Universiteit Utrecht

Childhood Maltreatment and Suicide

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Abstract

This research focuses on the relationship between childhood maltreatment and suicide. The types of maltreatment that are included are physical abuse, sexual abuse, emotional maltreatment and physical neglect, and suicide is operationalized by the variables suicidal thoughts, suicide attempts, and a combination of both. It is hypothesized that the types of maltreatment are all related to the suicide variables, and that these relationships are influenced by the factors gender, negative self-concept, social support, teacher support, family support, and connectedness with parents. Results show that there is hardly any significant direct relationship between the maltreatment types and suicide variables. Only sexual abuse is related with suicide attempts and suicide (total), and emotional maltreatment with suicide (total). The chi-square analyses of the factors shows significance between the suicide variables and almost all factors. However, there is hardly any significance between the factors and the maltreatment types. The logistic regression analyses of the risk/protective factors, the types of maltreatment and the suicide types shows that 'negative self-concept' and 'teacher support' are the most important risk factors, and 'connectedness with parents' is the largest protective factor of suicide in maltreated persons.

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Foreword

For my master Clinical and Health Psychology at Utrecht University, I wrote this master thesis. A couple of months before the master started, I decided that I wanted to try to do my master thesis abroad. I preferred to do the research about trauma. Together with Chantal Gilde, I sent motivational and application letters to institutes that are focused on trauma. One month before the master started in Utrecht, we got confirmation from Prof. Ask Elklit from the Videnscenter for Psykotraumatologi in Odense that we were welcome to come over. From the list of subjects that we could choose from, we chose childhood maltreatment in combination with suicide, because there was a new large database with some interesting data for this subject. In total, I spent 3 months in Odense, Denmark.

The main part of the thesis was written together with Chantal Gilde. However, we did divide some of the work in order to deliver an individual product. We both used the variables 'negative self-concept', 'social support', 'teacher support', and 'family support'. My thesis also included the variables 'gender' and 'connectedness with parents', which were not used in the thesis of Chantal Gilde. Instead of those variables, Chantal Gilde included the variables 'relationship with parents' and 'contact with parents'.

In the first place, I would like to thank Chantal Gilde for our good cooperation. I want to thank both my supervisors as well. I thank Prof. Dr. Rolf Kleber from Utrecht University and Prof. Ask Elklit from Syddansk Universität for their professional supervision and advises, and for making it possible for me to do my thesis abroad. Furthermore, I would also like to thank Prof. Ask Elklit and the Videnscenter for Psykotraumatologi in Odense for their warm welcome and hospitality. Additionally, I am grateful to The Danish National Centre for Social Research for collecting all data, and for letting us use the database. Finally, I would like to thank everybody who helped and supported me, in whatever way possible, in the process of my master thesis.

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Introduction

Child maltreatment

Child maltreatment is in the Western world a very common form of violence perpetrated by caregivers (Hahm, Lee, Ozonoff, & Van Wert, 2010). It is an important psychological issue that needs attention in order to minimize the negative consequences. According to the World Health Organization, 25-50% of globally all children report being physically abused. Furthermore, approximately 20% of women and 5-10% of men report being sexually abused as children. However, the so far reported prevalence rates of child maltreatment often differ. The WHO defines that child maltreatment, sometimes referred to as child abuse and neglect, includes all forms of physical and emotional ill-treatment, sexual abuse, neglect and exploitation that results in actual or potential harm to the child's health, development or dignity. When abuse and neglect occur to children under 18 years of age, it is called child maltreatment (WHO, 2011). In this study, the focus will be on the relationship between the specific types of child maltreatment and suicide, suicidal thoughts, and suicide attempts. The influence of potential relevant determinants on this relationship will be researched in order to conduct a complete view.

Consequences child maltreatment

Many negative outcomes have been found for child maltreatment in research studies. Child maltreatment implies one of the most adverse and stressful challenges that confronts children (Cicchetti, Rogosch, Sturge-Apple, & Toth, 2010). Literature has shown a relationship between being a victim of sexual abuse, neglect, physical, or emotional maltreatment, and post-traumatic stress disorder (PTSD) (Burns, Jackson, & Harding, 2010; Cantón-Cortés & Cantón, 2010). For this disorder, women show a higher prevalence rate than men (Ditlevsen & Elklit, 2010). PTSD consists of many symptoms, including anxiety, disturbances of memory, elevated arousal, avoidance and fear of horror. These symptoms persist for prolonged periods after an unusually distressing experience (Rachman, 2004). Scott, Smith, and Ellis (2010) found significant associations between prospectively ascertained child maltreatment and a number of mental disorders. The associations were strongest for post-traumatic stress disorder and obsessive-compulsive disorder. High levels of trauma-related symptoms were also consistently associated with a history of childhood sexual abuse (Aspelmeier, Elliott, & Smith, 2007).

Additionally, according to Burns et al. (2010), there is preliminary support for greater emotion regulation difficulties among emotionally abused women. They found that the relationship between childhood maltreatment (physical or emotional) and post-traumatic symptoms was partially explained by emotion regulation difficulties. This study indicated that emotional abuse is a stronger predictor of emotion dysregulation, when compared to sexual or physical abuse. Kim and Cicchetti (2010) found that more difficulties in emotion-regulation

and greater externalizing problems were reported by maltreated children – especially for the subtypes of neglect, physical, and/or sexual abuse, multiple subtypes, and earlier onset. For emotional maltreatment, the relation with emotion dysregulation was not significant.

Several other negative outcomes of child maltreatment are found. Hahm et al. (2010) have demonstrated that women making the transition from adolescence to young adulthood, are affected negatively and sustainably on many developmental outcomes by child maltreatment. They found that women who were maltreated in several ways are – when compared to women who experienced one type of maltreatment – more likely to report running away from home and to report Sexually Transmitted Disease diagnosis. Furthermore they were more likely to have had sex for money, and to have had sex before the age of 15.

Specific results have been found for the consequences of sexual abuse in some studies. Senn and Carey (2010) showed that childhood sexual abuse is uniquely associated with adult sexual risk behavior. Lower levels of attachment security in close-adult, parent-child and peer relations, were associated with a history of childhood sexual abuse (Aspelmeier et al., 2007).

In addition to all of these consequences, childhood maltreatment has often been linked to suicide, making it of special interest for this study. A theory that could explain the death wish in maltreated persons is the interpersonal-psychological theory. According to this theory, the two interpersonal states 'perceived burdensomeness' and 'thwarted belongingness' confluence. The simultaneous presence of these states, in combination with acquired capability for suicide, leads to a higher risk for suicide attempts (see figure 1).The state 'perceived burdensomeness' represents feeling like one's existence is a burden on friends, family members and/or society, and the state 'thwarted belongingness' refers to feeling alienated from friends, family, or other valued social circles (Ribeiro & Joiner, 2009). Van Orden, Witte, Cukrowicz, Braithwaite, Selby, and Joiner (2010) proposed in their article that there is an association between variables of social connectedness and suicide. When the fundamental human need, the need to belong, is unmet, one can become in the state of 'thwarted belongingness' and a desire for death can develop. For the state 'perceived burdensomeness', most support for an association with suicide was found for the

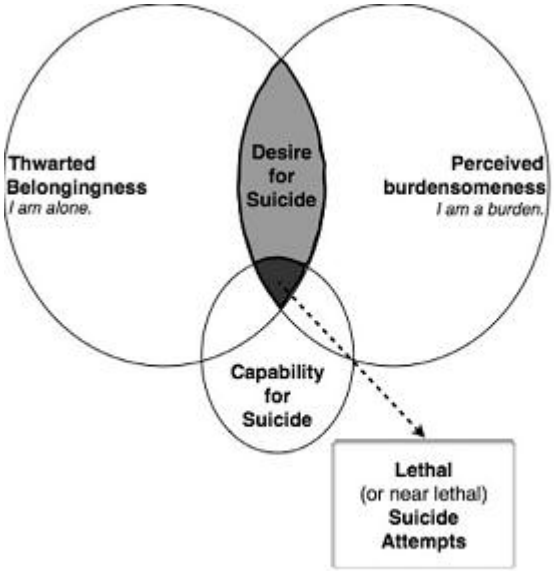

Figure 1. Assumptions of the interpersonal theory of suicide

negative life events family conflict, unemployment, and physical illness. Perceptions of burdensomeness for all significant others in one's life, in combination with some degree of self-hate regarding those perceptions, is equivalent to the severe level of perceptions of burdensomeness that is relevant to the theory (Van Orden, Witte, Cukrowicz, Braithwaite, Selby, & Joiner, 2010). According to the authors, childhood maltreatment is relevant for the development of both states. In this research, it is assumed that the theory is applicable to childhood maltreatment. This will be investigated, as well as whether or not childhood maltreatment is directly related to suicide. One of the research questions of the current research will be: 'Does childhood maltreatment increase the risk of suicidal thoughts and suicide attempts?'

Childhood maltreatment & suicide

According to Meadows and Kaslow (2002), the increased risk for many psychological difficulties resulting from child maltreatment, may precede the development of suicidal behaviors. In the large and representative research of Bruffaerts et al. (2010), in 21 Western (including the Netherlands) and non-Western countries, it was revealed that physical and sexual abuse were strongest related with suicidal risk behavior. However, this research did not include emotional maltreatment as a type of maltreatment. Brown, Cohen, Johnson, and Smailes (1999) and Dube, Anda, Felitti, Chapman, Williamson, and Giles (2001) found that adverse childhood experiences increased the risk of ever attempting suicide from 2- to 5 fold. The risk of ever attempting suicide and of attempted suicide increased dramatically according to the latter research, when the number of such experiences increased. Their analysis suggested that the abusive or traumatic childhood experiences attribute to approximately two thirds (67%) of suicide attempts. Another study found that a history of childhood maltreatment is likely to play a key role in the onset and recurrence of suicide attempts (Perroud et al., 2007). For the severity of suicidal behavior, only sexual abuse played a key role. Similar findings are reported by studies focusing solely on women by Hahm et al. (2010) and Sfoggia, Pacheco, and Grassi-Oliveira (2008). According to Hahm at al., women who were maltreated in several ways are – when compared to women who experienced one type of maltreatment – more likely to report suicide ideation and attempted suicide.

As mentioned above, a history of maltreatment has a significant association with suicidal ideation. Suicidal ideation seems to be already evident in children as young as 8 years old. Maltreated children approximately have a 2-fold risk to report suicidal ideation at this age. This increased risk is associated with the severity of physical abuse, and with the presence of multiple types of maltreatment (Thompson et al., 2005). Additionally, Cheng et al. (2009) found that suicidal ideation and attempts increase with age, and Brown et al. (1999) indicate that adolescence seems to be the most vulnerable period for suicide in

sexually abused youths.

