indistinct interlaced (1991:42).

An individual with a high sum on the SOC-scale has, according to Antonovsky, an easier time managing unexpected and stressful situations (2005). This implies that the individual is able to experiences feeling such as sadness, anger, pain etc. These feelings imply that the individual implements some kind of act to move on with one´s life. A high SOC-score makes individuals more resistant, it protects from stressors. Low SOC-score amounts to the individual feeling paralysed from the events that have taken place. The individual can feel shame, despair etc. as these feelings are kept inside, which implies that person is more exposed to stressors (Antonovsky 2005).

3.3 The analytical model

As previous studies have shown an association between social variables and SOC, I hypothesize that an association between socio-demographic and social variables and SOC will be found. This is what Aneshensel calls the study's focal relationship (2002:11). This is an essential part of the theory, where it is established whether or not two variables are related. The goal of the study is to clarify how the variables are correlated. Although, an association between social variables and SOC have been found, there is little known about what kind of social support is positive for suicidal individuals. In this study socio-demographic variables are such variables regarding the individuals' life situation, such as their marital status and living arrangements etc. Social variables are regarded as such variables which measure social support and/or inclusion. These variables are described below, in section 4.2.2 and 4.2.3. As social variables also have an impact on suicide, the importance of studying this relationship is verified. What needs to be remembered here is that suicidal individuals often have a psychiatric disorder or some other medical problem which can have an impact on the individual's state. In regards to this, control variables are included in the analysis to establish if the focal relationship persists after the inclusion of such variables. Inserting control variables will help in determining if the relationship is spurious or not (2002:10). The control variables in this study will be labeled

clinical variables from here on, and are diagnoses of depression etc. which are set by psychiatrics and the interviewer. These are described below, in section 4.2.4.

In figure 1 below, the analytical model for the study performed in this master thesis is presented.

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┌─────────────────────┐
│ Socio-demographic   │
│        and          │ ──────────┐
│ Social variables    │           │
└─────────────────────┘           ▼
                         ┌─────────────────────┐
                         │ Sense of Coherence  │
                         │       (SOC)         │
                         │                     │
                         └─────────────────────┘
┌─────────────────────┐           ▲
│                     │           │
│ Clinical variables  │ ──────────┘
│                     │
└─────────────────────┘
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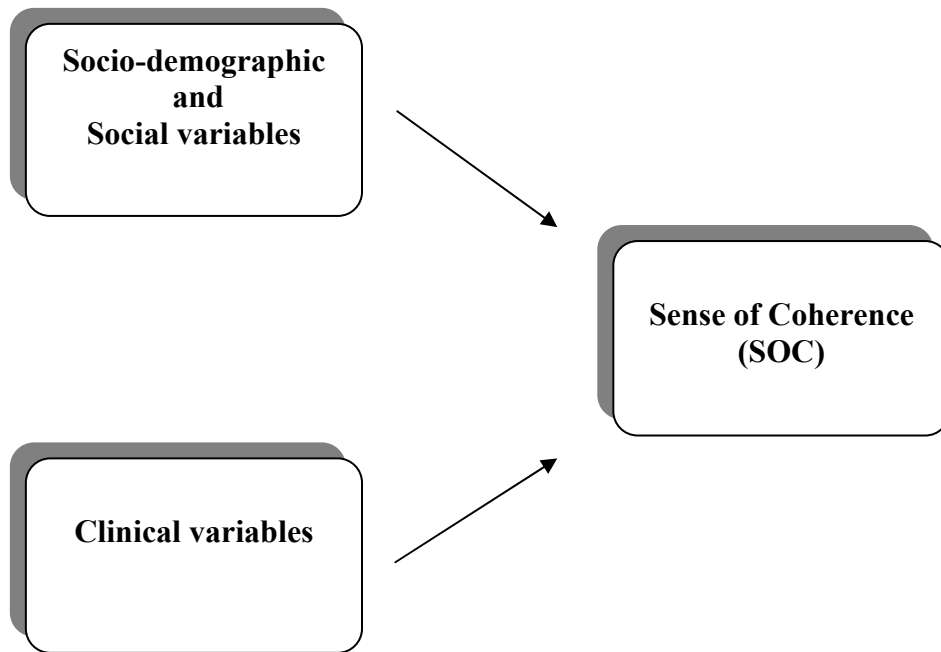
Figure 1. The analytical model

4. Data and methods

Studies in general with a focus on the elderly are relatively unusual in all fields, and sociology is no exception. Those with a focus on elderly and suicide are very few, especially when taking statistics into consideration. The most accessible studies are those which are found within the field of medicine. In the text below the data and methods used in this study is presented.

4.1 When life feels difficult to live

In 2003 a research project named *When life feels difficult to live* was started at The Institute of Neuroscience and Physiology, Sahlgrenska Academy at the University of Gothenburg.

The aim of the project is to identify social, psychological, and medical risk factors for suicide. The data is based on a thorough interview with elderly suicide-attempters, who were asked questions regarding his/her psychiatric, and depressive symptoms, suicidality, physical illness, cognitive status, personality, and SOC. Face-to-face interviews were performed by a psychologist with many years of experience. Most of the interviews were performed at the hospital, although fourteen were conducted after the individual was discharged. The median time between the suicide-attempt and the interview was eleven days (Wiktorsson et al 2009). A suicide-attempt is defined as:

A situation in which a person has performed an actual or seemingly life-threatening behaviour with the intent of jeopardizing his life, or to give the appearance of such an intent, but which has not resulted in death (Beck et al 1972).

4.1.2 Methods for sample

When life feels difficult to live is a project which is based on individuals 70 years and above who have tried to commit suicide. Cases were recruited from five hospitals in Västra Götalands Län (Sahlgrenska, Östra, Mölndal, Kungälv, NÄL, Uddevalla, Borås and Falbygden) during 2003-2006. 145 individuals were registered as living in the region. Exclusion criteria were dementia (n=2), terminal illnesses (n=2), and insufficient knowledge of the Swedish language (n=1). Twenty-eight individuals did not want to take part in the study. Seven individuals had left the hospital before they could be informed of the study. Two individuals had died from natural causes before the scheduled interview, leaving 103 individuals, indicating a correspondent's rate of 77.4 % (Wiktorsson et al 2009). Individuals (n=8) who received a dementia diagnoses after the interview were excluded in the analysis that follow. Out of the ninety-five individuals that were left in the sample after exclusions, 15 out of these had not answered the SOC questionnaire leaving a sample of eighty individuals.

4.2 Variables

The study which is conducted in this master thesis is based on secondary data, which means that I have not been able to choose which variables which were included. The study is based on questions in the formularies which

focus on socio-demographics, clinical variables such as suicide intent (SIS), and SOC. A description of the variables included in this study is given below, they can also be found in the appendix. Due to the size of the sample used in this study, nearly all variables have been recoded into dichotomies. This has its advantages both for the writer and reader, as it makes it easier to interpret the results. This could lead to reduced detail of the data, though this was seen as the only option to enable analysis.

4.2.1 Dependant variable
The SOC scale was developed by Aaron Antonovsky in 1979. The 29 item scale was used in this study. Items are rated 1-7, yielding a total score of 203. The SOC has been used in two ways. Firstly, when looking at the mean scores of SOC, the variable is continuous. Secondly, in the regression models the SOC score has been dichotomised, first quartile against all others. Low score in this study was 114 or below. Having a high score on SOC is supposed to imply better coping resources (Antonovsky 2005:238). Previous studies have also used the same cut-off (Sjöström 2009), indicating that this is a reasonable approach. The Swedish version of the SOC scale was used in this study. This version has been tested, and showed high reliability and validity (Langius et al. 1992). The SOC dichotomy is as follows: 115-203=0 (high SOC), 0-114=1 (low SOC).

