

“Only a friend” – The bereavement process of young adults who have lost a friend to a traumatic death

A mixed methods study

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“You felt like, maybe overreacting then, because everybody, no one meant that you had suffered a loss, so why did you? Was it really that bad? (...) You don’t really know which category to put yourself in... I have understood that that I am “affected”, but I am not a “bereaved”...”

Young woman who lost her best friend

“I have lost a large part of my life, things that you aren’t aware of all of the time, but sometimes. It’s hard, because there are situations in which you need someone, and there’s a missing piece, not family, not your girlfriend, but a different kind of role... Something that you had before, that hasn’t been replaced, and may never be so either.”

Young man who lost his best friend

“The way it happened was so dominating, that it took the focus away from the actual loss. ... We do not completely understand yet, so ... (...) “John” became so small in the middle of it all, and you spend a lot of time trying to imagine how it happened.”

Young woman who lost her best friend

Scientific environment

The PhD candidate was employed at Center for Crisis Psychology (CCP) throughout the whole PhD period and the duration of the related research project. Throughout the PhD period, the candidate was also associated with the Department of Psychosocial Science, in the Faculty of Psychology, at the University of Bergen. Within the Department of Psychosocial Science, University of Bergen, the candidate was associated with the Graduate School of Clinical and Developmental Psychology, where also most of the doctoral training was conducted.

The main supervisor was Professor, PhD Kari Dyregrov (CCP, Bergen University College), while co-supervisors were Professor, PhD Stig Berge Matthiesen (BI Norwegian Business School) and Professor, PhD Jon Christian Laberg (University of Bergen).

This PhD study was part of a larger research project that was conducted at CCP, and the candidate was a part of the project group here. CCP is a competence center for grief, crises and disasters, offering help and support after single and major events. After the attacks on the Norwegian island of Utøya on July 22nd 2011, the health authorities turned to CCP for extensive consultative advice. Since 1988, CCP has been involved in the majority of the national disasters (e.g., train-, plane-, boat- and bus accidents), mainly clinically also in carrying out research. The center has also played a similar role in relation to many disasters and war situations at an international level. Since its establishment, the center has conducted extensive research on people affected by crises and trauma, as well as those bereaved after traumatic deaths, suicide and cancer, and produced more than 300-400 publications (scientific papers, books, book chapters). At CCP research has centered on the reactions, the predictors (and, therefore, the inhibitors) of strong reactions, coping strategies, resilience issues, the support and help on offer, and the experiences related to the help that is offered. Friends' grief is a new topic of research at CCP. Three of the members of the project group, including the main supervisor of the PhD candidate, have also completed doctoral dissertations in the bereavement field, among the few in Norway (A. Dyregrov, 1988; K. Dyregrov, 2003; Kristensen, 2012). Throughout the last 20 years, CCP has also collaborated closely with several organizations for bereaved after sudden and traumatic deaths, such as the Norwegian SIDS and Stillbirth Society (LUB), The Norwegian Cancer Society and the Norwegian Organization for the Suicide Bereaved (LEVE).

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Several individuals and groups have made important contributions, and provided various kinds of support and help, throughout my PhD period.

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Next, I would like to express my thanks to The Egmont Foundation, The Norwegian Directorate for Health and Center for Crisis Psychology, for the financial support which made the whole project on bereaved after the Utøya-killings, July 22nd 2011, possible.

Furthermore, I would like to give a special thanks to my supervising team – Kari, Stig and Jon Christian, for great support and encouragement throughout my PhD period. You have given me excellent guidance, valuable comments and feedback, and shared your up-to-date knowledge. We have had many interesting discussions. Especially, I would like to thank my main supervisor Kari, for including me in this project, and for having confidence in me and encouraging me to take a PhD. You have allowed me to work independently, but at the same time been available for support and advice.

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Iren Johnsen

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Abstract

The present study was part of a larger longitudinal project, “Bereaved parents, siblings and friends after Utøya July 22nd 2011”, which was conducted at Center for Crisis Psychology between 2013 and 2016. This sub-study focused on the close friends of those who died in the Utøya-killings of July 22nd 2011, with the main aim of increasing knowledge about what young adults face after they losing a close friend to a traumatizing death. In addition to exploring the level of grief and trauma reactions, the study examined possible relationships between reactions, the level of strain, the consequences for functioning at school or work, and the received and wanted help and support (both from professional helpers and their social network).

The study is a prospective and non-experimental mixed methods study, and consist of both quantitative data (questionnaires) and qualitative data (in-depth interviews). Data were collected at three time-points – T1 (19 months post-loss), T2 (28 months post- loss), and T3 (40 months post-loss). Quantitative data were collected at each of the time points (T1, T2 and T3), while qualitative data were collected at T2.

The aim of Paper I was to explore the bereaved friends’ situation 1 ½ years after the loss (at T1), with a focus on grief and trauma reactions, psychological distress and psychosocial functioning. The main findings were that bereaved friends reported elevated levels on all symptom measures, with the majority scoring above the cut-off levels for complicated grief, trauma reactions, psychological distress and functional impairment. Many of the friends felt the need for help from the public health services, but only half of these received any help. More experienced need for help was also associated with increased levels of trauma reactions, complicated grief symptoms, psychological distress, functional impairment, and absence from school or work. Gender differences were found for all symptom measures, with females reporting higher levels of both grief and trauma reactions.

The qualitative data were the focus of Paper II, and the aim was to explore young adults’ experiences following the loss of a close friend in terms of how they processed the loss, how the grief was influenced by the circumstances concerning the death, what characterized their grief and their main struggles. The main themes identified from the analyses of the interviews were concerned with: 1) how circumstances of the event interfered with the grieving process;

2) the acceptance of the loss; 3) the daily experiences of the loss and adjustment to it; and 4) the recognition of friends as bereaved. The main findings were that the loss of a close friend had a profound effect on the young people, who also felt that the processing of the loss was disturbed by the circumstances concerning the death. In addition, bereaved friends did not feel completely recognized as bereaved, by either the helpers or society.

The focus of Paper III was the long-term effects of the loss and the duration of complicated grief over time, as well as how complicated grief was affected by avoidant behavior and rumination. Changes in symptoms over time were measured by a latent growth model, which showed individual differences both at T1 and around the change periods (T1-T2 and T2-T3). There was a significant decrease across time for all symptom measures, but correlations showed that individuals with high complicated grief scores at T1 had the most reduction in symptoms between T1 and T2, while those experiencing the most reductions between T1 and T2 were most probably those reducing least between T2 and T3. A piecewise growth curve model showed that more avoidance increased the risk of complicated grief, as well as an indirect effect of rumination on the link between avoidance and complicated grief. Gender differences were also found to relate to the long-term effects of the loss, with a significantly higher percentage of females scoring above the cut-off level of 25 for complicated grief, across all time points.