Looking at the influence of specific types of maltreatment on the relation with suicide, Ryan, Kilmer, Cauce, Watanabe, and Hoyt (2000) found minor differences between three subtypes of maltreatment. They compared the types physical abuse only, sexual abuse only and both types of abuse, with no reported abuse. The combination of physical and sexual abuse showed highest risk of attempted suicide. Moreover, physical abuse only and sexual abuse only gave a higher risk of attempted suicide when compared to the 'no reported abuse' group. A study of Locke and Newcomb (2005) showed that emotional maltreatment and sexual abuse predict suicidality. In another study, the relationship between different kinds of maltreatment has been investigated as well. The research showed higher levels of suicide proneness for individuals that were neglected in their childhood, than those who reported physical abuse alone or sexual abuse alone (Arata, Langhinrichsen-Rohling, Bowers, & O' Brien, 2007). In the research of Brown et al. (1999), results showed that childhood neglect alone was presumably not responsible for suicidal behavior, since its effects could not be separated from those of other risk factors. Here, sexual abuse involved the greatest risk of suicide, independently of the contextual risks under which the abuse occurs. In the mentioned study, physical abuse alone contributed to repeated suicide attempts during adolescence as well.

In the current research, the relation between the four types of maltreatment (physical, sexual, emotional, and neglect) and suicidal thoughts and attempts will be examined. Because of the differences in sensitivity for contextual risks, this study will also focus on factors affecting the association between childhood maltreatment and suicide.

Risk factors of the relationship between childhood maltreatment and suicide

Research has shown that several factors affect the relationship. First, the risk factors will be discussed. In a sample of low-income African American women, Meadows and Kaslow (2002) found that hopelessness in adulthood partially mediates the relation between a childhood maltreatment history and adult suicide attempts. This could be explained by the suggestion of Schotte and Clum (1982) that poor interpersonal problem solving in conjunction with negative life stress might lead to feelings of hopelessness, which in turn results in the development of suicide ideation and intent. This in accordance with the previously mentioned interpersonal-psychological theory (Ribeiro & Joiner, 2009).

Additionally, Salzinger, Rosario, Feldman, and Ng-Mak (2007) discovered that combined childhood and adolescent internalizing problems (depression) mediate the effect of preadolescent abuse on suicidal attempts. Furthermore, they found that continued parental abusive behavior (physical) in adolescence is significantly associated with suicidal behavior. In this sample, internalizing problems in adolescence contributed to increased risk of suicidal behavior. Conversely, stressful life events did not have any significant influence on the risk of

suicidal behavior. However, according to Boxer (2010), parental divorce plays a role in the association. He has found an additive effect between parental divorce and child abuse for suicide attempts. Notably, further adjusting it for parental psychopathology caused the effect to be reduced.

Protective factors of the relationship between childhood maltreatment and suicide

Some protective factors have also been found for suicidality in previous research. Attachment security protects at least partially against negative outcomes of childhood sexual abuse (Aspelmeier et al., 2007). Infants who have secure relationships with their caregivers use them as a source of comfort and support to control feelings of distress when they arise. For these infants, the caregiver's presence signals safety and is an unequivocal source of comfort (Simpson & Rholes, 1998). According to Salzinger et al. (2007), parental attachment acts as a protective factor for the risk of suicidal behavior, whereas attachment to friends doesn't have any significant influence on the risk of suicidal behavior. Locke and Newcomb (2005) found that a good relationship with parents, problem-solving confidence and being law abiding act as protective factors. Moreover, Eisenberg, Ackard, and Resnick (2007) concluded that family connectedness has a strong protective association with suicidal ideation and attempts. Other significant protective factors for both male and female adolescents were teacher caring, other adult caring and school safety. In conclusion, family seems to play an important protective role. Therefore, family factors (e.g. family support, relationship with parents, contact with parents) will be closely examined in this research. Contact with parents has not yet been included in research on the topic. Because this factor is about specific behavior that doesn't concern feelings, it is included in this research, which makes the study unique.

Determinants of suicide

There are other factors that affect the risk of suicidal behavior, which are not yet related to childhood maltreatment. In order to conduct a complete as possible view on the subject, these factors should be considered as well. According to the interpersonal-psychological theory, the misperception that the self is so incompetent that one's existence is a burden on family members, friends, or other valued social circles, leads to the increased risk of the belief that one's death is worth more than one's life (Ribeiro & Joiner, 2009). A research of Kaslow et al. (2002), which focused on low-income abused African American women, shows that being hopeful, being high in self-efficacy, having the capacity to obtain resources, having adaptive coping skills and strong social support significantly reduce the risk for attempting suicide in this sample. In a Turkish study, self-esteem was a significant predictor of suicidal risk scores. Greater suicidal ideation and suicide potential showed a significant correlation with lower self-rated problem-solving skills (Eskin, Ertekin, Dereboy, & Demirkiran, 2007). These studies lead to the inclusion of the factor negative self-concept in

the current research on the relation between childhood maltreatment and suicide.

On the subject of the influence of gender on suicide, literature is not consistent. Eskin et al. (2007) found that females had a higher risk for suicide ideation, but not for suicide attempts. In contrast, Dube et al. (2001) and Fleming Merry, Robinson, Denny and Watson (2007) showed that women had an increased risk for suicide attempts. Because of these inconsistencies, gender will also be included in this research. Furthermore, family support seems to play an important protective role in suicidal risk behavior (Au, Lau, & Lee, 2009; Randell, Wang, Herting, & Eggert, 2006; Sharaf, Thompson, & Walsh, 2009). According to Compton, Thompson, and Kaslow (2005), lower reported levels of family adaptability, family cohesion, social embeddedness and social support increased the relative rate of suicide attempt. In another study, depressive symptoms, alcohol abuse, non-heterosexual orientation and exposure to suicide behavior by others were associated with an increased risk of suicide attempts (Fleming et al., 2007). This study also found that a caring home and a fair and safe school environment contributed to a lower risk for suicide attempts. Additionally, Dervic, Oquendo, Grunebaum, Ellis, Burke, and Mann (2004) showed in their research that religion was inversely related to suicidal ideation, though the effect was mediated by a greater moral objection to suicide which may have represented traditional religious beliefs. Thus, many factors influence the risk of suicide.

Aim of this study

This study will investigate whether childhood maltreatment alone is responsible for suicidal behavior, or whether the association between childhood maltreatment and suicidal thoughts and attempts is influenced by internal/external factors. The influence of gender, negative self-concept, support (social, teacher, family) and connectedness with parents will be investigated.

This research is unique in the fact that it makes use of a large sample, partially child protection cases, and by looking at some factors that have not yet been proven to influence the association between childhood maltreatment and suicide. The research questions are: '*Does childhood maltreatment influence the risk of suicidal thoughts and suicide attempts?', 'Is there a difference for the different types of maltreatment?'* and *'Which factors influence the relation between childhood maltreatment and suicide?'* First, the relationships between the types of childhood maltreatment and suicide, suicidal thoughts and suicide attempts will be researched. It is hypothesized that experiencing any of the types of childhood maltreatment would be associated with a higher risk of reporting suicide, suicidal thoughts and suicide attempts. Furthermore, the relations between all types of maltreatment and the factors 'gender', 'negative self-concept', 'social support', 'teacher support', 'family support' and 'connectedness with parents' will be investigated. Similarly, the relation between the suicide variables and the factors will be examined. Finally, the effects of the factors for the

relationship between maltreatment and suicide will be studied. It is expected that 'gender' and 'negative self-concept' increase the risk of suicidal behaviors. It is also assumed that 'social support', 'teacher support', 'family support' and 'connectedness with parents' act as protective factors of suicidal behaviors.

Methods

Design

The design used in this research is a between-subjects design. Questionnaires were used (see Appendix).

Participants

A total of 2980 interviews were achieved with a response rate of 63%. The most common reasons for not participating were refusal to take part in the study (21%), lack of contact (13%), and illness or disability (2%). To adjust for the oversampling of child protection cases the data have been weighted so that findings are representative of the total Danish population of young people aged 24 years.

The demographic characteristics of the total sample (weighted), the child protection cases, and the non child protection cases are summarized in Table 1. Fifty-two percent of the total sample (weighted) was male.

Table 1 *Demographic Characteristics of Non Child Protection Cases and Child Protection Cases.*

	Total Sample weighted *N* = 2980 (%)	Non child protection case *N* = 2128 (%)	Child protection case *N* = 852 (%)
Gender			
• Male	1555 (52.2)	1106 (52.0)	473 (55.5)
• Female	1425 (47.8)	1022 (48.0)	379 (44.5)
Living Accommodation			
• Home owner	837 (28.1)	608 (28.6)	176 (20.7)
• Rented accommodation	1949 (65.6)	1387 (65.3)	587 (69.3)
• Supported living	175 (5.9)	123 (5.8)	62 (7.3)
• Other	11 (0.4)	5 (0.2)	22 (2.6)
No. of Dependants >18			
• 0	2717 (91.3)	1954 (91.9)	695 (81.7)
• 1	197 (6.6)	132 (6.2)	110 (12.9)
• 2	52 (1.8)	33 (1.6)	41 (4.8)
• =>3	10 (0.3)	7 (0.3)	5 (0.6)
Education			
• No Higher education	507 (17.1)	324 (15.3)	372 (44.0)
• Higher/ vocational education student	1390 (46.9)	1024 (48.4)	209 (24.7)
• Completed higher/vocational education	1066 (36.0)	768 (36.3)	264 (31.2)
Employment			
• Employed	1611 (54.1)	1141 (53.6)	519 (61.2)
• Unemployed	152 (5.1)	87 (4.1)	173 (20.4)
• Student	1190 (40.0)	882 (41.5)	147 (17.3)
• Other	24 (0.8)	17 (0.8)	9 (1.1)
Marital Status			
• Married	184 (6.2)	128 (6.0)	74 (8.7)
• Cohabiting	1186 (39.8)	852 (40.0)	307 (36.1)
• Single	1610 (54.0)	1148 (53.9)	470 (55.2)

Note. All values are weighted.

Procedure

Data were collected by The Danish National Centre for Social Research in 2008 and 2009. The study used a stratified random probability sample of young people aged 24 years. The study was founded by the Danish Research Council. A sample of 4718 young adults with Danish citizenship was randomly selected by Statistics Denmark using the total birth cohort of all children born in 1984 (excluding persons who had refused to participate in national research or were imprisoned). Participation in the study was entirely voluntary and the study was approved by the Danish Data Protection Agency. To increase the number of participants who had experienced childhood abuse and neglect, children who had been in child protection where oversampled by stratifying the number of "child protection cases" versus "no child protection cases" (1/3:2/3). A child protection case was defined as a case where the council (according to the files of local social workers) had provided support for the child and the family or placement with a foster family due to concerns about the well-being and development of the child.

The data were collected using a structured interview, which was conducted as a telephone interview or as a residential interview according to the participants' choice. The average duration of the interview was 43 minutes. The response format was recoded, but with an option for respondents to add additional comments if necessary. The interview did not define abuse and neglect but asked respondents if they had experienced specific behaviors towards them. A letter sent prior to the data collection informed each participant about the nature of the research, the possibility of being interviewed at home, and the procedures securing confidentiality. Persons who did not respond to the letter, were contacted by telephone if possible, and then were contacted at their home address.