4.2.2 Independent variables – socio-demographic variables
Sex is a dichotomy. 0=man, 1=woman.

   Age has been used in two ways. Firstly, when looking at the mean scores, the age variable has been divided into two age groups; 70-79 and 80-91. Secondly, in the regression models age is used as a continuous variable. Age derives from the variable *Participants age at the time of the interview* (PSF 9).

   Partner is recoded from the variable *Marital status* (PSF 10). The original variable consists of eight response alternatives: 10. Never had a relationship. 11. Unmarried, divorced. 12. Unmarried, widow/widower. 13. Live-apart partner. 20. Married. 21. Married, not cohabiting. 22. Cohabiting, marriage-like. 30. Other. The variable (see appendix 1) has been dichotomised, an individual either has a partner, or not. 0=no, 1=yes.

   Divorced/separated (PSF 27) has been dichotomised. The original variable consists of four response alternatives: 0. Not divorced or separated. 1. Divorced or separated since more than 5 years. 2. Divorced or separated since 1-5 years. 3. Divorced or separated since 0-1 years. The variable (see appendix 1) has been dichotomised, an individual either is or is not divorced. 0= no, 1=yes. Five individuals have not answered the question.

   Widow/widower (PSF 20) has been dichotomised. The original variable (see appendix 1) consists of eight response alternatives: 0. Never married, cohabitating. 1. Cohabitating not married. 2. Married. 3. Widow/widower since more than 5 years. 4. Widow/widower since 1-5 years 5. Widow/widower since 0-1 years. 6. Divorced or separated. 9. Missing value. An individual is either widow/widower or not. 0=no, 1=yes. 9:s are excluded.

Has or has had children is recoded from the variable Do you have or have you had children? (PSF 45). The original variable (see appendix 1) consists of five response alternatives: 0. Never had children. 1. Has had children, now deceased. 2. Has children. 3. 1+2. 9. Missing value. An individual can either never have had children, or has or has had children. 0=no, 1=yes. Four individuals have not answered the question.

Education beyond mandatory is recoded from the variable *What education do you have?* (RISK 5). The original variable (see appendix 1) is a dichotomy: 1. 6 years of school or less (mandatory). 2. More than 6 years school (beyond mandatory). An individual can report having education beyond mandatory or not. 0=no, 1=yes.

Living alone and *Living in an institution* do not exist in the questionnaire; these were manually added by the interviewer. These variables are dichotomies, meaning the individual is either living alone or living with others, and living in an institution or not. 0=no, 1=yes. Four individuals have not answered the question.

Economic situation during adolescence has been recoded. The original variable (PSF 89) consists of six response alternatives (see Appendix 1): 0. Very bad. Received welfare benefits, had to beg, lack of food at times. 1. Bad. 2. Average. 3. Good. 4. Very good. 9. Missing value. The recoded variable has three outcomes: 0=bad/very bad. 1=average. 2=good/very good.

4.2.3 Independent variables – social variables

Time spent with children is recoded from the variable *Do you spend enough, too much or too little time with your children?* (SOC NÄT 7). The original variable (see appendix 2) consists of three response alternatives: 1. Too much. 2. Enough. 3. Too little. The answering alternative *too much* was removed from the analysis as only one person reported this. The variable has been dichotomised, an individual either thinks he/she spends enough, or too little time with their children. 0=enough, 1=too little. Nine individuals reported that they do not have children, and two individuals have not answered the question, meaning a non response of eleven.

Time spent with grandchildren is recoded from the variable *Do you spend enough, too much or too little time with your grandchildren?* (SOC NÄT 12) (see Appendix 2). The original variable consists of three response alternatives: 1. Too much. 2. Enough. 3. Too little. Here the answering alternating *too much* was also removed, as no individuals reported this. An individual can report spending enough or too little time with their grandchildren. 0=enough, 1=too little. Eleven individuals reported that they did not have grandchildren; two individuals did not answer the question, meaning a non response of thirteen individuals.

Time spent with the neighbours is recoded from the variable *Do you think you have enough, too much or too little contact with your neighbours?* (SOC NÄT 19) (see Appendix 2). The original variable consists of three response alternatives: 1. Too much. 2. Enough. 3. Too little. The answering alternating *too much* was removed, as no individuals reported this. An individual can report spending enough or too little time with their neighbours. 0=yes, 1=no. one individual has not answered the question.

Moved in the past five years (PSF 84) has been dichotomised (see Appendix 1). The original variable consists of eight response alternatives: 0. No. 1. Yes, 1-5 years ago, willingly. 2. Yes, 0-1 years ago, willingly. 3. Yes, 1-5 years ago, inflicted. 4. Yes, 0-1 years ago, inflicted. 5. Yes, more than one moves, all willingly. 6. Yes, more than one move, inflicted in some cases. 9. Missing value. An individual has either moved or not. 0=no, 1=yes.

Perceived loneliness is recoded from the variable *Do you feel lonely?* (PSF 82). This variable (see appendix 1) is a single item which is used to investigate perceived loneliness. The original variable consisted of five response alternatives: 0. Not lonely. 1. Yes, since more than 5 years. 2. Yes, since 1-5 years. 3. Yes, since 0-1 years. 9. Missing value. The recoded variable has two outcomes; 0=no, 1=yes. One individual has not answered the question.

4.2.4 Clinical variables

Anhedonia is recoded from the variable *Reduced emotional involvement* (DEP 12) (see appendix 4). Anhedonia can very briefly be described as a state in which the individual has lost his/her ability to feel (joy), and is a part of the MADRS scale, which is described below. The variable has been dichotomised. An individual can either have or not have Anhedonia. 0=no, 1=yes. One individual has not answered the question.

Hopelessness is a single item *Do you think your situation is hopeless?* (GDS 14), and is part of the Geriatric Depression Scale. This variable only has two outcomes; 0=no and 1=yes. The variable measures whether or not the individual perceives their situation as hopeless.

Physical health CIRS 3-4 is recoded from the variable *Number of somatic categories with a rating >2* (CIRS 15) from Cumulative illness rating scale for geriatrics (CIRS-G) (see Appendix). The scale was developed in 1968 by Lin, Lin and Gurel, and is used to rate medical problems in the elderly. Each organ of the body is rated 0-4, depending on what kind and how severe the individuals' problem is. High score is considered having a medical problem. Having >2 is considered as a physical disability (Yesavage et al 1982). An individual either has good or bad health. 0=good, 1=bad.

Number of previous suicide attempts is recoded from the variable *How many times have you tried to take your own life?* (DEP 21c). The variable has been divided into three categories; depending on how many times the individual had tried to commit suicide. The groups consist of 1, 2, and ≥3.

Major depression (including bipolar) is a diagnosis set according to algorithms that included the CPRS and the MADRS subscales. MADRS (Montgomery-Åsberg Depression Rating Scale) is used to estimate the severity of depression based on ten items: apparent and reported sadness, inner tension, reduced sleep and appetite, reduced concentration, lassitude, inability to feel, pessimistic and suicidal thoughts. To get the diagnosis major depression, it is required that the individual has at least one of the two cardinal symptoms (depressed mood or anhedonia) and four or more of the remaining symptoms. For more information see Montgomery et al (1979). An individual either has major depression (including bipolar) or not. 0=no, 1=yes.

SIS score is a variable which derives from the Suicide Intent Scale (SIS) (see Appendix 7). This scale was created by Beck et al in 1979, to measure the severity of individuals' suicide-attempts. SIS is a 15 item questionnaire. Each item scores 0-2, yielding a maximum score of 30. SIS comprises of two parts; one which is objective and deals with the practical aspects of the suicide-attempt, such as whether or not the individual left a suicide-note etc. The second part is based on the suicide-attempter subjective description and reconstruction of his/her feelings at the time of the suicide attempt. The SIS score is dichotomised into low/high by taking the median score for both sexes collectively and using them as the point of division. Similar studies have also used the same method of cut off (Lindqvist 2007). The mean score in this study was 14, therefore the dichotomy is as follows: 0-13 (low) =0, 14-30 (high) =1. One individual has not answered the questions.