The main findings from this study are that bereaved friends experienced strong reactions after the loss of their close friend. The quantitative findings showed that a large proportion of the friends scored above the designated cut-off level of the symptom measures, indicating complicated grief, trauma reactions, functional impairment, and mental distress. The qualitative findings showed that their struggles especially concerned adaptation to daily life without their friend and acceptance of their loss, while that the trauma associated with the death of their friend further complicated the processing of grief among this sample. Friends also reported troubles at school or work, and that they struggled with work performance and absence. Females especially struggled after the loss, and scored higher than the males for all symptom measures. The long-term findings showed that high symptom severity also endured over time, with the bereaved friends still heavily impacted by the loss of their close friend, several years after the loss. Avoidance and rumination further increased the risk of complicated grief reactions.

List of publications

Paper I:

Johnsen, I., Laberg, J. C., Matthiesen, S. B., Dyregrov, A., & Dyregrov, K. (2015). Psychosocial functioning after losing a close friend in an extreme terror incident. *Scandinavian Psychologist*, 2, e5. <http://dx.doi.org/10.15714/scandpsychol.2.e5>.

Paper II:

Johnsen, I., & Dyregrov, K. (2015). "Only a Friend": The Bereavement Process of Young Adults After the Loss of a Close Friend in an Extreme Terror Incident - A Qualitative Approach. *OMEGA—Journal of Death and Dying*, 0 (0), 1–19.

Paper III:

Johnsen, I., Dyregrov, K., Matthiesen, S. B., & Laberg, J. C. (in review). Long-term reactions to the loss of a close friend in an extreme terror incident. *Death Studies*.

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List of abbreviations

CCP:	Center for Crisis Psychology
CG:	Complicated grief
DSM-5:	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
GHQ:	General Health Questionnaire
ICD-11:	The International Classification of Diseases, 11th Revision
ICG:	Inventory of Complicated Grief
IES:	Impact of Event Scale
PTSD:	Posttraumatic Stress Disorder
RS:	Rumination Scale
WSAS:	Work and Social Adjustment Scale

1 Introduction

1.1 Background

Based on extensive clinical and research experience of working with bereavement, trauma and crises, Center for Crisis Psychology (CCP) started a large longitudinal research project on those bereaved after the Utøya-killings, which took place on July 22nd 2011, resulting in the murder of 77 people. One important aim of the project was to provide systematic knowledge that may facilitate learning from the situation of all affected groups of bereaved after the Utøya-killings, in order to give them the help and support that they need.

In planning the project, it was taken into account that previous research, in addition to the clinical experiences of CCP, indicated that bereaved friends are often not included in the follow-up measures after the deaths of loved ones. Although many adolescents and young adults face the death of a close friend every year, few previous studies have focused on complicated grief after losing a close friend, let alone the effects of losses after traumatic deaths or the long-term impact of such a loss. It was then decided that a PhD study, which focused solely on bereaved friends, should be included as a sub-study in the ongoing research project concerning the aftermath effects of the Utøya-killings, in addition to the sub-studies on bereaved parents and siblings. The PhD candidate was the project leader of this sub-study. This Norwegian research initiative is, in fact, among the first studies documenting the loss of a close friend due to a potentially traumatizing death, with an aim to provide much needed knowledge about the long-term effects of losing a close friend in young adulthood. Based on previous research and theory relating to other groups of bereaved, and in order to compare the results concerning close friends with other bereaved groups, the present sub-study on bereaved friends was built on the same structure as the parallel sub-studies, which were simultaneously conducted on bereaved parents and siblings following the Utøya-killings. The focus of this thesis concerns the bereaved friends, while results from the studies of bereaved parents and siblings will be presented in other papers (e.g., K. Dyregrov, Dyregrov, & Kristensen, 2014; K. Dyregrov, Kristensen, Johnsen, & Dyregrov, 2014; Kristensen, Dyregrov, Dyregrov, & Heir, 2016; Kristensen, Gjestad, Dyregrov, & Dyregrov, in manuscript). By documenting which practice and help measures can best ensure optimal care,

support and treatment, at the right time and place, the knowledge accumulated through this study may be utilized in effort to help these groups of bereaved in future disasters.

Rationale and structure of the thesis

The structure of the thesis is as follows. The introduction (section 1) will start with presenting the background of the study – the killings on Utøya, on July 22nd 2011. This section, together with theory and previous research (section 2) on friendship, grief and complicated grief, the relationship between grief and trauma associated with traumatic losses, benefits of received help, and the effect on functioning, forms the basis for the study's research questions and aims (section 3). The study design and methodology are presented in section 4. Section 5 includes the presentation of the results from each of the three papers in this thesis, while section 6 includes a methodological discussion as well as a joint discussion on the findings from the papers. The main conclusions and implications of these findings are presented in section 7.

1.2 The killings on Utøya, July 22nd 2011

On July 22nd 2011, Norway was struck by a two sequential terrorist attacks. First, the right wing extremist, Anders Behring Breivik, detonated a car bomb outside the government building in Oslo, which killed eight people. He then drove towards the small island of Utøya, where between 500 and 600 young people were gathered for the annual summer camp organized by the Workers' Youth League (AUF), which is the youth division of the Norwegian Labor Party. The terrorist took the ferry over to the island, pretending to be a police officer who was attending the camp for security reasons and to inform the camp attendees of the incidents that had unfolded in Oslo. On the island, he immediately started a systematic killing spree, using dum-dum bullets (bullets that disintegrate inside the victim's body) to increase the degree of internal damage. Desperate youngsters who had gathered on Utøya became helpless victims of the terrorist and were chased around the island for more than an hour. Some youths were shot dead in the lake as they tried to swim to safety. Others, who were wounded or played dead, were killed when the killer checked them for signs of life.

During the shooting, many of victims called or texted their families or friends, making them live witnesses to the killings. Tourists and people living on the mainland used their private boats to pick up desperate young people in the surrounding waters. On this dreadful summer day, many of them became heroes, managing to save several people.

Altogether, 77 people were killed in the two attacks, and 69 of them were killed on Utøya. The victims were mainly young people: 32 of those killed were under the age of 18 years, the youngest of whom was only 14 years old. In addition, 33 people were badly injured. Although several hundred people survived, they had been exposed to mortal danger and enormous psychological distress.