The interviewers were carefully trained by The Danish National Centre for Social Research prior to the data collection. The training included detailed oral information and standardized written instructions regarding the purpose and content of the study. Moreover, test trials were conducted to familiarize the interviewers with the questionnaire and the coding procedure. The study included several sensitive questions regarding sexual abuse and violence. Hence, participants who were interviewed in their home, answered these questions using computer-assisted personal interviewing, whereby respondents could enter their answers directly on to a laptop computer. This method has been validated in similar studies (e.g. May-Chahal & Cawson, 2005). Furthermore, all participants were offered a telephone number of an experienced psychologist at the end of the interview, in case they wanted any counseling help.

Physical Abuse. Retrospective reports on physical abuse from parents or guardians were obtained utilizing single-items that describe different experiences of serious violent treatment (see Table 2). The items asked whether respondents had experienced seven

different types of abuse and scores were rated on a two-point (yes/no) format.

Table 2 *Experience of physical abuse from parents / guardians by sex and child protection status*

	Total	Male	Female	Non Child protection case	Child protection case
Total (*N*)	2980	1579	1401	2128	852
Weighted (*N*)	2980	1555	1425	2794	186
Beaten with an object, such as a whip or coat hanger? (%)	2.7	3.2	2.1	2.1	11.5
Threatened with a weapon, such as a knife or a gun? (%)	0.4	0.4	0.5	0.3	2.5
Had objects thrown at you? (%)	2.7	3.2	2.2	2.1	12.1
Grabbed round the neck and chocked? (%)	0.5	0.3	0.6	0.3	2.5
Been left with burn or bite marks? (%)	0.2	0.1	0.3	0.1	1.9
Had injuries such as broken bones, stab wounds, brain haemorrhage, or burns which were treated by a doctor? (%)	0.3	0.2	0.4	0.2	2.3
Been hit, kicked or exposed to violence which has resulted in bruising, bleeding, or other physical injuries? (%)	1.6	1.6	1.6	1.1	9.6
Total (%)	5.2	6.1	4.1	4.2	19.8

Note. All percentage values are weighted; Total = Positive endorsement of at least one item; Categories were not mutually exclusive.

Sexual Abuse. Retrospective reports on sexual abuse from parents or guardians were obtained utilizing single-items that describe experiences of serious sexual abuse under the age of 13 (see Table 3). Only cases who confirmed that they had been exposed to sexual abuse were asked about the four types of abuse, and scores were rated on a two-point (yes/no) format.

Table 3 *Experiences of sexual behavior under the age of 13*

	Total	Male	Female	Non Child protection case	Child protection Case
Total (*N*)	2980	1579	1401	2128	852
Weighted (*N*)	2980	1555	1425	2794	186
Childhood Sexual Abuse (Y/N)	1.0	0.3	1.8	0.7	6.3
Experienced sexual touching or someone exposing their private parts /sex organs to you (%)	2.6	0.5	4.8	2.1	9.5
Experienced attempted intercourse (%)	2.6	0.4	5.0	2.2	9.2
Experienced forced / completed intercourse (%)	1.9	0.2	3.8	1.6	6.5
Experienced other types of sexual behaviour (%)	0.8	0.2	1.4	0.6	3.8

Note. All percentage values are weighted; Only those cases answering yes to sexual abuse were asked about sexual experiences; Categories were not mutually exclusive; A small minority of cases indicated additional sexual assaults occurring between the ages of 13 and 24 (*n* = 11).

Emotional Maltreatment. Retrospective reports on emotional maltreatment from parents or guardians were obtained utilizing single-items that describe different experiences of emotional abuse (see Table 4). The items asked whether respondents had experienced six types of emotional maltreatment and scores were rated on a two-point (yes/no) format.

Table 4 *Experience of emotional maltreatment from parents / guardians by sex and child protection status*

	Total	Male	Female	Non Child protection case	Child protection Case
Total (*N*)	2980	1579	1401	2128	852
Weighted (*N*)	2980	1555	1425	2794	186
Addressed in humiliating (e.g. being called lazy, stupid, or useless manner by parents/guardians	13.2	12.7	13.8	12.1	31.0
Humiliated or degraded in public by parents/guardians	5.4	4.5	6.5	4.7	16.7
Threatened about getting thrown out of the home by parents/guardians	13.7	15.4	11.7	12.3	33.8
Threatened about violent punishment by parents/guardians	3.1	3.2	2.9	2.5	12.2
Parents/guardians have through their behaviour shown that you were unwanted, unloved, and worthless	4.9	4.1	5.8	3.9	20.4
Parents/guardians have critized or bullied you constantly	2.9	2.0	3.9	2.3	12.6
Total (%)	5.2	4.2	6.1	4.2	19.6

Note. All percentage values are weighted; Total = Positive endorsement of at least three items

Physical Neglect. Retrospective reports on neglect from parents or guardians were obtained utilizing seven single-items that describe the different experiences of physical neglect (aged<12; see Table 5). The items asked whether respondents had experienced seven types of physical neglect and scores were rated on a two-point (yes/no) format.

Table 5 *Experience of physical neglect from parents / guardians by sex and child protection status*

	Total	Male	Female	Non Child protection case	Child protection Case
Total (*N*)	2980	1579	1401	2128	852
Weighted (*N*)	2980	1555	1425	2794	186
Aged <12 you were expected to wash own clothes	2.9	1.8	4.2	2.4	10.9
Aged <12 you had to attend school in dirty clothes because there were no clean ones available	1.5	1.6	1.4	1.1	8.1
Aged <12 you were occasionally starved due to lack of food or no one available to prepare meals	1.2	1.0	1.4	0.7	8.9
Aged <12 you were responsible for own care when sick	6.0	6.2	5.7	5.5	13.3
Aged <12 had to call a doctor for yourself when ill	0.6	0.5	0.6	0.5	2.1
Often had to care for yourself due to parental alcohol or drug problems	3.9	2.9	4.9	2.9	19.3
Were often abandoned / deserted in the home for several days	1.3	1.4	1.1	0.9	6.9
Total (%)	7.8	6.4	9.4	6.5	27.0

Note. All percentage values are weighted

Negative self-concept was measured utilizing fifteen single-items that describe different aspects of self-concept.

Support variables were measured utilizing ten single-items that describe different types of support (social, teacher, and family).

Parental connectedness was measured utilizing nine items that describe different aspects of parental connectedness (relationship with parents and contact with parents).

Recoding of the variables

For the ANOVA, the variables were recoded so that the answers ‘don’t know’, ‘not known’ and ‘irrelevant’ were taken out of the analyses. Some items needed to be further recoded into the right factor. The factor ‘self-concept’ was developed by further recoding: The positive self-concept items were recoded into negative self-concept items, and all items were then summarized. The item of support was divided into social support, teacher support and family support, by summarizing the sub-items associated with these support groups. The

factor ‘present contact with parents’ was made by summarizing the items ‘present contact with mother’ and ‘present contact with father’. Finally, the factor ‘connectedness with parents’ was created by summarizing the variables ‘relationship with parents’ and ‘present contact with parents’.

For the logistic regression analyses, the factors were recoded into a dummy, with the rule ‘any score equal to or higher than 1 = 1’. These recoded factors were then put into the logistic regression analysis.

Analysis

SPSS 18.0 was used to analyze the data. First, chi-square analyses were used for determining the significance of the relation between the types of maltreatment and suicidal thoughts and suicide attempts. Next, more chi-square analyses were done to find out if there was a significant relation between the types of maltreatment and the factors ‘gender’, ‘negative self-concept’, ‘social support’, ‘teacher support’, ‘family support’, ‘connectedness with parents’. Furthermore, these factors were put into a chi-square analysis with suicide, suicide attempts and suicidal thoughts. A correlation analysis was used to look at the consensus between the support factors (‘social support’; ‘teacher support’; ‘family support’; ‘connectedness with parents’). ANOVA was performed in order to determine whether the scores significantly vary across the factors. Moreover, logistic regression analysis was used to determine the influence of the factors on the relationships between the types of maltreatment and suicide, suicide attempts, and suicidal thoughts.

Results

The percentage of maltreated children reporting suicidal thoughts and/or attempts is 19.7%, and of non-maltreated children is 18.8%. Table 6 shows the percentages of suicidal thoughts, suicide attempts and suicide (total) for the types of maltreatment. Remarkably, the percentages of suicide (total) for sexual abuse are the lowest and for emotional maltreatment the highest. Furthermore, it is notable that the percentage of attempts for sexual abuse is much lower than for the other types of maltreatment.

Table 6 *Percentages of Suicidal thoughts, Suicide Attempts and Suicide (Total) in Maltreated Children*

	N	Suicidal thoughts	Suicide Attempts	Suicide (total)
Child Maltreatment (All Types)	600	12.7%	7.0%	19.7%
Physical Abuse	253	11.5%	7.5%	19.0%
Sexual Abuse	116	8.6%	1.7%	10.3%
Emotional Maltreatment	257	16.0%	7.8%	23.7%
Physical Neglect	369	13.0%	6.5%	19.5%
Non Maltreatment	2279	13.7%	5.2%	18.8%

First, a correlation analysis was done to look at the consensus between the factors of support ('social support'; 'teacher support'; 'family support'; 'connectedness with parents'). Social support was the least correlated factor, solely teacher support was positively related with social support. All other support variables were positively correlated with each other. Though, a negative relationship existed for teacher support with family support and connectedness with parents. The results are shown in Table 7.

Table 7 *Correlations factors of support*

	Social Support	Teacher Support	Family support	Connectedness with Parents
Social Support	1	.242**	-.028	.001
Teacher Support	.242**	1	-.129**	-.063**
Family support	-.028	-.129**	1	.248**
Connectedness with Parents	.001	-.063**	.248**	1

****. Correlation is significant at the 0.01 level (2-tailed).**

***. Correlation is significant at the 0.05 level (2-tailed).**

Chi-square Analyses

Chi-square analyses were used to determine which factors are significantly associated with which type of maltreatment. The analysis showed that maltreatment is positively related to 'teacher support'*, and negatively to 'family support'*. Sexual abuse is negatively related to suicide (total)** and suicide attempts*. Furthermore, chi-square analysis on emotional maltreatment showed that it is positively related to 'suicide total'*, and negatively to family support*. Physical neglect showed a positive relation with 'teacher support'* and physical abuse was not related with any of the variables. All chi-square values were higher than 3,3.

Moreover, suicide (total) was positively associated with gender***, negative self-concept*** and teacher support***. Suicide (total) had a negative relationship with family support*** and connectedness with parents***. The chi-square values were all higher than 11,7.

Suicidal thoughts were positively related to the same variables: gender**, negative self-concept*** and teacher support*. The suicide variable had a negative association with family support*** and connectedness with parents***. The chi-square values were higher than 5.9.