4.3 Data processing
Statistical analyses were performed with Statistical Package for the Social Sciences, version 15.0.

4.3.1 T-test, ANOVA
The t-test can be used to measure differences in averages between two groups in a random sample. This implies that the t-test can examine whether the differences in averages between the two groups is significant. If there is a significant difference, the outcome is not likely to be due to a random variation in the sample group.

ANOVA, also called the analysis of variance, is a method of analysis used to determine whether three or more independent sample has the same mean (or average groups differ significantly from each other). ANOVA is used instead of several t-tests to examine if mean values between the groups are different. If more than one t-test is run on the same variables, it increases the risk of rejecting a true H0, as the significance level increases for each additional run. To carry out an ANOVA some requirements need to be met; samples need to be normally distributed, the data is at least interval scale, the observations are random and independent of each other and that there is homogeneity of variance (Campbell 2007:131). If the H0 is rejected after an ANOVA test remains to determine which mean values differ from the others. This is done in a so-called post hoc test; this type of test can be done without the significance level being effected (Sirkin 2006:318). In the analyses that follow, the Tukey-test has been used. These results will be presented in the text, not in the table.

4.3.2 Logistic regression
The logistic regression is a statistical analysis technique which is used when the dependant variable is a dichotomy. In the case of this master thesis, it implies that an individual can have low SOC or high SOC. The statistical tool is used to estimate the probability that an event will or will not happen. The logistic regression explains the variation in the dependant variable given a variety of independent variables. The tool makes it possible to explore which variables are important for the variation, and which are not. The results of the

logistic regression are expressed by odds ratio. If the odds ratio is five, this can be interpreted as an event is five-fold among that group who has one outcome, compared to a group who does not (Campbell 2007:169).

Probabilities will be referred to as p-values where $p<0.05$ means that there is a less than 5% risk that the measured odds ratio (OR) is caused by chance, due to the selection of the sample for the study.

4.4 Reliability and validity

Reliability is a way of determining the authenticity and usefulness of a particular instrument, meaning that the same result should be reached when using several different methods. Reliability is the accuracy of the measurement. Validity is a way of determining whether what was meant to be measured actually was measured. These measurements can be seen as a correlation between theory and the operalization of the data. It is important to clarify if the measurement/measurements are relevant for the given study (Ejvegård 2003:70ff). Researchers should always strive for high reliability and validity.

In the study which has been performed in this master thesis, the same type of variables that through previous studies have shown to work well, have been implemented. Several different statistical tools have been used to reassure that the results are reliable. Also, the study consists of a relative high number of participants. Therefore, the reliability and validity in this study is interpreted as high.

4.5 Ethics

The Research Ethics Committee at the University of Gothenburg approved the study. Written consent was obtained from all participants who took part of the study.

5. Results

In the text below the results of the study which was conducted for this master thesis is presented. To begin with, the frequencies for the different variables are presented. The results of the t-test and the ANOVA, which was used to measure the means of SOC and socio-demographic variables, and also clinical variables, are presented. The post-hoc tests are presented in the text that precedes the table. This is followed by the results of the logistic regressions.

5.1 Results of means

In table 1a below we see that within the group which is studied, 38 (47 %) men and 42 (53 %) women took part in the study. 40 individuals belong to the age group 70-79 and 40 belong to the age group 80-91. 29 individuals (36 %) had a partner at the time of the interview. 15 individuals (20 %) were divorced while 35 individuals (46 %) were widows/widowers. 72 individuals (90 %) has or has had children. 40 individuals (50 %) had more than mandatory education. At the time of the interview 26 individuals (34 %) were living alone, while 4 persons (5 %) were living in an institution. 29 individuals (36 %) reported that they had a bad or very bad economic situation during their adolescence, this compared to 34 individuals (43 %) who described it as average. The remaining 17 individuals (21 %) reported having a good or very good economic situation during their adolescence.

The results from the comparison of SOC mean scores among socio-demographic variables are presented below in table 1a. The mean SOC scores are similar among all socio-demographic variables. None of the results presented below are significant, meaning that herein it seems that socio-demographic variables are not associated with SOC. To be sure of this, we need to test the associations with a regression, which is presented below in table 2a.

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Table 1a. **Comparison of SOC-means among socio-demographic variables (n = 80)**

		n	%	Mean	95 % CI of the difference	P
Men		38	47	131.76	-5.497-	
Women		42	53	127.40	14.213	.381
Age	70-79	40	50	131.52	-5.748-	
	80-91	40	50	127.42	13.948	.410
Partner	No	51	64	128.63	-12.314-	
	Yes	29	36	130.81	7.966	.671
Divorced/separated	No	60	80	128.35	-18.600-	
	Yes	15	20	134.27	6.767	.356
Widow/widower	No	41	54	132.07	-4.263-	
	Yes	35	46	126.31	15.781	.256
Has or has had children	No	8	10	123.50	-23.057-	
	Yes	72	90	130.14	9.779	.423
Education beyond mandatory	No	40	50	127.70	-13.409-	
	Yes	40	50	131.25	6.309	.476
Living alone	No	50	66	133.23	-17.189-	
	Yes	26	34	127.22	4.322	.237
Living in an institution	No	76	95	129.42	-23.770-	
	Yes	4	5	130.50	21.612	.925
Economic situation during adolescence	Bad/very bad	29	36	129.24		
	Average	34	43	128.32		
	Good/very good	17	21	132.18		.843

Note: Data from "When life feels difficult to live". Low SOC is a dichotomy of Total SOC-score, first quarter against all others (0=high, 1=low). Sex (0=man, 1=woman). Age has been dichotomised from the variable Participants age at the time of the interview (PSF. 9) (70-79, 80-91). Partner is a dichotomy of the variable Marital status (PSF 10) (0=no, 1=yes). Divorced has been dichotomised (PSF 27) (0=no, 1=yes). Widow/widower has been dichotomised (PSF 20)(0=no, 1=yes). Has or has had children is a dichotomy of the variable Do you have, or have you had children (PSF 45) (0=no, 1=yes). Education beyond mandatory is a dichotomy of the variable What education do you have (RISK 5) (0=no, 1=yes). Living alone was added manually by the interviewer (0=no, 1=yes). Living in an institution was added manually by the interviewer (0=no, 1=yes). Economic situation during adolescence is a dichotomy of the variable (PSF 89) (0=bad/very bad, 1=average, 2=good/very good).

In regards to the frequencies of the social variables (table 1b) we see that 25 individuals (36 %) experienced that they spent too little time with their children. 26 individuals (38 %) experienced that they spent too little time with their grandchildren. We see that 23 individuals (29 %) reported that they spent too little time with their neighbours. 20 individuals (25 %) reported that they had sometime in the past five years moved. 47 individuals (59 %) reported that they were lonely.

Lower mean scores were observed among all of the groups mentioned above, compared to their reference groups. Individuals that reported that they have moved in the past five years have the lowest mean score compared to the other variables. Although when looking at the greatest difference between

groups we see that perceived loneliness shows the strongest association. All results presented below are significant on at least p<0.05.