Considered to be the deadliest attack in Norway since World War II, these terrorist incidents represented a national tragedy that went onto affect all of Norwegian society. In the days after the attack, there was a massive mobilization of support for the victims all over Norway, in the form of organizing memorial concerts, rose processions, memorial sites on the web and more. Many people showed their grief by leaving roses, messages and other items at central locations in many Norwegian cities. Countries all over the world, together with organizations such as the European Union, the FN and NATO, also condemned the attacks and expressed their support.

In April 2012, the killer was put on trial. The court trial lasted for two months, with the verdict resulting in the perpetrator being sentenced to 21 years of preventive detention. The sentence is the maximum length of imprisonment that may be given in Norway. According to the statutes, the prosecuting authorities may raise new legal proceedings to extend the custodial sentence by five years at a time, if they still believe that the killer continues to constitute a mortal danger within Norwegian society. This legal procedure may be repeated without limits. Thus, the killer will most likely spend the rest of his life in prison.

Additional stressors to the losses after the Utøya-killings

The heinous crime and the extreme viciousness in which the youths were killed may increase the propensity for severe aftereffects for this sample. There was also a variety of potentially traumatizing factors associated with the Utøya-killings, such as the trauma of the killings, the closeness in the relationships and the age of both the deceased and their close friends. On top

of the actual loss, these factors could have led to additional stress for the bereaved friends, as well as complicated grief processing and impaired daily functioning. After a traumatic event, such as the Utøya-killings, it is important to investigate how additional stressors to the losses (such as the traumatic circumstances of the losses, the constant media attention and the legal proceedings) affect the grieving process. These factors are likely to influence the grieving process, but little is known about the interconnection between them. Thus, the foundation for action and assistance based upon prior experiences may also be seen as limited. The bereaved would also have had varying degrees of socially protective and personal resources, such as participation in rituals, help from professionals or other helpers, support from family, friends and their social network, and access to support groups. The age and the close relationship with the deceased, may further complicate the grief processing.

The massive and prolonged attention this tragedy caused in society could have especially caused additional stress and increased symptom severity for the bereaved (Ahern, Galea, Resnick, & Vlahov, 2004; Holman, Garfin, & Silver, 2014). Dramatic and continuous media coverage can be broadcast both during and after crimes are carried out, as a result of the 24-hour news cycle and via the internet, social media and cell phones (Nakajima, Ito, Shirai, & Konishi, 2012; Turvey, 2012). Constant reminders of the Utøya deaths would also have been present in media headlines long after the event, especially during the trial, where there was extensive media coverage and live broadcasting of the details of each killing. On the one hand, legal processes can be a part of the healing process; on the other hand, they can provoke psychological distress and posttraumatic stress disorder (PTSD) symptoms (Herman, 2003). The Utøya-killings were mentioned in the news every day, usually as the main news item, throughout the first year that followed the incident. Between July 22nd 2011 and December 31st 2012, the event was mentioned in approximately 132,000 Norwegian news stories (according to the online Norwegian Retriever newspaper search engine: <https://web.retriever-info.com>). In addition, the event was referred to by a significant number of international media. Several books have also been written about the Utøya-killings, as survivors and others affected have authored or co-authored books about their experiences.

2 Theoretical framework

2.1 Grief and complicated grief

2.1.1 Theories of grief and the development of the bereavement field

Many clinical and academic disciplines have influenced the development of the grief and bereavement field, with the concept of grief incorporating both psychological and physical manifestations (Stroebe, Hansson, Schut, & Stroebe, 2008). Beginning with the first studies on grief and mourning from Darwin, Freud and Lindeman, the research on bereavement has also developed throughout the centuries (Archer, 2008; Stroebe et al., 2008; R. S. Weiss, 2008). The medical perspective especially influenced the first studies on bereavement, providing tools for treating and diagnosing some of the problems related to grief (Parkes, 2011). From the 1950s onwards, researchers began a more systematic documentation of the manifestations and duration of grief, in which the focus was mainly on the intrapersonal (mental and physical vulnerabilities of grieving persons), although interpersonal issues (social risk factors, care and intervention programs, and the role of social networks) also received much attention (Stroebe et al., 2008). Stage and task models were introduced around the 1970s and 1980s, while the processing of grief became the main focus of both the theory and practice of grief work (Kübler-Ross, 1969; Worden, 1991).

In recent decades, cognitive stress theory and attachment theory have especially influenced the bereavement field, and the research has been empirical rather than theory-driven. The complexities of bereavement experiences have also received an increased focus (Stroebe et al., 2008). *The attachment theory of grief*, developed by Bowlby, concerns the bond that links children to parents, as well as the relationship of committed couples (Bowlby, 1980; R. S. Weiss, 2008). The application of attachment theory to the grieving process is an important development in the bereavement field, since the relationship that someone had with the deceased has a large influence on how they respond to their loss (Archer, 2008). The theory of *continuing bonds* highlights the difficulties of “letting go” of the deceased and “moving on”, which are also important parts of the bereavement process (Klass, Silverman, & Nickman, 1996). Concepts derived from *trauma theory* are also applicable to bereavement, since deaths that are sudden and traumatic, can cause additional stressors to the loss (Archer, 2008). *Cognitive theories* can help to understand two important contextual variations commonly

related to grief: the degree of forewarning and preparedness, and the trauma surrounding the death (Archer, 2008). Another important theoretical development is the *Dual Process Model of bereavement* (DPM) of bereavement, in which different attachment styles are linked to different coping styles (Schut & Stroebe, 2010; Stroebe & Schut, 1999). The DPM also integrates the cognitive stress perspective, where a balance between a loss-oriented coping style (with grief work and cognitive restructuring) and a restoration-focused coping style (where attention is turned away from the grief by engaging in new tasks and relationships) is optimal (Archer, 2008; Schut & Stroebe, 2010; Stroebe & Schut, 1999).

2.1.2 The distinction between grief and complicated grief

Grief is a complex concept to define and the symptom picture will vary between different persons, different cultures and even across time. Common definitions of terms related to grief are that *bereavement* is the objective situation of having lost someone significant through death, *grief* is the emotional and psychobiological reaction to bereavement, and *mourning* is the public display of grief, the social expressions or acts expressive of grief that are shaped by beliefs and practices of a given society or cultural group (e.g., Shear, Ghesquiere, & Glickman, 2013; Stroebe et al., 2008). Traditionally, the pattern of grief has been considered as a period of distress followed by recovery, with variations in this response pattern suspected to be pathological and complicated (Boerner, Mancini, & Bonanno, 2013; Stroebe et al., 2008). Since many of the symptoms of complicated grief are also present for “ordinary” grief responses, the difference is mainly concerned with how long they continue and a matter of degree, rather than kind (R. S. Weiss, 2008). Variations in grief should be viewed as parts of a continuum, rather than being categorically different syndromes (Holland, Neimeyer, Boelen, & Prigerson, 2008).