*****. Correlation is significant at the 0.001 level (2-tailed).**

****. Correlation is significant at the 0.01 level (2-tailed).**

***. Correlation is significant at the 0.05 level (2-tailed).**

The variable suicide attempts however, was associated with all the variables. Gender***, negative self-concept*** and teacher support* had a positive relationship with suicide attempts. Social support**, family support*** and connectedness with parents*** were negatively associated with suicide attempts. All chi-square values were higher than 5.10.

ANOVA

The ANOVA analyses showed no significant results. Thus, the means of suicide scores for the different types of maltreatment did not differ significantly from each other. Therefore, logistic regression analyses were done.

Logistic Regression

Child Maltreatment

Logistic regression analysis showed which factors influence the relation between maltreatment and suicidal thoughts, suicide attempts and suicide (total) (see Table 8). It revealed that 'negative self-concept', 'social support', 'teacher support' and 'connectedness with parents' reliably predict suicide (total) in persons who have been maltreated in their childhood. The odds ratio of child maltreatment for suicide (total) was highest in 'negative self-concept' (OR=4.76) and more modest in 'teacher support' (OR=2.02). Furthermore, the risk of suicide (total) is increased considerably by a lack of 'connectedness with parents' (OR=0.10). However, 'social support' decreases the risk of suicide (total) (OR=0.41). 'Social support' is also a protective factor for suicide attempts in maltreated adults (OR=0.40). Additionally, 'connectedness with parents' protects against suicide attempts as well (OR=0.17). A risk factor for attempts is 'teacher support' (OR=2.34). The score on 'suicidal thoughts' was increased nearly 7-fold by a 'negative self-concept'. Again, 'social support' (OR=0.53) and 'connectedness with parents' (OR=0.22) act as protectors of suicidal thoughts.

Physical Abuse

The regression analysis (see Table 9) showed that 'negative self-concept' (OR=4.98) notably increases the risk of suicide (total). 'Connectedness with parents' however, protected against this risk (OR=0.14), as well as against the risk of suicide attempts (OR=0.16). For suicidal thoughts, the odds ratio was high for 'negative self-concept' (OR=7.29).

Sexual Abuse

For the results of the regression analyses on sexual abuse, see Table 10. In persons who have been sexually abused in their childhood, the risk of suicide is increased 17-fold by 'negative self-concept'. 'Connectedness with parents' again protected against suicide (total) (OR=0.04). For suicidal thoughts, 'negative self-concept' attributes to the amount of reports (OR=9.77). 'Family support' acts as a protector in this case (OR=0.09). For suicide attempts however, there were no significant predictors in this sample.

Table 8 *Logistic Regression Analyses of Child Maltreatment*

	Suicidal Thoughts						Suicide Attempts						Suicide (Total)					
	B	S.E.	df	OR	95% C.I.	Sig.	B	S.E.	df	OR	95% C.I.	Sig.	B	S.E.	df	OR	95% C.I.	Sig.
Gender	0,36	0,28	1,00	1,43	0,83-2,49	0,20	0,15	0,37	1,00	1,16	0,56-2,40	0,69	0,30	0,25	1,00	1,35	0,83-2,19	0,22
Neg. Self-concept	1,89	0,45	1,00	6,64	2,78-15,91	0,00	0,60	0,43	1,00	1,81	0,78-4,23	0,17	1,56	0,33	1,00	4,76	2,49-9,09	0,00
Social Support	-0,63	0,30	1,00	0,53	0,30-0,95	0,03	-0,92	0,42	1,00	0,40	0,18-0,91	0,03	-0,90	0,27	1,00	0,41	0,24-0,69	0,00
Teacher Support	0,38	0,31	1,00	1,47	0,80-2,69	2,10	0,85	0,39	1,00	2,34	1,09-5,03	0,03	0,71	0,27	1,00	2,02	1,19-3,44	0,01
Family Support	-0,29	0,55	1,00	0,75	0,25-2,21	0,60	-1,05	0,60	1,00	0,35	0,11-1,15	0,08	-0,97	0,51	1,00	0,38	0,14-1,03	0,06
Conn. Parents	-1,53	0,45	1,00	0,22	0,09-0,52	0,00	-1,75	0,49	1,00	0,17	0,07-0,46	0,00	-2,33	0,45	1,00	0,10	0,04-0,23	0,00

Table 9 *Logistic Regression Analyses of Physical Abuse*

	Suicidal Thoughts						Suicide Attempts						Suicide (Total)					
	B	S.E.	df	OR	95% C.I.	Sig.	B	S.E.	df	OR	95% C.I.	Sig.	B	S.E.	df	OR	95% C.I.	Sig.
Gender	-0,16	0,45	1,00	0,86	0,36-2,05	0,73	.477	0,57	1,00	1,61	0,53-4,89	0,40	0,06	0,38	1,00	1,06	0,50-2,25	0,89
Neg. Self-concept	1,99	0,76	1,00	7,29	1,66-32,12	0,01	0,70	0,68	1,00	2,01	0,53-7,66	0,31	1,61	0,52	1,00	4,98	1,79-13,85	0,00
Social Support	-0,35	0,48	1,00	0,70	0,28-1,78	0,46	-0,81	0,66	1,00	0,45	0,12-1,62	0,22	-0,60	0,42	1,00	0,55	0,24-1,24	0,15
Teacher Support	0,42	0,50	1,00	1,52	0,57-4.07	0,41	1,01	0,61	1,00	2,75	0,83-9,12	0,10	0,82	0,43	1,00	2,26	0,98-5,21	0,06
Family Support	-0,20	0,93	1,00	0,82	0,13-5,08	0,83	-1,27	0,90	1,00	0,28	0,05-1,64	0,16	-1,14	0,80	1,00	0,32	0,07-1,53	0,15
Conn. Parents	-0,95	0,78	1,00	0,39	0,09-1,78	0,22	-1,81	0,76	1,00	0,16	0,04-0,72	0,02	-2,00	0,72	1,00	0,14	0,03-0,56	0,01

Table 10 *Logistic Regression Analyses of Sexual Abuse*

	Suicidal Thoughts						Suicide Attempts						Suicide (Total)					
	B	S.E.	df	OR	95% C.I.	Sig.	B	S.E.	df	OR	95% C.I.	Sig.	B	S.E.	df	OR	95% C.I.	Sig.
Gender	-0,29	0,72	1,00	0,75	0,18-3,11	0,69	16,69	#####	1,00		0,00	1,00	-0,22	0,72	1,00	0,80	0,20-3,27	0,76
Neg. Self-concept	2,28	1,15	1,00	9,77	1,03-92,94	0,05	0,10	#####	1,00	1,11	0,00	1,00	2,84	1,36	1,00	17,03	1,19-244,63	0,04
Social Support	-0,35	0,78	1,00	0,71	0,15-3,24	0,65	-0,07	#####	1,00	0,93	0,00	1,00	-0,27	0,76	1,00	0,76	0,17-3,38	0,72
Teacher Support	0,03	0,88	1,00	1,03	0,18-5,80	0,97	-0,16		1,00	0,86	0,00	1,00	-0,28	0,92	1,00	0,75	0,12-4,61	0,76
Family Support	-2,40	1,13	1,00	0,09	0,01-0,84	0,03	35,60		1,00		0,00	1,00	-1,90	1,14	1,00	0,15	0,02-1,39	0,09
Conn. Parents	-0,76	1,28	1,00	0,47	0,04-5,73	0,55	-36,87	#####	1,00	0,00	0,00	1,00	-3,26	1,38	1,00	0,04	0,00-0,58	0,02

Emotional Maltreatment

A following regression analysis (see table 11) showed that ‘gender’ (OR=2.32) and ‘negative self-concept’ (OR=4.48) increase the risk of suicide (total) in emotionally maltreated persons. ‘Social support’ (OR=0.40) and ‘connectedness with parents’ (OR=0.07) are protectors of suicide (total) in this sample. The risk of suicide attempts is also reduced by ‘social support’ (OR=0.22) and ‘connectedness with parents’ (OR=0.18). Additionally, ‘family support’ (OR=0.13), was another protector of suicide attempts. The number of reports of suicidal thoughts increased nearly 5-fold by ‘negative self-concept’ (OR=4.77). Suicidal thoughts are reduced in this sample by ‘connectedness with parents’ (OR=0.25).

Physical Neglect

In persons who have been physically neglected in their childhood, ‘negative self-concept’ (OR=5.04) and ‘teacher support’ (OR=2.47) attribute to the risk of suicide (total) (see table 12). Furthermore, the analysis revealed that ‘connectedness with parents’ (OR=0.10) decreases the risk of suicide. The scores on suicide attempts are increased by ‘teacher support’ (OR=2.81) and reduced by ‘connectedness with parents’ (OR=0.16). Furthermore, a ‘negative self-concept’ increases the risk of suicidal thoughts (OR=4.35), and ‘connectedness with parents’ protects against the risk in this sample (OR=0.20).

Table 11 *Logistic Regression Analyses of Emotional Maltreatment*

	Suicidal Thoughts						Suicide Attempts						Suicide (Total)					
	B	S.E.	df	OR	95% C.I.	Sig.	B	S.E.	df	OR	95% C.I.	Sig.	B	S.E.	df	OR	95% C.I.	Sig.
Gender	0,75	0,42	1,00	2,12	0,93-4,82	0,07	0,64	0,61	1,00	1,90	0,58-6,23	0,29	0,84	0,38	1,00	2,32	1,09-4,93	0,03
Neg. Self-concept	1,56	0,57	1,00	4,77	1,58-14,45	0,01	0,73	0,70	1,00	2,08	0,53-8,15	0,29	1,50	0,47	1,00	4,48	1,78-11,29	0,00
Social Support	-0,39	0,43	1,00	0,68	0,29-1,56	0,36	-1,52	0,74	1,00	0,22	0,05-0,92	0,04	-0,91	0,41	1,00	0,40	0,18-0,89	0,03
Teacher Support	0,29	0,49	1,00	1,33	0,51-3,49	0,56	0,85	0,63	1,00	2,33	0,68-8,03	0,18	0,68	0,45	1,00	1,98	0,83-4,74	0,13
Family Support	0,70	0,88	1,00	2,01	0,36-11,23	0,43	-2,08	0,85	1,00	0,13	0,02-0,66	0,01	-0,76	0,73	1,00	0,47	0,11-1,97	0,30
Conn. Parents	-1,41	0,70	1,00	0,25	0,06-0,96	0,04	-1,72	0,73	1,00	0,18	0,04-0,74	0,02	-2,67	0,86	1,00	0,07	0,01-0,37	0,00