Table 1b. Comparison of SOC-means among social variables (n = 80)

		n	%	Mean	95 % CI of the difference	P
Time spent with children	Enough	44	64	135.49	-23.057-	
	Too little	25	36	118.88	9.779	**.001**
Time spent with grandchildren	Enough	42	62	134.19	3.935-	
	Too little	26	38	120.46	23.523	**.007**
Time spent with the neighbours	Enough	56	71	133.50	2.615-	
	Too little	23	29	120.30	23.778	**.015**
Moved the past five years	No	60	75	133.65	5.916-	
	Yes	20	25	116.95	27.484	**.003**
Perceived loneliness	No	32	41	140.41	9.632-	
	Yes	47	59	121.57	28.031	**.000**

Note: Data from "When life feels difficult to live". Low SOC is a dichotomy of Total SOC-score, first quarter against all others (0=high, 1=low). Time spent with children is a dichotomy of the variable Do you think you spend enough, too much or too little time with your children? (7) (0=enough, 1=too little). Time spent with grandchildren is a dichotomy of the variable Do you think you spend enough, too much or too little time with your grandchildren? (12) (0=enough, 1=too little). Time spent with neighbours is a dichotomy of the variable Do you think you spend enough, too much or too little time with your neighbours? (19) (0=enough, 1=too little). Moved in the past five years has been dichotomised (PSF. 84) (0=no, 1=yes). Perceived loneliness is a dichotomy of the variable Do you feel lonely? (PSF 82) (0=no, 1=yes)

Looking at the clinical variables, in table 1c below, we see that 62 individuals (78 %) reported anhedonia. 44 individuals (55 %) reported hopelessness. 45 individuals (56 %) reported that they had a poor physical health. 57 individuals (71 %) reported that they tried to commit suicide once. 16 individuals (20 %) had two suicide-attempts, while 7 individuals (9 %) had three or more suicide-attempts. 52 individuals (65 %) got the diagnoses major depression. 52 individuals (66 %) had a high mean score on the Suicide Intent Scale.

The mean SOC score was lower among individuals who reported anhedonia, hopelessness, and major depression. Whilst looking at the SOC-means for number of previous suicide attempts we see that the ANOVA is significant on p<0.005. The post hoc test indicates that there is a significant difference between those reporting one suicide attempt and those reporting three or more suicide attempts (130.74 vs. 104.29 CI 6.55-46.35 p 0.006). We see the same tendency among those reporting two suicide attempts and those reporting three suicide attempts (136.00 vs. 104.29 CI 9.19-54.23 p 0.003). No difference was found between the groups with one suicide attempt or two suicide attempts. As the p-value for SIS score is nearly significant, it is possible that the logistic regression below (table 2c) shows it as significant.

Table 1c.   **Comparison of SOC-means among control variables (n = 80)**

		n	%	Mean	95 % CI of the difference	P
Anhedonia	No	17	22	142.88	-5.348-	
	Yes	62	78	125.98	28.449	**.005**
Hopelessness	No	36	45	139.33	8.841-	
	Yes	44	55	121.41	27.007	**.000**
Physical health	Good	35	44	134.03	-1.706-	
	Bad	45	56	125.93	17.897	.104
Number of previous suicide attempt	1	57	71	130.74		
	2	16	20	136.00		
	≥3	7	9	104.29		**.004**
Major depression*	No	28	35	140.29	6.964-	
	Yes	52	65	123.65	26.299	**.001**
SIS score	Low	27	34	135.26	-1.797-	
	High	52	66	126.69	18.931	.104

Note: Data from "When life feels difficult to live". Low SOC is a dichotomy of Total SOC-score, first quarter against all others (0=high, 1=low). Anhedonia is a dichotomy of the variable Reduced emotional involvement (DEP.12) (0=no, 1=yes). Hopelessness is a dichotomy and derives from the variable Do you think your situation is hopeless? (GDS. 14) (0=no, 1=yes). Physical health is a dichotomy of the variable Number of somatic categories with a rating >2 (CIRS 15) (0=good, 1=bad). Number of previous suicide attempt is a dichotomy of the variable How many times have you tried to take your own life? (DEP. 21c) (0= 1, 1=2 , 2= ≥3). Major depression is a diagnosis (0=no, 1=yes). SIS score is a dichotomy of the variable Total SIS-score (Total score), mean score for both sexes (0=low, 1=high). * including bipolar.

5.2 Results of bivariate logistic regressions

To establish which variables should be included in the multivariate analyses, bivariate regressions were done on all socio-demographic, social and clinical variables. Those results which are significant are highlighted, and are those variables which will be further analysed. In the analyses that follow, the dependant variable (SOC) is analysed as a dichotomy.

In table 2a the results of the association between low SOC and socio-demographic variables are presented. The results of the logistic regression endorse the results of the mean scores found in table 1a, in which we can conclude that no significant association between SOC and socio-demographic variables has been found in this study. Notable, is that the variables has or has had children and living alone are nearly significant.

Table 2a. **Association between low SOC and socio-demographic variables. Bivariate logistic regression.**

	OR	95 % CI	p
Sex	.875	.318-2.409	.796
Age	1.014	.921-1.116	.778
Partner	.500	.161-1.558	.232
Divorced	1.091	.302-3.943	.894
Widow/widower	1.073	.379-3.037	.894
Has or has had children	.286	.064-1.272	.100
Education beyond mandatory	.583	.209-1.631	.304
Living alone	.277	.072-1.061	.061
Living in an institution	1.00	.098-10.196	1.00
Economic situation during adolescence	.689	.340-1.395	.300

Note: Data from "When life feels difficult to live". Low SOC is a dichotomy of Total SOC-score, first quarter against all others (0=high, 1=low). Sex (0=woman, 1=man). Age is a continuous variable which derives from the variable Participants age at the time of the interview (PSF. 9). Partner is a dichotomy of the variable Marital status (PSF 10) (0=no, 1=yes). Divorced has been dichotomised (PSF 27) (0=no, 1=yes). Widow/widower has been dichotomised (PSF 20) (0=no, 1=yes). Has or has had children is a dichotomy of the variable Do you have, or have you had children (PSF 45) (0=no, 1=yes). Education beyond mandatory is a dichotomy of the variable What education do you have (RISK. 5) (0=no, 1=yes). Living alone was added manually by the interviewer (0=no, 1=yes). Living in a institution was added manually by the interviewer (0=no, 1=yes). Economic situation during adolescence is a dichotomy of the variable (PSF. 89) (0=good/very good, 1=average, 2=bad/very bad).

Below in table 2b the results of the associations between SOC and social variables are presented. Low SOC score is associated with *time spent with children*, *time spent with grandchildren*, *having moved in the past five years*, and *perceived loneliness*. These results are significant on at least p<0.05. While *time spent with neighbours* had a significant association with mean SOC (table 1b.), the association did not remain in the bivariate logistic regression.

As we can see below *Time spent with grandchildren* and *perceived loneliness* has the strongest association with low SOC. The OR for these variables is more than five-fold for those who spend too little time with their grandchildren and those who reported perceived loneliness, compared to their reference groups. The OR is nearly four-fold for those who spend too little time with their children compared to those spending enough time with their children. The OR declines somewhat compared to the other control variables, when analyzing *moved the past five years*. Here, the OR is three-fold for those reporting that they have moved compared to those who have not. All of the results are significant on at least p<0.05.

Table 2b.   **Association between low SOC and social variables. Bivariate logistic regression.**

	OR	95 % CI	p
Time spent with children	4.222	1.303-13.678	**.016**
Time spent with grandchildren	5.427	1.609-18.299	**.006**
Time spent with neighbours	2.630	.906-7.634	.075
Moved the past five years	3.645	1.217-10.918	**.021**
Perceived loneliness	5.478	1.450-20.697	**.012**

Note: Data from "When life feels difficult to live". Low SOC is a dichotomy of Total SOC-score, first quarter against all others (0=no, 1=yes). Time spent with children is a dichotomy of the variable Do you think you spend enough, too much or too little time with your children? (7) (0=enough, 1=too little). Time spent with grandchildren is a dichotomy of the variable Do you think you spend enough, too much or too little time with your grandchildren? (12) (0=enough, 1=too little). Time spent with neighbours is a dichotomy of the variable Do you think you spend enough, too much or too little time with your neighbours? (19) (0=enough, 1=too little). Moved in the past five years has been dichotomised (PSF. 84) (0=no, 1=yes). Perceived loneliness is a dichotomy of the variable Do you feel lonely? (PSF 82) (0=no 1=yes).