There are various subtypes of complicated grief and, since there is some disagreement in the bereavement field on the use of terms describing complicated grief reactions, academics and authors use different terms simultaneously. One way to distinguish between the different terms is that *chronic* and *prolonged* grief is characterized by the enduring presence of symptoms associated with intense grief, while *delayed*, *inhibited* or *absent* grief is characterized by little or no signs of grieving early on, although these signs could intensify later on in the bereavement (Stroebe et al., 2008). The existing literature primarily uses the

term “complicated grief” as an overarching term for complications in bereavement, among which the term prolonged grief is the most common. According to Shear, Boelen, and Neimeyer (2011, p. 139), people with complicated grief “experience prolonged acute grief symptoms and struggle unsuccessfully to rebuild a meaningful life without the deceased person”. Prigerson, Vanderwerker, and Maciejewski (2008, p. 166), use the term prolonged grief disorder (PGD) on the bereavement-specific syndrome and argue that this captures the nature of the disorder as “a persistently elevated set of specific symptoms of grief identified in bereaved individuals with significant difficulties adjusting to the loss”. PGD is characterized by marked and chronic separation distress, loneliness, persistent feelings of intense yearning or preoccupation with thoughts of the deceased, disbelief and anger about their death, detachment from others, symptoms of traumatic distress, such as attempts to avoid reminders, and somatization (Prigerson et al., 1995; Stroebe, Schut, & Stroebe, 2007). Shear, Simon, et al. (2011) argue that labeling this syndrome as “prolonged” or “persistent” could confuse people, since grief can be prolonged or persistent without being complicated or pathological.

Among the risk factors for complicated grief are sudden and violent deaths (e.g., accidents, homicide or suicide), emotional closeness to the deceased, lack of preparedness, age and gender (Keesee, Currier, & Neimeyer, 2008; Lobb et al., 2010; Nakajima et al., 2012). The risk of complicated grief increases when young people die (Hardison, Neimeyer, & Lichstein, 2005; Ringler & Hayden, 2000). According to Parkes (2011), personal vulnerability, rather than grief, determines a person’s risk of developing complicated grief reactions. Shifts in symptomatology with increasing age, in addition to ongoing maturation and development, may increase complexity when studying normal and complicated reactions in adolescents and young adults (Kaplow, Layne, Pynoos, Cohen, & Lieberman, 2012). Women are also found to be specifically affected by pathological processes of grieving and report more symptoms than males (Kersting & Kroker, 2010; Malone, 2012; Stroebe, 1998).

The inclusion of complicated grief in the DSM

In recent decades, there has been much debate in the field of complicated grief, including complicated grief as a disorder, as defined in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) (American Psychiatric Association, 2013). Among clinicians and researchers, the disagreement is primarily about the diagnostic criteria

(Prigerson et al., 2008; Rando, 2013; R. S. Weiss, 2008). Rando (2013) argues that the debate is not so much about the need for a DSM category for complicated grief, but about the lack of consensus about what it comprises.

Arguing that PGD constitutes a distinct mental disorder, Prigerson et al. (2009) developed a set of criteria for identifying bereaved persons at a high risk of enduring distress and dysfunction, which was proposed for inclusion in the DSM-5 and the *International Classification of Diseases, 11th Revision* (ICD-11). Shear et al. (2011) suggested that the management of bereaved people would be improved by the inclusion of complicated grief in DSM-5, in turn proposing complicated grief as a new category. Two bereavement-related disorders were proposed for DSM-5: *Adjustment Disorder Related to Bereavement*, to be located in the main body of the text, and *Persistent Complex Bereavement Disorder* (including a Traumatic Death Specifier) to be located in the Appendix (American Psychiatric Association, 2013). The final decision was not to include complicated grief in the DSM-5 (Bryant, 2014).

Benefits of the inclusion of complicated grief could be increased recognition of the situation of bereaved, especially those with more complex reactions. Grief as a diagnosis could also be beneficial for gaining a better understanding of the health consequences of grief. In addition, the inclusion may have encouraged research on how a “normative” course of bereavement differs from that of maladaptive bereavement and the ways in which specific factors, both individual and environmental, may interact and contribute to these outcomes (Kaplow et al., 2012). Some bereaved, however, are afraid of stigmatization, over-diagnosis or medicalization of normal reactions (Shear, Simon, et al., 2011).

2.1.3 Traumatic deaths and the link between complicated grief and PTSD

Although losing a loved one is always devastating, studies have shown that bereaved following sudden and violent deaths (such as accidents, homicide or suicide), are at a higher risk of more severe and longer-lasting consequences, compared to those bereaved after non-violent deaths (e.g., Kaltman & Bonanno, 2003; Lobb et al., 2010; Nakajima et al., 2012; Rheingold, Zinzow, Hawkins, Saunders, & Kilpatrick, 2012). According to Lobb et al. (2010), much of the variance in bereavement outcomes, when compared to deaths from natural causes, can be attributed to the unique features of potentially traumatic deaths. Shear

(2015) report that complicated grief occurs in between 10% and 20% of bereaved people, with higher rates among those bereaved by disaster or violent death. According to Nakajima et al. (2012), however, the prevalence of complicated grief among those bereaved after violent deaths vary between 12.5% and 78%.