Table 12 *Logistic Regression Analyses of Physical Neglect*

	Suicidal Thoughts						Suicide Attempts						Suicide (Total)					
	B	S.E.	df	OR	95% C.I.	Sig.	B	S.E.	df	OR	95% C.I.	Sig.	B	S.E.	df	OR	95% C.I.	Sig.
Gender	0,38	0,37	1,00	1,47	0,71-3,04	0,30	0,39	0,50	1,00	1,47	0,55-3,92	0,44	0,44	0,33	1,00	1,55	0,82-2,92	0,18
Neg. Self-concept	1,47	0,51	1,00	4,35	1,60-11,84	0,00	1,25	0,66	1,00	3,50	0,96-12,75	0,06	1,62	0,44	1,00	5,04	2,14-11,89	0,00
Social Support	0,02	0,37	1,00	1,02	0,50-2,09	0,95	-0,76	0,53	1,00	0,47	0,17-1,31	0,15	-0,32	0,33	1,00	0,73	0,39-1,38	0,33
Teacher Support	0,58	0,39	1,00	1,78	0,83-3,80	0,14	1,03	0,50	1,00	2,81	1,05-7,51	0,04	0,90	0,34	1,00	2,47	1,27-4,81	0,01
Family Support	-0,10	0,85	1,00	0,91	0,17-4,78	0,91	0,18	1,15	1,00	1,20	0,13-11,40	0,88	0,11	0,78	1,00	1,12	0,24-5,17	0,88
Conn. Parents	-1,60	0,54	1,00	0,20	0,07-0,58	0,00	-1,85	0,63	1,00	0,16	0,05-0,54	0,00	-2,27	0,53	1,00	0,10	0,04-0,29	0,00

Discussion

The relation between childhood maltreatment and suicide has been investigated. The focus was on this relationship and the influence of relevant determinants. In this research, child maltreatment (all types), physical abuse, sexual abuse, emotional maltreatment and physical neglect (*N*=2879) have been compared with each other on the subject of suicidal thoughts, suicide attempts and both (suicide total). The factors that were included in this study are 'gender', 'negative self-concept', 'social support', 'teacher support', 'family support' and 'connectedness with parents'. It was expected that 'gender' (being female) and a 'negative self-concept' increase the risk of suicide. It was also assumed that 'social support', 'teacher support', 'family support' and 'connectedness with parents' act as protective factors of suicide.

The first two research questions were: '*Does childhood maltreatment influence the risk of suicidal thoughts and suicide attempts?'* and *'Is there a difference for the different types of maltreatment?'.* Chi-square analyses showed that maltreatment (all types) appeared not to be related to any of the suicide aspects. Thus, the first research question can be answered with no. This is in contrast with much of the literature (Brown et al., 1999; Dube et al., 2001; Hahm et al., 2010; Meadows & Kaslow, 2002; Perroud et al., 2007; Sfoggia et al., 2008; Thompson et al., 2005). Furthermore, the assumption that has been made in this study that the interpersonal-psychological theory (Ribeiro & Joiner, 2009) can explain the death wish in maltreated persons, cannot be confirmed because of these results. This indicates that, in general, the theory might not be applicable to childhood maltreatment. Thus, childhood maltreatment is not the equivalent of the simultaneous presence of the two states and capability for suicide.

For the second research question, it was investigated whether or not the several types of maltreatment differed in suicide outcome. The chi-square analyses revealed that physical abuse and physical neglect were not associated with the suicide factors. Emotional maltreatment did have a positive relation with suicide (total). Unexpectedly, sexual abuse was negatively related to suicide attempts and suicide (total), which means that sexual abuse protects against suicidal risk behavior. This protective relation is in contrast with the studies of Bruffaerts et al. (2010) and Perroud et al. (2007), and difficult to explain. Perhaps sexual abuse causes more distress than the other maltreatment types, and therefore the victims of this type of maltreatment receive earlier and more often psychological help after the abuse has taken place. In conclusion, the results for the second research question lead to the conclusion that there is a difference in the reports of suicidal thoughts and attempts for the four types of maltreatment. This seems to confirm the idea that the items were too unconnected to represent one joint factor. It indicates that in research, maltreatment should

also be divided into the different types of maltreatment to obtain a more complete view on the subject.

Finally, the research question '*Which factors influence the relation between childhood maltreatment and suicide?'* was proposed. In order to answer this question, a correlation analysis and a logistic regression analysis were done. First, the correlation analysis was executed for the support variables in order to look at the cohesion between these variables. It revealed that social support was the least correlated factor, which was only positively related with teacher support. However, the other support variables were almost all positively correlated with each other. Peculiarly, teacher support was negatively correlated with family support and connectedness with parents. It indicates that maltreated persons who have received support from a teacher, received less support from their family and were less connected with their parents. In conclusion, maltreated persons received either support from their family and/or parents, or they received support from their teacher(s). Furthermore, the correlation analyses suggest that the support variables do not represent one common factor, which implicates that the results of the regression analyses won't be similar for these variables.

Gender

Because of the inconsistency in the literature on the subject of gender, it was also examined in this study. The chi-square analyses revealed that gender was significantly related to all the suicide variables. That is, females had a higher risk for suicidal thoughts and attempts. The result for suicidal thoughts is in concordance with the research of Eskin et al. (2007). The logistic regression analyses showed that there was no influence of gender on the relationship between maltreatment and suicide. This leads to the conclusion that there is no difference between maltreated males and maltreated females in suicidal symptoms. This is in line with the literature (Dube et al., 2001; Thompson et al., 2005), but in contrast with the chi-square results. Thus, in general, females have an increased risk for suicidal behavior, but maltreated females don't have higher scores of suicidal risk behavior than maltreated men. This might be explained by the lack of significance in the chi-square results of the maltreatment types with the suicide variables. Gender was only of significant influence in the emotional maltreatment condition. That is, emotionally maltreated women had a 2-fold higher risk of reporting suicide (total). Therefore, the hypothesis concerning gender can be accepted for the combined suicide factor in emotional maltreatment, which can be explained by the significant chi-squares of gender and emotional maltreatment with suicide (total). Thus, women encounter more difficulties after being emotionally maltreated than men. This might be explained by the higher PTSD prevalence rates in women (Ditlevsen & Elklit, 2010). In conclusion, women who have been emotionally maltreated might need more support than men.

Negative Self-concept

In the current research, the factor ‘negative self-concept’ was one of the most important factors in the relation between maltreatment and suicide. A high score on ‘negative self-concept’ did not lead to a higher score on suicide attempts, but did lead to higher scores on suicidal thoughts and suicide (total) in all types of maltreatment (see figure 2). Given the high OR values in every type of maltreatment, ‘negative self-concept’ has a considerably high impact. That is, the hypothesis on negative self-concept can fully be accepted for suicidal thoughts and for suicide (total) in all the types of maltreatment. This indicates that the misinterpretation that the self is incompetent, leads to the increased risk of suicide ideation in maltreated persons. It is in line with the study of Eskin et al. (2007). According to the interpersonal theory, it was assumed that the risk of suicide attempts would be increased in this context (Ribeiro & Joiner, 2009). However, the results strikingly show that not suicide attempts but suicide ideation is increased by a negative self-concept in maltreated persons. Since the chi-squares showed that negative self-concept is directly related to suicidal thoughts as well as suicide attempts, the result indicates that childhood maltreatment weakens the relationship between negative self-concept and suicide attempts. This indicates that the theory might need to be adjusted in the context of childhood maltreatment. In addition, the results for sexual abuse are remarkable, because it is in contrast with the results of the chi-square analyses. Persons who have been sexually abused have a lower risk for suicidal risk behavior, but sexually abused persons with a negative self-concept have a higher risk for suicidal risk behavior. The contradiction in the results is difficult to elucidate. Perhaps it could be explained by the nature of negative self-concept. Persons with a negative self-concept have negative thoughts about themselves. The transition from negative thoughts about oneself to suicidal thoughts seems smaller for maltreated persons than the transition to suicide attempts. Therefore, more research is needed to examine the relationships between a negative self-concept, suicidal thoughts, and attempts in persons who have experienced any form of childhood maltreatment.

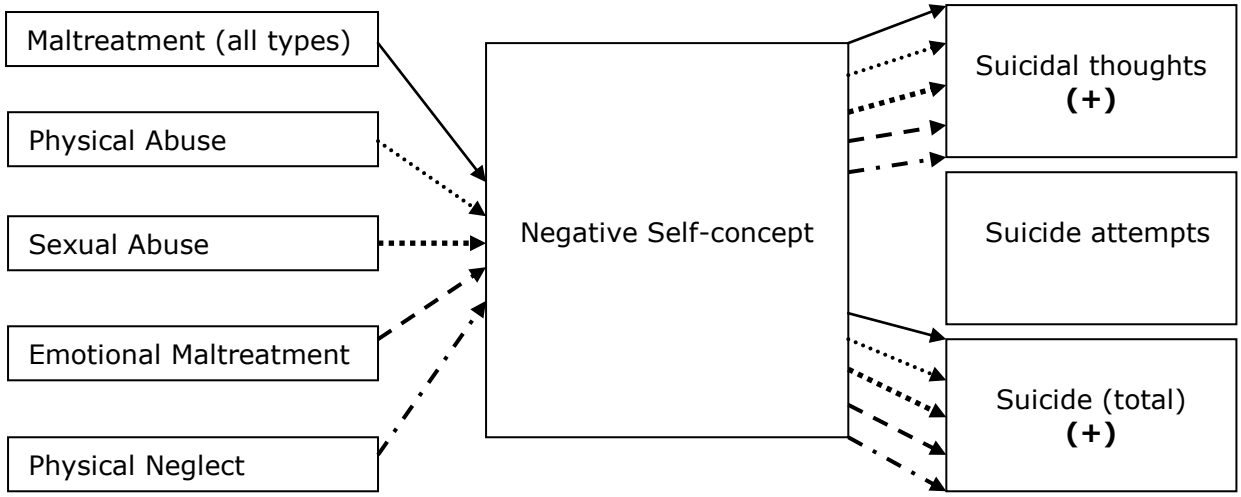

Figure 2. Overview of the results of the logistic regression analyses for 'negative self-concept'
Note. **(+)** Means that the score of this suicide variable is increased.

Social support

Kaslow et al. (2002) found that social support (from family and friends) significantly protects against attempting suicide in low-income African American women. In the chi-square of the current research as well, social support was significantly related to suicide attempts. However, it was not related to suicidal thoughts, suicide (total) and any of the maltreatment types. The logistic regression analyses showed that social support is a protector of suicide in the combined childhood maltreatment condition (see figure 3). That is, the hypothesis on social support can fully be accepted for all the suicide variables in the combined maltreatment condition. It is in accordance with the assumption that the interpersonal-psychological theory (Ribeiro & Joiner, 2009) can be adopted in the association between child maltreatment and suicide. Furthermore, social support had a significant protective influence on suicide attempts and suicide (total) in the emotional maltreatment condition. The herewith connected hypotheses can also be accepted. This indicates that persons who have been emotionally maltreated might benefit more from improving their social support networks than persons who have experienced other types of maltreatment.