In table 2c below the association between low SOC and clinical variables are presented. Firstly, we see that the OR is nearly seven-fold among the individuals reporting anhedonia compared to those who did not, although this result is not significant. The OR is three-fold for individuals who experience their situation as hopeless compared to those who do not; this result is significant on $p<0.05$. Physical does not have a significant association with SOC, which the OR below entails. The OR is three-fold for individuals reporting three or more previous suicide attempts compared to the reference groups. This result is significant on $p<0.05$. The OR is fifteen-fold for those who have the diagnosis major depression compared to those who do not, this is significant on $p<0.05$. Lastly, the OR is nearly four-fold for individuals reporting a high SIS-score compared to those who did not. This result is also significant on $p<0.05$.

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Table 2c. Association between low SOC and clinical variables. Bivariate logistic regression.

	OR	95 % CI	p
Anhedonia	7.070	.873-57.226	.067
Hopelessness	3.207	1.034-9.944	**.044**
Physical health	.688	.200-2.366	.552
Number of previous suicide attempt	3.000	1.393-6.462	**.005**
Major depression*	15.545	1.953-123.714	**.010**
SIS score	3.886	1.025-14.733	**.046**

Note: Data from "When life feels difficult to live". Low SOC is a dichotomy of Total SOC-score, first quarter against all others (0= , 1=). Anhedonia is a dichotomy of the variable Reduced emotional involvement (DEP.12) (0=no, 1=yes). Hopelessness is a dichotomy and derives from the variable Do you think your situation is hopeless? (GDS. 14) (0=no, 1=yes). Physical health is a dichotomy of the variable Number of somatic categories with a rating >2 (CIRS 15) (0=good, 1=bad). Number of previous suicide attempt is a dichotomy of the variable How many times have you tried to take your own life? (DEP. 21c) (0= 1, 1=2 , 2= ≥3). Major depression is a diagnosis (0=no, 1=yes). SIS score is a dichotomy of the variable Total SIS-score (Total score), mean score for both sexes (0=low, 1=high). * including bipolar.

5.3 Results of multivariate logistic regressions

In tables 3-6 below the results of the multivariate logistic regressions are presented. In the following tables, only the variables which were shown to have a significant impact on SOC in the bivariate analyses are shown. Every control variable has been entered on its own in the model and has been analyzed separately, this was done as the clinical variables which are used, often correlate as they have a relationship with suicide. These are considered far too important to exclude them. Previous studies have also used this method (Sjöström 2009).

Low SOC score was associated with time spent with children, as the bivariate analysis indicates (table 2b). As seen in table 3, the association remains when adjusting for hopelessness, number of previous suicide attempts, major depression including bipolar, and SIS score. We see that the OR decreases somewhat when adjusting for all clinical variables except major depression. Here, the OR is nearly five-fold compared among those spending too little time with their children compared to those spending enough time with their children. All of the results are significant on at least p<0.05.

Table 3.   **Association between low SOC and time spent with children.**
                 Logistic regression.

	Time spent with children		
	OR	95 % CI	p
Bivariate	4.222	1.303-13.678	**.016**
Model 1	3.540	1.030-12.168	**.045**
Model 2	3.760	1.025-13.791	**.046**
Model 3	4.750	1.336-16.881	**.016**
Model 4	3.593	1.082-11.929	**.037**

Note: Data from "When life feels difficult to live". Model 1: Adjusted for hopelessness. Model 2: Adjusted for number of previous suicide attempts. Model 3: Adjusted for major depression (including bipolar). Model 4: Adjusted for SIS score.

In table 4 below we see that low SOC score is associated with time spent with grandchildren. Here, as well as among the results above in table 3 the results remain when adjusting for the clinical variables. The OR decreases somewhat when adjusting for all clinical variables except major depression and SIS score. The OR for major depression is nearly six-fold among those spending too little time with their children compared to those spending enough time with their children. All of the results are significant on at least p<0.05.

Table 4.   **Association between low SOC and time spent with grandchildren. Logistic regression.**

	OR	Time spent with grandchildren 95 % CI	p
Bivariate	5.427	1.609-18.299	**.006**
Model 1	4.875	1.420-16.740	**.012**
Model 2	5.037	1.309-19.380	**.019**
Model 3	5.964	1.615-22.030	**.007**
Model 4	5.486	1.567-19.204	**.008**

Note: Data from "When life feels difficult to live". Model 1: Adjusted for hopelessness. Model 2: Adjusted for number of previous suicide attempt. Model 3: Adjusted for major depression (including bipolar). Model 4: Adjusted for SIS score.

Below in table 5, we see that low SOC score is associated with having moved in the past five years. Having moved in the past five years indicates a nearly fourfold effect of having low SOC. This association remains and increases somewhat when adjusting all clinical variables except hopelessness, where the OR decreases to some extent. The strongest OR is found when controlling for number of previous suicide attempt, where the OR is nearly five-fold among those reporting that they have moved in the past five years compared to those who have not. All of the results are significant on at least $p < 0.05$.

Table 5.   Association between low SOC and having moved the past five years. Logistic regression.

	Moved in the past five years		p
	OR	95 % CI	
Bivariate	3.645	1.217-10.918	**.021**
Model 1	3.168	1.027-9.769	**.045**
Model 2	4.785	1.376-16.641	**.014**
Model 3	4.035	1.184-13.743	**.026**
Model 4	4.256	1.325-13.667	**.015**

Note: Data from "When life feels difficult to live". Model 1: Adjusted for hopelessness. Model 2: Adjusted for number of previous suicide attempt. Model 3: Adjusted for major depression (including bipolar). Model 4: Adjusted for SIS score.

As table 6 below indicates, low SOC is associated with perceived loneliness. This indicates more than a fivefold effect of having low SOC. All of the results remain when adjusting for the clinical variables. The OR decreased somewhat when among all clinical variables except number of previous suicide attempt. Here, we see that the OR is seven-fold among those individuals reporting perceived loneliness compared to those who did not. All results presented below are significant on at least $p<0.05$.

Table 6.   **Association between low SOC and perceived loneliness. Logistic regression.**

	Perceived loneliness		
	OR	95 % CI	p
Bivariate	5.478	1.450-20.697	**.012**
Model 1	4.313	1.095-16.992	**.037**
Model 2	7.057	1.437-34.662	**.016**
Model 3	4.021	1.005-16.096	**.049**
Model 4	4.678	1.209-18.101	**.025**

Note: Data from "When life feels difficult to live". Model 1: Adjusted for hopelessness. Model 2: Adjusted for number of previous suicide attempt. Model 3: Adjusted for major depression (including bipolar). Model 4: Adjusted for SIS score.

6. Analyses and discussion

The aim of this study was to test the relationship between socio-demographic and social variables with SOC. Social variables are associated with SOC among this group of suicide-attempters. The results presented above in the bivariate logistic regression, show that *perceived loneliness* and *time spent with grandchildren* have the strongest association with low SOC. Notable here is that these associations are similar to *time spent with children* and *moved in the past five years*. The results in tables 3-6 above indicate that these social variables are independent predictors of low SOC.