Bereavement following sudden and violent deaths seems to precipitate traditional traumatic stress-response symptoms and could be defined as a traumatic stressor, with symptoms that might continue for prolonged periods (e.g., Currier, Holland, & Neimeyer, 2006; Hardison et al., 2005; Lobb et al., 2010). Directly experiencing or witnessing a traumatic event, or learning that a traumatic event occurred to close family member or close friends, might cause the development of PTSD (American Psychiatric Association, 2013). Although it is common to find elevated, but soon declining, rates of PTSD in the general population after terrorist attacks, the rates are higher and the symptoms are more persistent for exposed populations (Laugharne, Janca, & Widiger, 2007). Neria, Nandi and Galea (2008) found the prevalence of PTSD among direct victims of disasters to range between 30% and 40%. The impact of terrorist attacks and mass killings has been explored in several studies (Neria et al., 2007; Nurmi, 2012) and after specific incidents, such as the 9/11 attacks (Ahern et al., 2004; DiGrande, Neria, Brackbill, Pulliam, & Galea, 2011), the shootings at the Virginia Tech University (Vicary & Fraley, 2010), the Oklahoma bombing (Pfefferbaum et al., 2000) and the Boston Marathon bombing (Comer et al., 2014), all in the USA. Those directly involved and their families are the focus of most of these studies, but some studies focus on how these events affect bereaved friends (Pfefferbaum et al., 2000; Vicary & Fraley, 2010). Terrorism or other threats to a person's life may constitute triggering events. Regardless of its trigger, however, PTSD can cause clinically significant distress or impairment in an affected individual's social interactions, capacity to work or other important areas of functioning. Symptoms include intrusive images, avoidance, negative cognitions and mood, arousal and reactivity, and impaired functioning (American Psychiatric Association, 2013). Thus, loss after a death that is sudden and violent also increases the risk of other problems, such as panic disorder, depressive episodes and multiple psychiatric disorders (e.g., Kaltman & Bonanno, 2003; Keyes et al., 2014; Neria & Litz, 2004; Rheingold et al., 2012), and causes greater distress (e.g., Currier et al., 2006; Hardison et al., 2005; Lobb et al., 2010).

Since those bereaved after sudden and violent deaths may demonstrate both traumatic stress reactions and complicated grief reactions, we have to understand both these processes and

their different potential outcomes (Schnider, Elhai, & Gray, 2007). Some researchers claim, however, that, although the reactions have important commonalities, symptoms of PTSD fail to sufficiently capture the unique experiences of those who suffer from chronic grief as a result of violent deaths (e.g., B. L. Green et al., 2001). Nonetheless, both clinical experience and research have identified problems related to the interplay between trauma and grief, and it may be very difficult to think of memories of that person without the “traumatic” circumstances invading their thoughts, since circumstances surrounding a traumatizing death easily give rise to inner images of what happened (Neria & Litz, 2004; Schnider et al., 2007).

Avoidance is a natural component of grief processing and an important strategy used by the bereaved, even though it may be both adaptive or maladaptive (Shear, 2010; Stroebe & Schut, 1999). Avoidance of a range of situations and activities, which serve as reminders of the loss, are documented both among the bereaved family members after the Utøya terror attacks (Dyregov, Kristensen, & Dyregrov, in press) and in previous studies (Coifman, Bonanno, Ray & Gross, 2007; Morina, 2011). Rumination is the compulsively focused attention on the symptoms of one’s distress and on its possible causes and consequences (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), and can be linked to both posttraumatic stress (especially avoidance of stress stimuli) and complicated grief reactions (Nolen-Hoeksema, Parker & Larson, 1994; Stroebe, Boelen et al., 2007; van der Houwen, Stroebe, Schut, Stroebe, & van den Bout, 2010; Zhou & Wu, 2016). Co-rumination refers to excessively discussing personal problems, discussing the same problem repeatedly, mutually encouraging the discussion of problems, speculating about problems and focusing on negative feelings (Rose, 2002). Stroebe, Boelen et al. (2007) argue for the re-conceptualization of ruminative coping after the death of a loved one as an avoidant, rather than a confrontational, strategy because of the similarities with suppression or denial, neither of which facilitate positive “grief work”. According to Morina (2011), experiential avoidance and rumination can be significant mechanisms in psychological distress following exposure to a potentially traumatic event and loss due to violence, and found that both rumination and experiential avoidance predict symptom severity of depression, posttraumatic stress and complicated grief. In their study, Eisma et al. (2015) found that “maladaptive rumination” (e.g., about injustice) predicted higher concurrent and prospective symptom levels of complicated grief and higher prospective symptom levels of depression, while “adaptive rumination” (e.g., about emotional reactions) was related to prospective reductions in symptoms of complicated grief.

2.2 The importance of friendships in adolescence and young adulthood

Friendships are relationships of mutual affection between two or more people. In friendships, we feel togetherness and community with people that we have something in common with (Fowlkes, 1990; Hartup, 2001) and with whom we spend much time, confide in and share our innermost thoughts, feelings and wishes. Defining friendship, however, may be difficult, since the importance of individual peer characteristics is subject to change, although the importance of peer relationship characteristics often remains the same across the life span (Reitz, Zimmermann, Hutteman, Specht, & Neyer, 2014). People's perceptions of the quality of friendships are also independent of the longevity of the friendship (Way & Greene, 2006). Wilkinson (2010) emphasize the importance of having best friends and suggest that best friend attachment is distinct from other types of peer attachment. Most of the literature on the importance of friendship concentrates on the periods of childhood and adolescence, but the importance of friendships continues into young adulthood and beyond (Hartup, 2001; Parker, Ludtke, Trautwein, & Roberts, 2012; Pettit, Erath, Lansford, Dodge, & Bates, 2011). Having positive friendship relations predicts the development of a wide variety of strategies for social competences (Glick & Rose, 2011; Laible, Carlo, & Roesch, 2004).

Improved cognitive abilities may enable adolescents and young adults to recognize that different attachment figures may fulfill different attachment-related functions, and the meaning and functions of attachments are likely to change with cognitive and emotional maturation and development (Markiewicz, Lawford, Doyle, & Haggart, 2006; Parker et al., 2012; Way & Greene, 2006). Peer relations develop to be more reciprocal, positive and intimate, becoming more like adult relations during adolescence and throughout young adulthood (De Goede, Branje, & Meeus, 2009; Hartup, 2001), and in this period one often sees a shift away from parental support towards support from friends (Helsen, Vollebergh & Meeus, 2000; Margolese, Markiewicz, & Doyle, 2005; Nelis & Rae, 2009). Parents will still be the primary attachment figures, but friends are now increasingly being used as a safe haven, providing comfort, reassurance and support (Fraley & Davis, 1997; Markiewicz et al., 2006). Since friendships become more positive and supportive during this period, the influence of friends on a young person's adjustment could be seen as complimentary to the influence of parental attachments (Wilkinson, 2010). This implies that the roles and functions

of friends and peers as key attachment figures should be included when exploring attachment patterns (De Goede et al., 2009; Mund & Neyer, 2014; Nelis & Rae, 2009).

Gender differences are also seen when it comes to friendship relations. Women are often found to have relationships with a greater degree of reciprocity, intimacy, affection, support and instrumental help (De Goede et al., 2009; Hartup, 2001; Malone, 2012; Markiewicz et al., 2006).

2.2.1 The loss of a close friend

The importance of friend relationships during adolescence and young adulthood may indicate that losing a close friend during this period could be a life-changing experience (Balk, Zaengle, & Corr, 2011; Johnson, 2012; Malone, 2012; Ringler & Hayden, 2000).