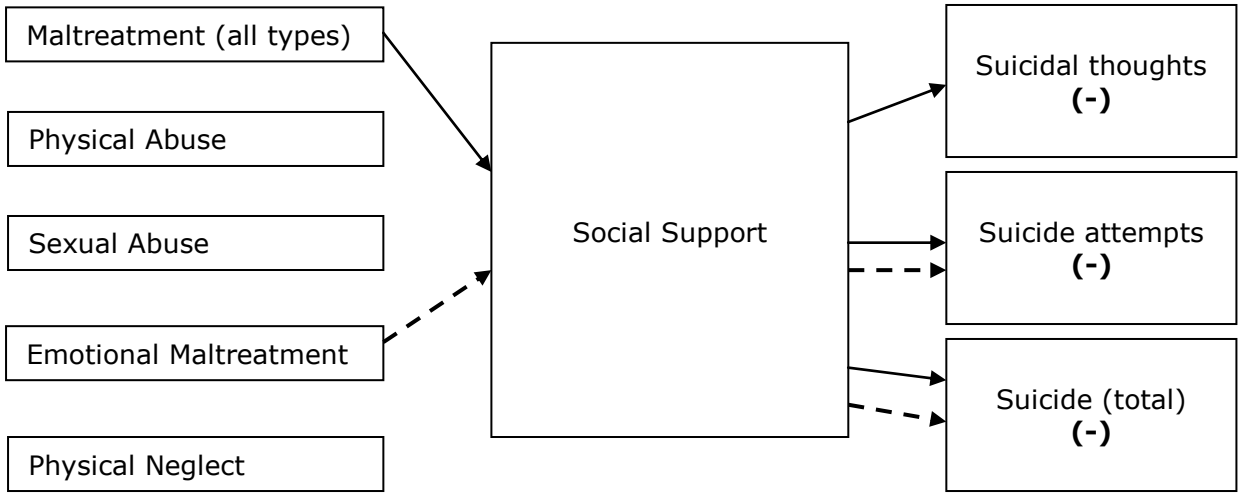

Figure 3. Overview of the results of the logistic regression analyses for 'social support'
Note. **(-)** Means that the score of this suicide variable is decreased.

Teacher support

The factor 'teacher support' gave some unexpected results; all hypotheses of teacher support must be rejected. It was expected that teacher support is a protective factor of suicide. This assumption was based on the studies of Eisenberg et al. (2007) and Fleming et al. (2007). These researches were limitedly applicable to the current study, because the first one focused solely on students who were sexually abused, and the second study did not include childhood maltreatment at all. The logistic regression showed that participants who received more teacher support, scored higher on 'suicide attempts' and 'suicide total' in the conditions of maltreatment (all types) and physical neglect (see figure 4). That is, teacher support was a risk factor of suicide in these conditions. The fact that teacher support was a risk factor for suicidal behavior, could be explained by the assumption that the participants only received teacher support when they were in negative circumstances. This assumption is supported by the results of the chi-square analyses. They showed that maltreated persons who have received support from teachers, received less support from their family and were less connected with their parents. Moreover, another indication is that teacher support did not help the child sufficiently. The questionnaire in this research did not ask about the provided amount of teacher support and the duration of the provided support. Therefore, more research is needed to make a grounded statement about the quality of teacher support in Denmark and whether or not it needs more investment.

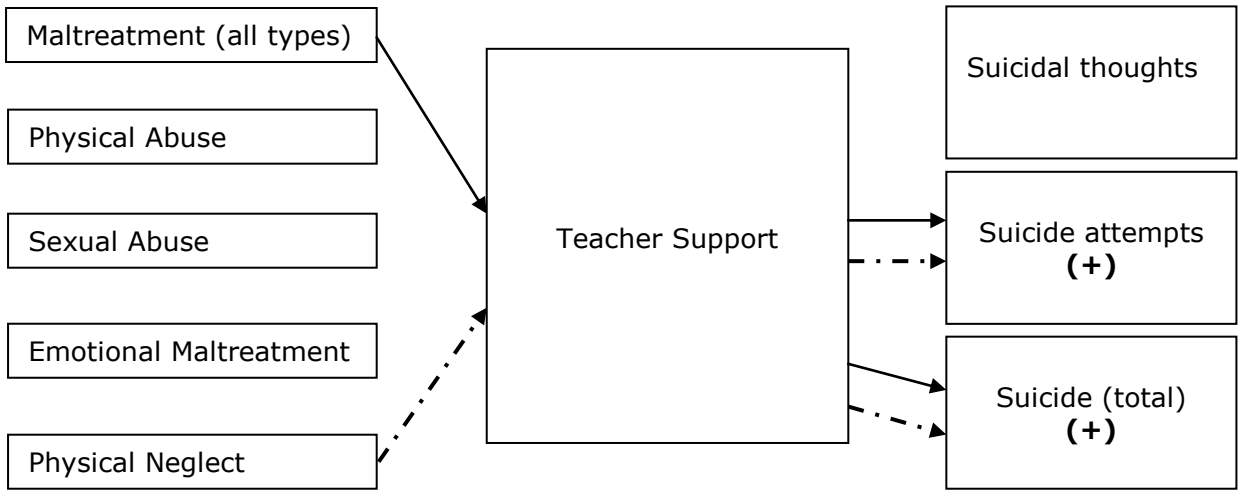

Figure 4. Overview of the results of the logistic regression analyses for 'teacher support'
Note: **(+)** Means that the score of this suicide variable is increased

Family support

Literature showed that family support is a protective factor of suicidal behaviors (Au et al., 2009; Randell et al., 2006; Sharaf et al., 2009). In this comprehensive research, this relation was investigated in combination with childhood maltreatment (see figure 5). Participants who have been emotionally maltreated and received family support, had lower scores on the variable suicide attempts. This leads to the acceptation of the hypothesis for suicide attempts in this condition. The scores did not differ significantly for suicidal thoughts and suicide (total). In the sexual abuse condition, family support was a protective factor of this suicide variable, which leads to the acceptance of the hypothesis of suicidal thoughts. However, the other hypotheses of family support must be rejected, because of a lack of significance. These results were unexpected and difficult to elucidate. The results might be more plausible if the item would also ask about the amount of received family support. More research is needed on the subject of childhood maltreatment, suicidal behavior, and family support to give a clear explanation of this outcome.

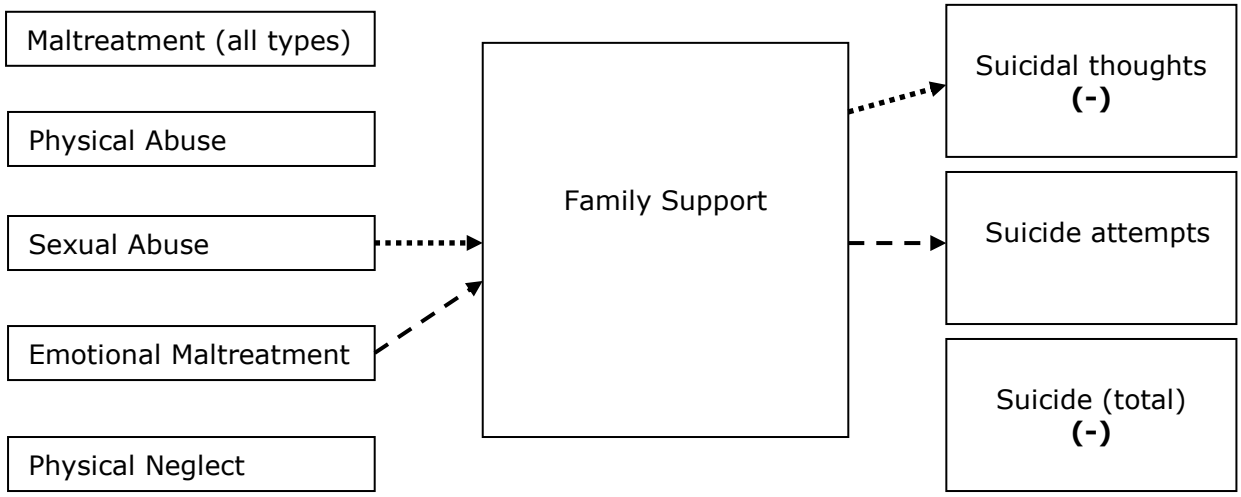

Figure 5. Overview of the results of the logistic regression analyses for 'family support'
Note: **(-)** Means that the score of this suicide variable is decreased

Connectedness with parents

'Connectedness with parents' played an important protective role in the relations between the maltreatment types and the risk of suicide (see figure 6). The hypotheses of all suicide variables can be accepted for maltreatment (all types), emotional maltreatment, and physical neglect. Literature confirms these findings (Eisenberg et al., 2007; Locke & Newcomb, 2005; Salzinger et al., 2007). Moreover, the assumption that the interpersonal-psychological theory (Ribeiro & Joiner, 2009) can be applicable on the relationship between childhood maltreatment and suicide is also confirmed by these results. The findings indicate that parents play an important role in protecting against suicidal behavior, implying that suicide prevention programs should also focus on the parents.

In this research, the factor 'connectedness with parents' was made up of the variables 'relationship with parents' and 'present contact with parents'. Parental attachment was already found to be important in the articles of Aspelmeier et al. (2007) and Salzinger et al. (2007). This is in line with the results of the maltreatment (all types), emotional maltreatment, and physical neglect conditions. In this study though, the hypotheses of 'connectedness with parents' cannot be accepted for physical abuse and sexual abuse. This is in contrast with the previously mentioned researches. The contradiction might be explained by the characteristics of these studies. The study of Aspelmeier et al. (2007) was aimed solely on sexually abused female students. Salzinger et at. (2007) concentrated on preadolescents with the age of 9-12 years old and used a considerably smaller sample size. The current

study is more representative, since a large sample size (*N*=2980) was used that consisted of almost equal numbers of 24 year old males and females.