Antonovsky mentions quite often in his book that individual's life situation, such as education level, work and personal economy can have an impact on SOC (2005). Such variables, which are regarded as socio-demographic variables herein, did not have an impact in this study. However, we do not know if Antonovsky was referring to a specific age group. It is likely that such variables mentioned above are not relevant to the age group studied herein. Factors such as those regarding social support and inclusion are of greater importance for elderly individuals' SOC. Social support is a crucial coping resource which helps the development of a strong SOC. What needs to be remembered is that suicide-attempters are not a homogenous group. Many of the respondents have mental health problems (MHP) which are likely to have a negative effect on social relations. It is possible that an individual with MHP can not provide others with social support in the same way that they receive it. This might develop a sense of guilt in the individual. Also, the social aspect of two suicidal individuals' life can vary quite massively from each other. Although, what these individuals often have in common are psychiatric disorders such as depression. However, depression cannot single handed explain why individuals try to or commit suicide (Beskow 2005).

Too little time spent with children and *grandchildren* has a negative effect on SOC. The amount of time that one spends with close ones is likely to have an effect on on the individuals' level of social support, and social inclusion. Nilsson (2000) found similar results in a Swedish population sample. Considering the fact that elderly constitute a group vulnerable to social change such as loss of loved ones and friends, it is likely that the relations that exist with children and grandchildren are more important as age increases, as they are less likely to pass away than those of the same age. Also, it is possible that elderly individuals experience spending time with those who are related and of younger age as uplifting. It is reasonable to think that too little time spent with children and grandchildren will affect individuals' sense of manageability. Children and grandchildren can be seen as what Antonovsky calls resources (1991:40), as they often are something that elderly individuals rely on in different situations making life easier to live. If an individual feels like they do not have anybody to confide in, it may be difficult to meet the demands that the world puts on us in everyday life. It is also likely that children and grandchildren have an effect on individuals' sense of meaningfulness. As spending enough time with children and grandchildren might be an uplifting experience, it is likely that spending too

little time with them might imply the opposite and result in the individual feeling that life has no emotional meaning.

Having *moved in the past five years* has a negative effect on SOC. Moving might have the same effect as time spent with children and grandchildren; that it affects the individuals' level of social inclusion. Although, only one respondent reported that they were forced to move, and that their contact with others had declined as a result of them moving (results not presented). It is likely that the area the individual lives in, or the habits that the individual has had before he or she moved was of great importance for the individual's capacity to feel secure. Having moved in the past five years might disrupt individuals' sense of comprehensibility, as it implies that their external world changes in several ways. Moving implies that the external world, such as the individuals' home or area changes suddenly. This can be a home in which the individual has spent the majority of their life in, and is a place where many memories are situated which can have an effect on the individuals internal world. The internal world can also be affected as moving can be a result of different factors such as physical state or loss of ones partner.

Perceived loneliness has a negative effect on SOC. Loneliness is likely to both be effected and affect the level of social inclusion an individual has. It is likely that loneliness affects individuals' sense of meaningfulness. As meaningfulness implies that life is worthy of placing energy on, it is possible that individuals who report loneliness do not feel motivated to do so. As the question in the formulary only asks whether or not the individual is lonely, it is difficult to analyze these answers, as we do not know to what degree the individuals are lonely. Although it is likely, considering that loneliness is mentioned as a risk factor in numerous studies of suicide (De Leo 2002, Lebret 2006, Waern 2000), that this state might lead to individuals feeling no emotional meaning. Feeling this way, or rather not feeling, is likely to affect other areas of the individuals' life, as it is difficult to function with a lack of emotions.

As the results presented herein showed SOC is associated with social variables, it is not unlikely that lack of SOC can result in alienation. It is possible that this, combined with psychiatric disorders, might lead individuals to attempt suicide. The results of the study show the importance of having a satisfying social life, as it may affect the individuals coping ability. Given the fact that the population is getting older, and that younger generations will be far fewer in comparison, it is possible that low SOC will become a far more common state among elderly. This is in line with the results presented herein, as social support is associated with SOC. This study implies that SOC cannot be seen as a single individual's responsibility, but instead all of society should supply its members with such resources that can help to strengthen SOC.

6.1 Method discussion

Some methodological issues need to be addressed. The type of method which is used in studies can always be discussed. The study which this master thesis is built upon is descriptive with a quantitative approach. This was considered the most appropriate in regards to the aim of the study. Due to the fact that

this study is based on secondary data, it has not been possible to choose what type of study was to be conducted. To perform a quantitative or a qualitative interview on this subject single-handedly would be highly difficult. As it is a very sensitive area, knowledge and clinical skills from the field of psychiatry are needed. Without this the interview could be perceived as very offensive. To contact individuals that have tried to take their own lives also calls for collaboration with those medical wards which the suicide-attempter is in contact with.

All cases were recruited from hospitals; it is possible that some elderly suicide-attempters do not seek hospital care. It also is possible that the prevalence of depression is underestimated, as elderly might feel shame and taboo as to admitting their actual condition. Also, it may be difficult for medical staff to detect depression in the elderly. Some subgroups are small, which is reflected through the large confidence intervals, which is a limitation in interpreting the results. The results of this study can not be generalized to all demographic settings and cultures, as it deals with a special group of elderly suicide-attempters. It is possible that the respondents' answers influenced by the fact that the interviewer asked the questions instead of them answering the questionnaire on their own. Thus, this was seen as the only possible way, as many of the respondents were in a quite vulnerable state, both mentally and physically at the time of the interview. This might have led to that the questions would be misunderstood, and perhaps not even answered.

It can be discussed as to why only suicide-attempters have been studied herein. What should be remembered is that suicide-attempters are not a homogenous group; they differ from each other quite massively. A control group consisting of non suicide-attempters of the same age as the group studied herein is necessary to draw conclusions.

7. Summary and recommendations for future studies

The results of this study show that social variables are associated with SOC. Spending too little time with one's children, grandchildren as well as perceived loneliness and having moved in the past five years is associated with low SOC. This may be explained by the lack of social inclusion that these variables imply. It is also likely that routines, such as those gained from living in the same area for a long time, are of great importance for the individual. Social support may be able to help elderly individuals strengthen their SOC, which can have a tremendous impact on their wellbeing. A rich social life might make it easier to handle life's challenges.

A prospective study would be of great interest as it can give a comprehensive outlook on the phenomenon. A longitudinal study with repeated measurements is needed to validate that SOC has the effect which this study has shown. Also, a population based control group, consisting of non suicide-attempters of the same age as the group studied herein should be studied. It might also be of interest to examine other age-groups to see if the association found herein, is found elsewhere.

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Appendix

Appendix 1 – Part of questionnaire (When life feels difficult to live)

Appendix 2 – Part of questionnaire (Social network)

Appendix 3 – Sense of Coherence (SOC)

Appendix 4 – Montgomery Asberg Depression Rating Scale (MADRS)

Appendix 5 – Geriatric Depression Scale - 20 (GDS 20)

Appendix 6 - Cumulative illness rating scale for geriatrics (CIRS-G)

Appendix 7 - Suicide Intent Scale (SIS)

APPENDIX 1

Part of questionnaire
When life feels difficult to live

RISK 5.   Education beyond mandatory

1. 6 years of school or less
2. More than 6 years of school

PSF 10.   Marital status

10. Never had a relationship
11. Unmarried, divorced
12. Unmarried, widow/widower
13. Live-apart partner

20. Married
21. Married, not cohabitating
22. Cohabitating, marriage-like

30. Other

PSF 20.   Widow/widower

0. Never married, cohabitated
1. Cohabitating not married
2. Married
3. Widow/widower since more than 5 years
4. Widow/widower since 1-5 years
5. Widow/widower since 0-1 years
6. Divorced or separated
9.

PSF 27.   Divorced or separated?

0. Not divorced or separated
1. Divorced or separated since more than 5 years
2. Divorced or separated since 1-5 years
3. Divorced or separated since 0-1 years

PSF 45.   Do you have or have you had children?