Experiencing a loss could lead to growth and maturity, but may also interfere with normal developmental tasks and impede functioning (Doka, 2000; Neimeyer, Laurie, Mehta, Hardison, & Currier, 2008). The nature of young girls' relationships could imply that they will be especially at risk of complicated reactions (Coleman, 2011; Malone, 2012).

Perceived closeness to victims has also previously been found to be positively associated with stronger reactions following disasters (A. Dyregrov, Frykholm, Lilled, Broberg, & Holmberg, 2003). Although not focusing solely on bereaved friends, several previous studies have found that, for some, the loss of a close friend may result in severe grief reactions, which are sometimes much more complicated than those presented after the loss of an extended family member (Holland & Neimeyer, 2011; Pfefferbaum et al., 2000; Servaty-Seib & Pistole, 2006-2007). The way that loss and grief are recognized by society may affect how the loss is experienced and how the grief is processed and coped with by the bereaved.

2.2.2 Disenfranchised grief

Society often has expectations about the course of grief, but some bereaved have reactions that deviate from the cultural norm of bereavement. Doka (1989, 2002) introduced the concept of disenfranchised grief in order to explain grief that is not acknowledged or validated by society. In the context of grief, friends constitute a large group that is often

ignored, yet they may have had a very close relationship with the deceased. Servaty-Seib and Pistole (2006-2007) found that emotional closeness predicted high levels of both past and present grief, thereby emphasizing the importance of assessing the closeness of the relationship to the deceased when adolescents experience loss. Friends are highly valued in our lives, yet friends' grief does not receive the same attention and recognition as other groups of bereaved (Doka, 2002; Fowlkes, 1990; Servaty-Seib & Pistole, 2006-2007).

Although clinical experience and research on the grief of social networks also give cause for concern in relation to the grief of close friends, this topic has hardly been studied after traumatic deaths (K. Dyregrov & Dyregrov, 2008). Friends' grief is often a missed out focus when studying close bereaved, which mainly focus on those who are biologically related to the deceased (Balk & Corr, 2009; Malone, 2012; Pfefferbaum et al., 2000). Grief can be especially difficult to handle for young people and, if they do not feel that they are acknowledged and supported, since they do not have a defined place in the "hierarchy of grief", these youths may be at risk of long-term effects due to the lack of care and support.

2.3 Received help and functioning

2.3.1 Functioning at school or work

Returning to school or work is an important part of the healing process after a loss. School and work can serve as a distractor, serve as spaces where the bereaved can get "time off" or be arenas where the bereaved can receive support from fellow students or colleagues, and feel that life goes on. However, school or work might also serve as stressors for the bereaved, and more knowledge is needed about how complicated grief is associated with the functioning and well-being of bereaved friends.

Although there are differences associated with different subtypes, complicated grief seems to be related to impaired social functioning, and problems in the bereavement process may influence attendance and performance at school or work (Ginzburg, Geron, & Solomon, 2002; Williams, Burke, McDevitt-Murphy, & Neimeyer, 2012). Cognitive changes, such as memory deficits, intrusive thoughts and attention difficulties, are induced by grief (Hall et al., 2014). The bereaved may find everyday activities, such as school or work, meaningless after the loss

of a loved one, experiencing a lack of motivation or changes in personal goals, where school and work are less prioritized (Boelen, de Keijser, van den Hout, & van den Bout, 2011). As experienced with traumatic losses, posttraumatic stress, such as intrusive memories and a hyperactive nervous system, could make it harder to concentrate and remember information (A. Dyregrov, 2004), and PTSD symptoms are associated with an inability to perform daily functions (Williams et al., 2012). Although associations have been found between traumatic events and losses, and school dropout and impairment (Broberg, Dyregrov, & Lilled, 2005), few studies have made conclusions regarding the mediating mechanisms between loss or trauma and academic decline (A. Dyregrov, 2004).

Auman (2007) argue that school personnel are central in recognizing the needs of bereaved children and providing the support they need. Support from teachers is important in the aftermath of major crisis (J. G. Green et al., 2015), and perceived support from classmates and teachers is associated with a reduced level of posttraumatic stress after a disaster (Lai, Kelley, Harrison, Thompson, & Self-Brown, 2015). Schools and workplaces vary, however, in the degree of attention, support and adaptation provided to the bereaved. After the Utøya attacks, seminars were especially arranged for Norwegian teachers and school managers to mount a proper response in support of students who had been affected by the terror-attack, whether as survivors or bereaved family members. In a different study, however, K. Dyregrov, Endsjø, Idsøe, and Dyregrov (2014) found that, although Norwegian teachers had both the willingness and wish to help bereaved pupils and students, they felt powerless when trying to facilitate care due to organizational difficulties, role confusion and lack of knowledge.

While some individuals do return to their routines and everyday life immediately after a loss, others may need more adaptation, such as a reduction of homework, the possibility to withdraw to a quiet place, days off, flexible work tasks, fewer demands and less pressure (K. Dyregrov, Endsjø et al., 2014). A focus on individual adaptation in a school or a workplace environment is found in local and national policies, including the Working Environment Act, the Norwegian Labor and Welfare Act and the Education Act. For instance, schools, according to the Education Act, are obliged to provide adapted education for students with needs, including those who have been bereaved. The “Guidelines for psychosocial follow-up after crises, accidents and disasters” (The Norwegian Directorate of Health, 2016) also state that re-socializing individuals back into normal work, family and community life should be the goal of all trauma treatment. The guidelines suggest that monitoring the level of

functioning at school or work can help identifying individuals in need of further help after a crisis, by assessing whether the person is capable of attending school or doing their job.

2.3.2 Health consequences and the need for help

In addition to complicated grief, there are also other health consequences for the bereaved (Stroebe, Schut et al., 2007). Importantly, grief symptoms have been found to predict long-term dysfunction, including suicidal ideation, impaired physical health and social disruption (Prigerson et al., 1995). For young people, their age, loss of people close to them and functional impairment linked to the event, are of great importance to the appearance of mental problems, somatic complaints and behavioral difficulties in the aftermath of terror (Neria et al., 2007; Norris, 2007). Complicated grief might be difficult to differentiate from related disorders, such as depression, anxiety disorders and PTSD, while several psychiatric disorders, such as depression, can also be triggered by bereavement (Stroebe et al., 2008). Although the prevalence varies between studies, it seems that the level of mental disorders is increased after sudden, unexpected and violent losses, compared to natural losses, while recovery seems to be slower (Kristensen, Weisæth, & Heir, 2012). When combined, this will cause problems maintaining normal functioning after the loss. Thus, we need to gain knowledge about the kinds of coping strategies that are possible to adopt in this very special situation, as well as understand the functioning of peer and social network support, and how it may be optimized. It is important to know which aspects of help facilitate coping processes after mass terror, in order to ensure that the bereaved experience holistic health assistance and good quality care after such disasters.