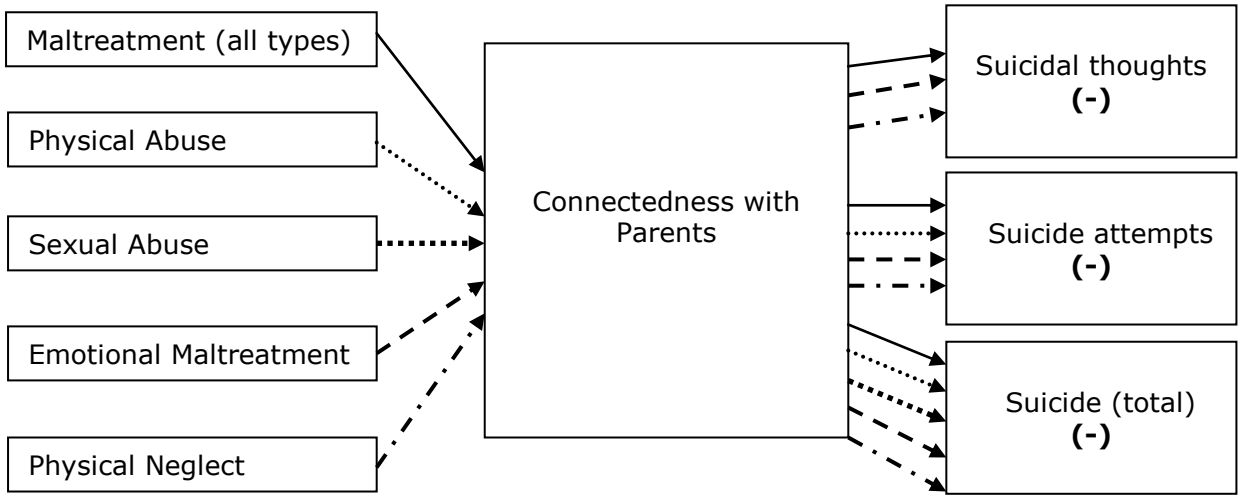

Figure 6. Overview of the results of the logistic regression analyses for 'connectedness with parents'
Note: **(-)** Means that the score of this suicide variable is decreased

Conclusion

Maltreatment (all types) had no significant relationship with suicidal risk behavior. Additionally, some differences have been found for the several types of maltreatment. Sexual abuse did have a relation with suicide attempts and suicide (total), and emotional maltreatment with suicide (total) as well. All the other relationships between the maltreatment types and the suicide variables were not significant. The chi-square analyses of the factors showed significance between the suicide variables and almost all factors. However, there was hardly any significance between the factors and the maltreatment types. In the logistic regression analyses, the factors did influence the association between maltreatment and suicide in different ways. The most important factors were 'negative self-concept' and 'connectedness with parents'. Teacher support gave the most remarkable result: it had the status of a risk factor instead of a protective factor of suicidal risk behavior. For the interpersonal-psychological theory (Ribeiro & Joiner, 2009), insufficient evidence has been found for the direct relationship between childhood maltreatment and suicide. However, evidence has been found for the theory on this subject in combination with the variables 'social support' and 'connectedness with parents'. Furthermore, in the context of 'negative self-concept', the theory might need some adjustment for childhood maltreatment.

Strengths and Limitations

In this study, the sample size was larger than most samples in research that has been done concerning the relation between maltreatment and suicide. Furthermore, the interviews

were done by trained professionals. Moreover, the submission of the Child Protection Cases in this research results in a more valid comparison of maltreated persons and non-maltreated persons. Additionally, because of the similarities in age of the participants, it is more reliable to make comparisons within the sample. Another added value offered by this research concerns the fact that all types of maltreatment were taken into account as well as one combined factor. This leaded to an extensive view on the subject. Furthermore, many factors have been included in this study, which also contributes to obtaining an extensive view on the subject. Finally, the factor 'connectedness with parents' was made up by 'relationship with parents' and 'present contact with parents', which makes the factor and the research innovative because 'present contact with parents' was not yet taken into account in earlier researches.

Several limitations of this research should be noted as well. It is difficult to generalize the results and implications to other age groups in the population, because of the similar age of the participants. Furthermore, the information from the variables could have been restricted, since the variables were made dichotomous for the analyses. Finally, another limitation of this research is that it uses self-reports.

Implications

One more implication for future research must be mentioned. The largest and most representative research that has been done on the subject, included 21 countries but did not include all types of maltreatment (Bruffaerts et al., 2010). Therefore, it is recommendable that a nationwide research like this should be done in all countries. In the Netherlands, the home country of the authors, little research has been done concerning the association between all the types of childhood maltreatment and suicidal risk behavior, thus it is specifically recommended for the Netherlands.

The assumption about the interpersonal-psychological theory has not been proven with the results of this research, because there were no direct significant relationships between childhood maltreatment and suicidal risk behavior. Thus, childhood maltreatment is probably not related with the two states of the theory. However, the association between childhood maltreatment and suicide attempts was significant in combination with the variables 'social support' and 'connectedness with parents'. This indicates that the two states might well be important, because these variables have some common characteristics that also seem to be included in the two states. In accordance with the theory, it was expected that a negative self-concept in maltreated persons would increase the risk of suicide attempts, because the variable negative self-concept contained items that measure some aspects of the two states. However, the results showed that not suicide attempts, but suicide ideation was increased. This could implicate that these persons have not acquired the capability to commit suicide, because in order to attempt suicide one must experience

both states and have the capability (see figure 1). Further research is needed to test this implication.

Finally, the research also provides implications for the clinical practice. Because of the importance of negative self-concept for suicidal risk behavior in maltreated persons, it is implicated that the initial care for maltreated children should include the screening and prevention of a negative self-concept, in order to prevent suicidal behaviors. Furthermore, the clinical practice should focus on the improvement of the self-concept of persons who have been maltreated in their childhood. The focus in the prevention and treatment of suicidal behavior in maltreated persons should also be on their support groups. In the initial care of maltreated children, the amount of support received from parents/family, teachers and peers should be screened. For clinical practice, it is recommendable to use a system-oriented approach for persons who have been maltreated in their childhood, in order to reduce suicidal behaviors. This approach should include the parents, family, teachers, and possibly also peers in the treatment of maltreated children. Especially the school system (teachers) should be involved in the care for maltreated children, since teacher support appeared to be a risk factor for suicide in this study. In conclusion, many improvements are still possible in the care for and research on maltreated children and the risk of suicidal behavior.

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Appendix
SFI – OVERSIGHT

Questions	(SPSS variable name) Variables
1	**(5) Gender** Man: 1, woman: 5, not known: 9
2	**(6)Living accommodations** 8 options
3	**(7) Number of children living at home** 0: 0 to 7:7 children, 8: don´t know, 9: not known.
4	**(8) Education level** 9 options, of which one is "don´t know"
5	**(9) Ever started on vocational or higher education?** 5 options: 1: completion, 2: under education, 3: dropped out 5: never started on one, 9: not known.
6	**(10) Type of vocational or higher education.** 8 options, of which one is no education.
7	**(11) Main occupation** 17 options.
8	**(12)Weekly working hours** Write 888, if you don´t know.
9	**(13) civil status – married or living together** Options: 1: married or registered partnership, 2: living together, 5: no, 8: don't know, 9: not known.
10	**(14)Boy/girlfriend** – going steady Options: 1: yes, 5: no, 8: don´t know, 9: not known, 10: irrelevant.
11	**(15)Social support from partner during problems** 5 options: 0: haven´t had any problems, 1: always, 2: usually, 5: no/rarely, 8: don´t know, 9: not known, 10: irrelevant.

12 **(16-30)Questions about selfconception**

15 items with 4 point Likert scala from 1: high agreement to 4: high disagreement, 8: don´t know, 9: not known.
A: selfsatisfaction, b: can´t do anything, c: good qualities, d: able to do things as good as others, e: have a lot to be proud of, f: feels useless, g: feel as valuable as others, h: want more self respect, i: tendency to feel like a failure, j: positive self attitude, k: need a true friend, l: nobody to confess inner thoughts too, m: often feels empty, n: often feels rejected by others, o: often lack self confidence.

13 **(31-34) Selfrating of physical and mental health.**

Options 1: yes, 5: no, 8: don´t know, 9: not known.
A: disturbance in sleep, b: anxiety attacks, c: usage of nerve medicine or sleeping pills, d: received help for mental problems from psychologist, psychiatrist, therapy group or at hospital.

14 **(35)The presence of abdominal pain during the last 3 months**

6 options: 1: daily, 2: weekly, 3: each month, 4: not at all/rare, 8: don´t know, 9: not known.

15 **(36) Headache during the last 3 months**

Options like question 14.

16 **(37) Feelings of overwhelming the last 3 months**

Options like question 14

17 **(38) Nervous and unstable the last 3 months**

Options like question 14.

18 **(39)Feeling down and sad the last 3 months**

Options like question 14, with extra option for not wanting to participate: 7.

19 **(40)Irritability for no reason the last 3 months**

Options like question 18.

20 **(41)Feelings of problems being overwhelming the last 3 months**

Options like question 18.

21 (42-45) recollections of past unpleasant experiences

Options: 1: yes, 5: no, 8: don´t know and 9: not known to the following categories:

A: nightmares/unwillingly thinking, b: deliberate avoidance of situation/recollection, c: constant hyper vigilance, d: emotional detachment from others and surroundings.

22 (46-55) statements about personality

Options 3 point likert from: 1: don´t fit, 2: partly fit, 3: good fit, 8: don´t know, 9: not known in the following categories:

A: easily angry and often hot-tempered, b: keeps to yourself/looner, c: obedient, d: have at least one good friend, e: often starts conflicts and ability to make others do things, f: peers are mostly like you, g: often accused of lying and stealing h: often teased or bullied, i: steals, j: trouble getting friends.

23 (56-61) Statements about feelings and behaviour the last 6 months.

Options: 5 point likert, 1= never – 5= very often, 8: don´t know, 9: not known in the following categories:

A: problems with finishing projects, b: difficulty with handling demanding assignments, c: problems with remembering appointments or other things, which ought to be remembered, d: avoidance or procrastination of assignments, which demands considerations, e: restlessness in hands and feet, when required to sit still, f: feelings of hyperactivity and need to do things, because of an inner drive.

24 (62) Health selfrating

5 point Likert: 1: very good to 5: very bad, 8: don´t know, 9: not known.

25 (63) Reduced working ability because of sickness, accident, handicap or hard work

3 point Likert: 1: yes, very much, 3: no, not very much, 5: no, not at all., 8: don´t know, 9: not known.

26 (64) "Has a doctor told you, what is wrong with you?"

1: yes, 5: no, 8: don´t know, 9: not known, 10: irrelevant.

27 (65) Chronic disease or disorders

1: yes, 5: no, 8: don´t know, 9: not known.

28 (66) Current mental disorder

1: yes, 5: no, 8: don´t know, 9: not known.

29 **(67) "Has your doctor told you that you have a mental disorder?"**

3 point Likert: 1: yes, very much, 3: no, not very much, 5: no, not at all, 8: don´t know, 9: not known.

30 **(68) Alcohol problems**

Options: 1: yes, but not anymore, 2: yes, 5: no, never, 8: don´t know, 9: not known.

31 **(69-86) Alcohol consumption on the latest weekday (not Friday, Saturday or Sunday)**

Options: number of bottles, number of glasses, and number of units of alcohol in the following categories (no coding in SPSS).

1. Regular beer, 2. Ready to drink (Barcardi breezer etc.), 3. strong beer, 4. Red/white wine, 5. Dessert wine, 6. liquor.

32 **(87) Height**

Centimetres.

33 **(88) Weight**

Kilograms.

34 **(89-96) Drugs "Have you ever tried...?"**

Options: 1: Yes, 5: no, 8: don´t know, 9: not known in the categories:
A: speed, b: cannabis, c: cocaine, d: LSD, e: euphoriant mushrooms, f: heroine, g: "sniffing", h: other drugs.

35 **(97) Age of drug debut**

Age in years.

36 **(98) Last consumption of the above listed drugs**

1: one week, 2: one month, 3: last 3 months, 4: last year, 5: more than one year, 8: don´t remember/know, 9: not known.