0. Never had children
1. Has had children, now deceased
2. Has children
3. 1+2
9.

PSF 82.   Do you feel lonely?

0. Not lonely
1. Yes, since more than 5 years
2. Yes, since 1-5 years
3. Yes, since 0-1 years
9.

PSF 84.   Moved in the past five years

0. No.
1. Yes, 1-5 years ago, willingly
2. Yes, 0-1 years ago, willingly
3. Yes, 1-5 years ago, inflicted
4. Yes, 0-1 years ago, inflicted
5. Yes, more than one moves, all willingly
6. Yes, more than one move, inflicted in some cases
9.

PSF 89.   Economic situation during adolescence

0. Very bad. Received welfare benefits, had to beg, lack of food at times.
1. Bad.
2. Average.
3. Good.
4. Very good.
9.

APPENDIX 2

Part of questionnaire (Social network)

7. Do you spend enough, too little, or too much time with your children?

> **1** ☐ **Too much**
>
> **2** ☐ **Enough**
>
> **3** ☐ **Too little**

12. Do you spend enough, too little, or too much time with your grandchildren?

> **1** ☐ **Too much**
>
> **2** ☐ **Enough**
>
> **3** ☐ **Too little**

19. Do you spend enough, too little, or too much time with your neighbours?

> **1** ☐ **Too much**
>
> **2** ☐ **Enough**
>
> **3** ☐ **Too little**

APPENDIX 3

Sense of Coherence (SOC)

When you talk to people, do you have a feeling that they do not really understand you?

Never have   1   2   3   4   5   6   7 Always have that
that feeling   that feeling

In the past, when you had to do something that involved cooperating with others, did you have a feeling that it

It would not   1   2   3   4   5   6   7 It would without a
be possible   doubt be possible

Think of the people that you come in daily contact with, except those closest to you. How well do you know most of them?

Feels like   1   2   3   4   5   6   7   Feels like I know them
they are   very well
strangers

Do you have the feeling that you do not actually care of what is taking place around you?

Very seldom 1   2   3   4   5   6   7 Very often
or never

Has it ever happened that you have been surprised of the behaviour of people you thought you knew?

Has never   1   2   3   4   5   6   7 Has happened
happened   very often

Has it ever happened that people you trusted have disappointed you?

Has never   1   2   3   4   5   6   7 Has happened
happened   very often

Life is

Very   1   2   3   4   5   6   7   Pure routine
interesting

Do you feel that your life until now

Lacking goals 1   2   3   4   5   6   7   Clear goals
and meaning   and meaning

Do you have a feeling that you have been treated unfairly?

Very often   1   2   3   4   5   6   7   Very seldom
                                                   or never

Has your life during the past ten years been

Full of chan-   1   2   3   4   5   6   7   Entirely consistent
ges without
you knowing
what is going
to happen next

Most of what you will do in the future will probably

Very   1   2   3   4   5   6   7   Terribly boring
fascinating   and monotonous

Do you have the feeling of being in an unfamiliar situation without knowing
what to do?

Very often   1   2   3   4   5   6   7   Very seldom
                                                   or never

What best describes your approach to life?

One can   1   2   3   4   5   6   7   There are no
always find   solutions for
a solution for   the difficult
the difficult   aspects of life
aspects of life

When you think how your life is does it happen very often that you

Feel how nice it is to live	1	2	3	4	5	6	7	Wonder why you exist at all

When you are faced with a difficult problem, is your choice of solution to the problem

Always con-fusing and difficult to find	1	2	3	4	5	6	7	Always perfectly clear

Are your daily chores

A source of joy and content	1	2	3	4	5	6	7	A nuisance and bore

In the future, your life is likely to be

Full of chan-ges without knowing what will happen next	1	2	3	4	5	6	7	Without changes and surprises

When something unpleasant happened to you previously, did you used to

Repine	1	2	3	4	5	6	7	Say that "that's that" and move on

Do you have very mixed and disorganized feelings, thoughts and ideas that jump from one to the other

Very often	1	2	3	4	5	6	7	Very seldom or never

When you do something that you feel good of doing

You assume   1   2   3   4   5   6   7   Something always
that you always   happens to sabotage
will feel good   that feeling

Does it happen that you have feelings that you would prefer not to acknowledge

Very often   1   2   3   4   5   6   7   Very seldom
                                                                   or seldom

If you imagine your future life how do you think it will be

Totally with-   1   2   3   4   5   6   7   All parts are
out meaning   meaningful

Do you think that in the future there will always be people around you that you can count on

There will   1   2   3   4   5   6   7   Not likely
certainly be   there will be

Does it happens that you have a feeling that you do not know exactly what is about to happen

Very often   1   2   3   4   5   6   7   Very seldom
                                                                   or never

Many people, even those with a strong character sometimes feel like sore losers in specific situations. How often have you felt that way?

Never   1   2   3   4   5   6   7   Very often

When something has happened, have you often found that you

Over- or   1   2   3   4   5   6   7   Have put things
underestimate   in their right
its importance   order

When you think of difficulties you are likely to face when dealing with important aspects of your life, do you have a feeling that

| You will succeed in overcoming difficulties | 1 | 2 | 3 | 4 | 5 | 6 | 7 | You will never overcome difficulties |

How often do you have a feeling that there is little or no sense in what you do in your daily life

| Very often | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Very seldom or never |

How often do you feel that you are not sure that you are able to control yourself

| Very often that feeling | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Very seldom or never |

Montgomery Åsberg
Depression Rating Scale

The rating should be based on a clinical interview moving from broadly phrased questions about symptoms to more detailed ones which allow a precise rating of severity. The rater must decide whether the rating lies on the defined scale steps (0, 2, 4, 6) or between them (1, 3, 5) and then report the appropriate number. The items should be rated with regards to the state of the patient over the past week

1 - APPARENT SADNESS - Representing despondency, gloom and despair, (more than just ordinary transient low spirits) reflected in speech, facial expression, and posture. Rate by depth and inability to brighten up

0   No sadness
1
2   Looks dispirited but does brighten up without difficulty
3
4   Appears sad and unhappy most of the time
5
6   Looks miserable all the time. Extremely despondent.

2 - REPORTED SADNESS - Representing reports of depressed mood, regardless of whether it is reflected in appearance or not. Includes low spirits, despondency or the feeling of being beyond help and without hope. Rate according to intensity, duration and the extent to which the mood is reported to be influenced by events

0 Occasional sadness in keeping with the circumstances.
1
2 Sad or low but brightens up without difficulty.
3
4 Pervasive feelings of sadness or gloominess. The mood is still influenced by external circumstances.
5
6 Continuous or unvarying sadness, misery or despondency.

3 - INNER TENSION - Representing feelings of ill-defined discomfort, edginess, inner turmoil, mental tension mounting to either panic, dread or anguish. Rate according to intensity, frequency, duration and the extent of reassurance called for.

0 Placid. Only fleeting inner tension.
1
2 Occasional feelings of edginess and ill-defined discomfort
3

4 Continuous feelings of inner tension or intermittent panic which the patient can only master with some difficulty.
5
6 Unrelenting dread or anguish. Overwhelming panic.

4 - REDUCED SLEEP - Representing the experience of reduced duration or depth of sleep compared to the subject's own normal pattern when well.

0 Sleeps as usual.
1
2 Slight difficulty dropping off to sleep or slightly reduced, light or fitful sleep
3
4 Sleep reduced or broken by at least two hours.
5
6 Less than two or three hours sleep.

5 - REDUCED APPETITE - Representing the feeling of a loss of appetite compared with when well. Rate by loss of desire for food or the need to force oneself to eat.