After the Utøya-attacks, the Norwegian health authorities decided to establish a proactive and systematic community-based approach for the survivors and bereaved families (The Norwegian Directorate of Health, 2012). Four three-day gatherings were also arranged by the health authorities for parents, partners, children and siblings of the bereaved between 2011 and 2013. Help, preferably over time, is associated with a positive adjustment to the loss (Ringler & Hayden, 2000). Bereaved friends were not included in this first line of help.

3 Research questions and aims

The aim of the present sub-study on close friends of those killed on Utøya on July 22nd 2011, has been to increase the general knowledge about the situation that young adults face after they lose a close friend to a traumatizing death. As previously underlined, friends are an understudied group when it comes to bereavement research, and the study has aimed to explore both grief and trauma reactions among young bereaved friends. A better understanding of factors that may have a positive or negative effect on bereaved friends' grief reactions and psychosocial situation could provide important information in terms of assessing which actions need to be taken for this and similar groups in the future. Furthermore, the study has examined the degree of and possible relationship between grief and trauma reactions, the level of strain, consequences for functioning at school or work, and the received and wanted help and support (both from professional helpers and the social network). The research questions were:

1. What are important predictors for the grieving process, psychosocial health, and functioning at school or work (trauma reactions, media pressure, personal coping, professional help, help from the school, and social support)?
 - a. What factors increase/decrease the level of complicated grief reactions?
 - b. What kind of help and support did friends receive and what was further desired?
 - c. How are friends' psychosocial and functional capacity, and to what extent is the situation at school or work influenced by the loss?
2. How do young adults experience the loss of a close friend and what characterizes their grief?
3. What is the development of symptoms of complicated grief and trauma reactions across a longitudinal time span of three and a half years?

This thesis consists of three papers. Each of these papers had a separate overarching research focus. For the *first paper*, as the focus was on the bereaved friends' situation one and a half years after the loss, this cross-sectional paper concentrated on possible associations and relations between grief and trauma reactions, functioning, received and wanted help, and media exposure. For the *second paper*, the focus was on qualitative data and an exploration of young adults' experiences following the loss of a close friend. For the *third paper*, the main

focus was on exploring how complicated grief changed over time among bereaved friends, and how posttraumatic stress and ruminative thoughts affected complicated grief reactions.

In order to get a broader overview of the unexplored field of friends as bereaved, a non-experimental and exploratory focus was chosen rather than a hypothesis-testing. Based on previous research, the following conceptual model illustrates the rationale of the study and the research questions:

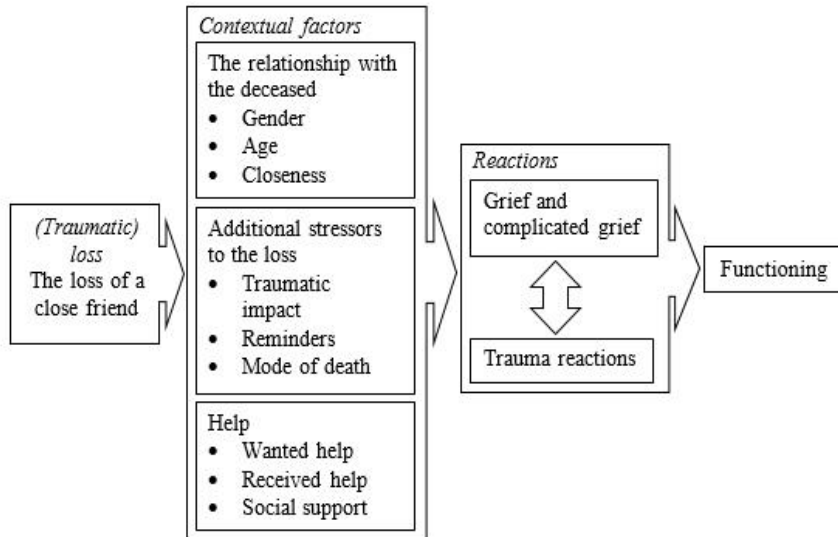


Figure 1. Conceptual model.

What we wanted to explore was the assumption that traumatic losses will cause complicated grief and trauma reactions, which in turn will affect function. These reactions, however, will be influenced by contextual factors to the loss, such as the relationship with the deceased, additional stressors to the loss and help that has been received. In the discussion, the contextual factors will be discussed in detail based on how they affect reactions and functioning.

4 Methodology

4.1 Philosophy of science

Quantitative and qualitative methods are related to different paradigms and assumptions. Quantitative methods have an objective ontological assumption, where reality is separated from the researcher, and the epistemological assumption is that the researcher is independent from what is being studied. The axiology is concerned with values that are free and unbiased, as well as outside the scope of scientific inquiry. The language of research is formal, impersonal and based on set definitions. In qualitative methods, the ontological assumption is that reality is subjective and multiple, while the epistemological assumption is that the researcher interacts with what is being researched. The axiology is concerned with values that are value-laden, biased, personally relative and socially constructed. The language of research is informal, while the research process is inductive, emerging and context-bound (Creswell, 1994).

Over a number of decades, there has been a debate about the relative worth of quantitative vs. qualitative methods, and on either side, the positions may be relatively extreme. In recent decades, however, there has been an increasing recognition that a mix of qualitative and quantitative methods can maximize the research process (Nastasi & Schensul, 2005). The underlying premise of mixed methods is that each paradigm offers meaningful and legitimate aspects of knowledge and understanding, while the underlying rationale encompasses a more complete understanding, the generation of deeper and broader insights, and the development of important knowledge claims that respect a wider range of perspectives (Caracelli & Greene, 1993). Mixed methods research encourages the use of multiple worldviews or paradigms, rather than the typical association of certain paradigms with quantitative research and others with qualitative research. It also encourages the use of a paradigm that encompasses the entirety of quantitative and qualitative research, such as pragmatism.