37 **(99) suicide attempts and –thoughts**

4 Options: 1: yes, considerations, 2: yes, attempted, 5: no, 8: don´t know, 9: not known.

38 **(1001) Willingly overdose or other forms of self harming behaviour**

5 options; 1: yes, overdose, 2: yes, self harm, 3: yes, both, 4: No to both, 5: don´t know (no coding in SPSS).

A: (101) The last time of overdose

4 options: 1: less than a month, 2: between a month and a year, 3: more than a year, 8: don´t know/remember, 9: not known, 10: irrelevant.

B: (102-109) Any of the following reasons explaining overdose?

5 options: 1: yes, 5: no, 7: don´t want to answer, 8: don´t know, 9: unknown, 10: irrelevant in the "categories":

A: wanting to show desperation, B: death wish, c: self punish, d: scare somebody, e: revenge, f: intolerable feelings, g: find out if anyone really cares, h: attention wish.

C: (110) Hospitalization because of overdose?

Options: 1: yes, 5: no, 8: don´t know/remember, 9: not known, 10: irrelevant.

39 **A: (111) Time of last self harming**

4 options: 1: less than one month, 2: between one month and a year, 3: more than a year, 4: don´t know (no SPSS coding).

B: (112-119) any of the following reasons explaining self harm?

Options: 1: yes, 5: no, 7: don´t wish to answer, 8: don´t know/remember, 9: not known, 10: irrelevant in the following categories

A: wanting to show desperation, B: death wish, c: self punish, d: scare somebody, e: revenge, f: intolerable feelings, g: find out if anyone really cares, h: attention wish.

C: (120) Hospitalization because of selfharm?

Options: 1: yes, 5: no, 8: don´t know, 9: not known, 10: irrelevant.

40 **(121-128) Statements about body, weight and eating habits**

6 options with 4 point Likert after how good the statements fit: 1: very good fit – 4: never fit, 8: don´t know, 9: unknown. Statements in following categories:

A: bad conscience, when eating candy, b: On diet, c: satisfied with eating habits, d: to avoid gaining weight or for loose of weight: starvation diet or faste, e: to avoid gaining weight or for loose of weight: diet pills or diet powder, f: to get rid of eat food: vomit, g: find it uncomfortably eating with others, h: afraid of not being able to stop eating, when first started.

41 **(129) Relationship to biological parents - childhood.**

4 options: 1: loving and friendly, 2: neutral, 3: conflict-ridden, 8: don´t know, 9: not known.

42 (341-343) Living, telephoning or texting with biological father and mother.

1. Living with parents (SPSS codes: 1: yes, both, 2: yes, mother, 3: yes, father, 5: no, 7: both dead, 8: don't know, 9: not known) ,
2. Contact to mother (SPSS coding: 1: once or more each week, 2: rare, 3: never, 7: mother dead, 8: don´t know, 9: not known, 10: irrelevant)
3. Contact to father (SPSS coding: 1: once or more each week, 2: rare, 3: never, 7: father dead, 8: don´t know, 9: not known, 10: irrelevant)

43 (131) Hit by parents/stepparents

2 options: 1: yes, 5: no, 8: don´t know, 9: not known.

A (132): age the last time of beating

5 options: 1: below the age of 5, 2: 5-6 years, 3: 7-9 years, 4: at least 10 years, 8: don´t know, 9: not known, 10: irrelevant.

B. (133) Age the first time of beating

5 options: 1: 0-5 years, 2: 6-12 years, 3: 13-18 years, 4: 19 – years, 5: don´t know (no SPSS coding).

C. (134) repeated beatings over a longer period?

5 options: 1: repeated times during several years, 2: repeated times over one period, 3: single times. 4: only once, 8: don´t know, 9: not known, 10: irrelevant.

44 (135-242) Events, which the subject, family or close friends have experienced.

Options: 1: yourself, 2: family, 3: friends, 4: No one, SPSS coding is 1: answered, 5: unanswered, 8: don´t no, 9: not known with 5 variables per event category:

A: serious traffic accident, b: fire, c: another accident, d: assault, e: threats about violence, f: drowning, g: robbery, h: maltreatment, i: bullying or humiliation, j: rape, k: threaten suicide, l: attempted suicide, m: committed suicide, n: died, o: a serious physical disease, p: mental disorder, q: eating disorders, r: repeated physical punishment from family member, s: sexual assault committed by family member, t: received help from psychologist, u: participated in a self help group, v: medical ordered medicine for emotional or mental problem.

45 **(243-248) Have you (as an adult – over 18 years) experienced the following types of violence?**

4 options: 1: yes, within the last 12 months, 2: yes, 5: no, 8: don´t know/remember, 9: unknown.

Violence categories:
A: threats of physical harm, b: pushed, pulled or hit with a light touch, c: kicked, hit with fist or object, d: thrown into furniture, walls, down staircase, e: choking attempts, attacked with knife or firearm, f: other forms of violence.

46 **(249) As an adult have you ever been subject of threats of violence that were to serious that you got scared?**

4 options: 1: yes, during the last 12 months, 2: yes: earlier, 5: no, 8: don´t know, 9: not known.

47 **(250-259) Who has threatened you or exposed you to violence?**

1 option for marking yes in the following categories, SPSS coding is 1: answered, 5: not answered, 8: don´t know, 9: not known, 10: irrelevant:

A: current spouse/partner, b: former spouse/partner, c: current or former boy-/girlfriend, d: parents or stepparents, e: other family members, f: friend or acquaintance, g: coleaque or person on your work, h: personal on institution/school, i: another person, which I know, j: a stranger, k: don´t know.

48 **(260-265) forced to sexual activity**

6 options: 1: yes, as a child (below 13), 2: yes, as adolescent (13-17), 3: as an adult (18-), 4: yes, but don´t remember when, 5: No, 6: unknown, SPSS coding is 1: answered, 5: not answered, 8: don´t know, 9: not known.

49 **(266-269) Was it...**

Options: 1: yes, 5: no, 8: don´t know, 9: not known in categories:

a. Sexual touch, flasher, b: attempted forced intercourse, c: forced intercourse, d: sexual abuse.

50 **(270) Has it happen in the last year?**

1: yes, 5: no, 8: don´t know, 9: not known.

51 (271-281) who forced you?

1 option for marking yes to the following categories, SPSS coding is 1: answered, 5: not answered, 8: don´t know, 9: not known:

a. Current spouse/partner, b: former spouse/partner, c: current or former girl-/boyfriend, d: parents/stepparents, e: other family members, f: a friend or acquaintance, g: coleaque or person on your work, h: personal on institution/school, i: another person, which I know, j: a stranger, k: don´t know.

52 (282-290) treated in the following ways by parents/stepparents:

3 options for marking 1: yes, 5: no, 8: don´t know, 9: not known.

Categories:
A: spanking, b: beaten with objects, c: threaten by weapon, d: thrown things after you, e: choking, f: burn or bite marks, g: repeated bruises after beating, h: doctor pointed out injuries on you for example broken bones, burns etc. I: violence resulting in bruises, bleedings or other physical harm.

53 (291) Told other adults outside the family about it

Options: 1: yes, 5: no, 8: don´t know, 9: not known.

54 (292-294) Have you been examined after the incident by the following:

Options: 1: yes, 5: no, 8: don´t know, 9: not known.

Categories:
A: doctor, B: teacher, social worker, nurse or school teacher, c: other adults outside the family.

55 (295-300) Experienced the following in childhood or youth.

Options: 1: yes, 5: no, 8: don´t know, 9: not known in the following categories:

A: Addressed in humiliating or degrading manner by parents/stepparents, b: humiliated or degraded in public by parents/stepparents, c: threatened about getting thrown out of the home by parents/stepparents, d: threatened about violent punishment by parents/stepparents, e: parents/stepparents have trough their behaviour shown that you were not wanted or loved and worthless, f: parents/stepparents have critized or bullied you.

<u>The self report items ends here and the rest of the questions are ask by an interviewer</u>

56 (301-307) Parents have different options about when a child should be able to take care of themselves – below 12 years did you experience the following:

Options: 1: yes, 5: no, 8: don´t know, 9: not known in the following categories:

A: you washed your own close, b: went to school in dirty clothes, c: make sure yourself that you went to the dentist, d: went hungry, because there was no one to cook you dinner or nothing in the fridge, e: had to take care of younger siblings, while parents were out, f: take care of yourself, while you were sick, g: had to call an doctor yourself, when sick.

57 (308-310) Responsibilities as a child, ever experienced:

Options: 1: yes, 5: no, 8: don´t know, 9: not known in the following categories:

A: take care of yourself, because your parents had problems with alcohol and drugs, b: you parents depended on you help, because they had emotional problems, c: often take care of yourself, because your parents went away or stayed away for several days at the time.

58 (311-316) How did you experience your childhood?

7 options: 7 point Likert scale from 1: never, 4:sometimes to 7: always, 8: don´t know, 9: not known.

How often...
a: were you overall satisfied with support received as a child, b: did you have contact to others in the same situation, c: could you talk about your thoughts and feelings as a child, d: were there someone to help you with practical matters as a child, e: did you feel let down by people, whom you expected you could count on, f: were there someone, who helped you or supported you, when you needed it as a child.

59 (317-327) Who helped and supported you

1 option for marking yes, SPSS coding: 1: answered, 5: unanswered, 8: don´t know, 9: not known, 10: irrelevant.

A: mother, b: father, c: grandparents, d: siblings, e: other family, f: friends, g: friends' parents, h: school teacher, i: teachers, j: others

60 (328) seriously wanted to get away from home, before the age of 16.

Options, 1: yes, 5: no, 7: don´t want to answer, 8: don´t know/remember, 9: not known.

61 **(329) Ran away from home in 24 hours or more**

Options: 1: yes, 5: no, 8: don´t know/remember, 9: not known.

62 **(330-336) Committed one of following acts**

3 options; 1: yes, 5: no, 8: don´t know, 9: not known.

Categories:
A: shoplifting, b: stolen bike, c: stolen car, d: burglary, e: vandalism, f: violence, received a conviction for crime.

63 **(337) Number of schools in the first 9 years of school attendance.**

64 **(338) Problems concentrating in school**

Options, 1: yes, very much, 2: sometimes, 5: no, never/rarely, 7: don´t wish to answer, 8: don´t know, 9: not known.

65 **(339) Special education.**

Options, 1: yes, 5: no, 8: don´t remember/know, 9: not known.

66 **(340) Bullied in school.**

Options, 1: yes, often, 2: yes, rarely, 5: no, never, 8: don´t remember/know, 9: not known.

67 **(341) Participation in follow-up study, if made**

3 options, 1: yes, 2: no, 3: don´t know.

<u>The following last questions are rated by the interviewer</u>

68 **(345) Danish language abilities**

Options: 1: perfect (no accent), 2: very good (a little accent), 3: Good (understandable with a strong accent), 4: poor, 5: does not speak Danish or only speak a little Danish, 8: don´t know.

69 **(346) Has the subject answered questions 45-55 her-/himself.**

Options; 1: yes, all of them, 2: yes, partly, 5: no, the interviewer has filled them in.