0   Normal or increased appetite.
1
2   Slightly reduced appetite
3
4   No appetite. Food is tasteless.
5
6   Needs persuasion to eat at all.

6 - CONCENTRATION DIFFICULTIES - Representing difficulties in collecting one's thoughts mounting to incapacitating lack of concentration. Rate according to intensity, frequency, and degree of incapacity produced.

0   No difficulties in concentrating.
1
2   Occasional difficulties in collecting one's thoughts.
3
4   Difficulties in concentrating and sustaining thought which reduces ability to read or hold a conversation.
5
6   Unable to read or converse without great difficulty.

7 - LASSITUDE - Representing a difficulty getting started or slowness initiating and performing everyday activities.

0 Hardly any difficulties in getting started. No sluggishness.
1
2 Difficulties in starting activities.

3
4 Difficulties in starting simple routine activities, which are carried out with effort.
5
6 Complete lassitude. Unable to do anything without help.

8 - INABILITY TO FEEL - Representing the subjective experience of reduced interest in the surroundings, or activities that normally give pleasure.The ability to react with adequate emotion to circumstances or people is reduced.

0 Normal interest in the surroundings and in other people.
1
2 Reduced ability to enjoy usual interests.
3
4 Loss of interest in the surroundings. Loss of feelings for friends and acquaintances.
5
6 The experience of being emotionally paralyzed, inability to feel anger, grief or pleasure and a complete or even painful failure to feel for close relatives and friends.

9 - PESSIMISTIC THOUGHTS - Representing thoughts of guilt, inferiority, self-reproach, sinfulness, remorse and ruin.

0 No pessimistic thoughts.
1
2 Fluctuating ideas of failure, self-reproach or self-depreciation.
3
4 Persistent self-accusations, or definite but still rational ideas of guilt or sin. Increasingly pessimistic about the future
5
6 Delusions of ruin, remorse and unredeemable sin. Self-accusations which are absurd and unshakable.

10 - SUICIDAL THOUGHTS - Representing the feeling that life is not worth living, that a natural death would be welcome, suicidal thoughts, and preparations for suicide. Suicidal attempts should not in themselves influence the rating.

0 Enjoys life or takes it as it comes.
1
2 Weary of life. Only fleeting suicidal thoughts.
3
4 Probably better off dead. Suicidal thoughts are common, and suicide is considered as a possible solution, but without specific plans or intention.
5

6 Explicit plans for suicide when there is an opportunity. Active preparations for suicide.

APPENDIX 5

Geriatric Depression Scale-20 (GDS20)

Patients name:
………………………………………………………………………...……
Date of birth:
………………………………………………..………………………………
Date:
………………………………………………………………………………..
Interviewer:
………………………………………………………………………………..

	Yes	**No**
1. Are you satisfied with your life?	❏	❏
2. Have you given up many activities and interests?	❏	❏
3. Do you think your life is empty?	❏	❏
4. Do you often get bored?	❏	❏
5. Are you usually in a good mood?	❏	❏
6. Are you afraid that something is going to happen to you?	❏	❏
7. Do you most often feel happy and content?	❏	❏
8. Do you often feel helpless?	❏	❏
9. Would you rather stay at home than to go out and try new things?	❏	❏

10. Do you think that you have more problems with your memory than most?

❏ ❏

11. Do you think it feels good to be alive?

❏ ❏

12. Do you feel worthless the way that you are now?

❏ ❏

13. Do you feel full of energy?

❏ ❏

14. Do you think your situation is hopeless?

❏ ❏

15. Do you think that most others have it better than you?

❏ ❏

16. Do you have difficulties falling asleep and/or wake up early in the morning? ❏ ❏

17. Are you often worried or anxious?

❏ ❏

18. Can you sometime feel a strong concern that is unbearable?

❏ ❏

19. Do you have pain/ache in your body?

❏ ❏

20. Do you often worry that you have a physical illness?
❏ ❏

Total score: ……..

APPENDIX 6

Scoring Sheet

CUMULATIVE ILLNESS RATING SCALE FOR GERIATRICS (CIRS-G)

PATIENT_____AGE_____
DATE   OF   BIRTH_   _   _   _   _   _-_   _   _   _RATER
_____DATE_____

RATING STRATEGY
0 - No Problem
1 - Current mild problem or past significant problem
2 - Moderate disability or morbidity/requires "first line" therapy
3 - Severe/constant significant disability/"uncontrollable" chronic problems
4 - Extremely Severe/immediate treatment required/end organ failure/severe impairment in function

CIRS 1. HEART ____

CIRS 2. VASCULAR ____

CIRS 3. HEMATOPOIETIC ____

CIRS 4. RESPIRATORY ____

CIRS 5. EYES, EARS, NOSE AND THROAT AND LARYNX ____

CIRS 6. UPPER GI ____

CIRS 7. LOWER GI ____

CIRS 8. LIVER ____

CIRS 9. RENAL ____

CIRS 10. GENITOURINARY ____

CIRS 11. MUSCULOSKELETAL/INTEGUMENT ____

CIRS 12. NEUROLOGICAL ____

CIRS 13. ENDOCRINE/METABOLIC AND BREAST   ____

CIRS 14. PSYCHIATRIC ILLNESS INCLUDING DEMENTIA   ____

CIRS 15. TOTAL NUMBER CATEGORIES <2____
CIRS 16.TOTAL SCORE___ ___

CIRS 17.   *FILL IN HERE*   **TOTAL ___ ___**

Appendix 7
Suicide Intent Scale (SIS)

Objective Circumstances Related to Suicide Attempt

1. Isolation
0. Somebody present
1. Somebody nearby, or in visual or vocal contact
2. No one nearby or in visual or vocal contact   ____

2. Timing
0. Intervention is probable
1. Intervention is not likely
2. Intervention is highly unlikely   ____

3. Precautions against discovery/intervention
0. No precautions
1. Passive precautions (as avoiding other but doing nothing to prevent their intervention; alone in room with unlocked door)
2. Active precautions (as locked door)   ____

4. Acting to get help during/after attempt
0. Notified potential helper regarding attempt
1. Contacted but did not specifically notify potential helper regarding attempt
2. Did not contact or notify potential helper   ____

5. Final acts in anticipation of death (will, gifts, insurance)
0. None
1. Thought about or made some arrangements
2. Made definite plans or completed arrangements   ____

6. Active preparation for attempt
0. None
1. Minimal to moderate
2. Extensive   ____

7. Suicide Note
0. Absence of note
1. Note written, but torn up; note thought about
2. Presence of note   ____

8. Overt communication of intent before the attempt
0. None
1. Equivocal communication
2. Unequivocal communication   ____

Self Report

9. Alleged purpose of attempt
0. To manipulate environment, get attention, get revenge
1. Components of above and below
2. To escape**,** surcease**,** solve problems   ____

10. Expectations of fatality
0. Thought that death was unlikely
1. Thought that death was possible but not probable
2. Thought that death was probable or certain   ____

11. Conception of method's lethality
0. Did less to self than she/he thought would be lethal
1. Wasn't sure if what she/he did would be lethal
2. Equaled or exceeded what she/he thought would be lethal   ____

12. Seriousness of attempt
0. Did no seriously attempt to end life
1. Uncertain about seriousness to end life
2. Seriously attempted to end life   ____

13. Attitude toward living/dying
0. Did not want to die
1. Components of above and below
2. Wanted to die   ____

14. Conception of medical rescuability
0. Thought that death would be unlikely if he received medical attention
1. Was uncertain whether death could be averted by medical attention
2. Was certain of death even if he received medical attention   ____

15. Degree of premeditation
0. None; impulsive
1. Suicide contemplated for three hours of less prior to attempt
2. Suicide contemplated for more than three hours prior to attempt   ____

TOTAL SCORE   ____