In the pragmatic paradigm, the ontological assumption is that the world accepts both singular and multiple realities, such that researchers test hypotheses and provide multiple perspectives. The epistemology is practical, such that researchers collect data by “what works” in order to address research questions. The axiology involves multiple stances, such that researchers include both biased and unbiased perspectives. The research rhetoric is both formal and

informal, such that researchers may employ both formal and informal styles of reporting (Creswell & Plano Clark, 2011). The use of triangulation as a methodological metaphor (Erzberger & Kelle, 2003) can help researchers to present not only their theoretical propositions but also the origin of their results in an explicit way, as well as to understand the links between theory, epistemology and methodology in relation to their topic area. Furthermore, it has the potential to make valid inferences, challenge existing theoretical assumptions and develop or create new ones (Ostlund, Kidd, Wengstrom, & Rowa-Dewar, 2011). Thus, pragmatism is the basic research paradigm for this thesis.

4.2 Choice of method and mixed methods perspective

Quantitative and qualitative research can be distinguished from each other in several ways. First, quantitative research focuses on occurrences and estimates of prevalence, frequency and incidence, while qualitative research describes the complexity and the breadth or range of occurrences or phenomena. Second, quantitative methods are confirmatory, seek control, explanation and prediction, and use deductive approaches to statistically test hypotheses. Qualitative methods are often exploratory in nature and seek to generate novel insights using inductive approaches to explore a phenomenon (Curry, Nembhard, & Bradley, 2009). Third, quantitative research is performed in randomized or nonrandomized experimental and natural settings, and generates numeric data through standardized processes and instruments with predetermined response categories. Qualitative research occurs in natural (rather than experimental) settings and produces text-based data through open-ended discussions and observations (Curry et al., 2009).

The mixing of methods draws upon the strengths and perspectives of multiple methods by using sources of information from multiple approaches to gain new insights (Axinn & Pearce, 2006; Curry et al., 2009; Ostlund et al., 2011). A broad definition can be “research in which the investigator collects and analyses data, integrates the findings and draws inferences using both qualitative and quantitative approaches” (Tashakkori & Creswell, 2007, p. 3).

Qualitative research may be the preferred method when the researcher aims to explore a problem, honor the voices of participants, map the complexity of the situation and convey the multiple perspectives of participants. On the other hand, quantitative research may be

preferred when the researcher seeks to understand the relationship among variables or determine the difference between groups (Creswell & Plano Clark, 2011).

Mixed methods in the bereavement field and the use of mixed methods in this study

In health and bereavement research, a justification for using different methods to address different research questions might be that a more comprehensive approach is needed due to the complexity of the phenomena studied or that researchers want to address a wider range of research questions than one method alone would allow (Axinn & Pearce, 2006; Creswell & Plano Clark, 2011; O'Cathain, Murphy, & Nicholl, 2007; Ostlund et al., 2011). The choice of method depends on the goals and priorities of the research project, as well as an accurate assessment of grief phenomena, which may be obscured by the wrong methodology (Stroebe, Stroebe, & Schut, 2003). Since this study aims to explore both the prevalence of grief and trauma reactions, along with the experiences of the bereaved following a loss, a mixed methods design was found to be the most appropriate in providing a comprehensive and detailed picture of the bereaved friends' situation. Combining structured and unstructured methods into a single data collection and varying the data collection approach allow for 1) providing information from one approach that was not identified by an alternative approach, 2) reducing non-sampling error by providing redundant information from multiple sources and 3) ensuring that a potential bias within one approach is not replicated (Axinn & Pearce, 2006).

The present study had a fixed embedded mixed methods design (cf. Creswell & Plano Clark, 2011), where the use of quantitative and qualitative methods was predetermined and planned from the outset of the research process. Questionnaires were applied at all three time points, whereas unstructured in-depth interviews were used at T2 to elaborate on the topics measured in the questionnaires. The use of standardized quantitative instruments and questionnaires in bereavement research can give valuable information on variations in grief patterns, as well as allowing for a fine-grained measurement of grief responses in different groups of bereaved persons (Stroebe et al., 2003). Self-report rating scales and various types of instruments can also be used for the quantitative assessment of, for example, grief responses and personal reactions to bereavement. Tracking grief symptoms over time enables the diagnosis of

individuals potentially “at risk” of complicated courses of grief (Stroebe et al., 2003). Qualitative methods offer the potential for adding depth to the assessment of the grieving process (Stroebe et al., 2003). Semi-structured research interviews was considered to be well-suited for exploring bereaved friends’ grief, since its aim is to collect descriptions of the life worlds of the informants in order to understand the meaning of their lived experiences involving a certain phenomenon (cf. Kvale, 1996; Stroebe et al., 2003).

The design was interactive with respect to the data derived from the questionnaires at T1 and was used to develop a theme guide for the interviews, in which the main theme was the informants’ own detailed description of the experiences and situation. Data collected in the interviews were then used to further develop the questionnaires at T3 and elaborate on topics discovered in the interviews. Preliminary findings from the interviews then influenced the quantitative data collection at T3, as new questions were included in the questionnaires. The mixing of methods was done primarily in relation to the interpretation of the results and the writing of the papers, during which the different results were used to complement each other.

4.3 Study design

The present study had a longitudinal mixed methods design. The merging of both quantitative and qualitative data provided knowledge on the long-term effects of complicated grief in bereaved friends, as well as more in-depth descriptions of their individual experiences of the loss. In addition to the bereavement process of bereaved friends, there was a focus on additional stressors related to the loss, the relationship with the deceased, received help and support, and functioning at school or work. The key features of the study design is outlined in Table 1.

Table 1. The key features of the study design.

The study is prospective and non-experimental, with the following key features:

Data:	- Quantitative data (questionnaires) and qualitative data (in-depth interviews)
Data collection:	- Three time points <ul style="list-style-type: none"> o T1 (19 months post-loss) o T2 (28 months post-loss) o T3 (40 months post-loss)
	- Quantitative data were collected at all time points (T1, T2 and T3) and qualitative data were collected at T2
Population:	- Unknown, but estimated to N= approximately 200 individuals
Recruitment:	- Four to six of the closest friends of the deceased
Inclusion criteria:	- Identified as close friends by parents and siblings of the deceased
	- Males and females > 16 years old
	- From all areas of Norway
Exclusion criteria:	- Was on Utøya on July 22 nd 2011
	- Non-Norwegian citizens

4.3.1 Project plan, execution and cooperation

This study was part of a larger longitudinal project called “Bereaved parents, siblings and friends after Utøya, July 22nd 2011”, which was conducted at CCP. The preparations for the study started in 2012 with the drafting of a project description and applications for funding and ethical approval, while the project period ran from 2013 to 2016. The sub-study on bereaved friends was assigned to Iren Johnsen for the purposes of her studying to a PhD, and conducted in the period from April 2013 to March 2016.

The main project had an administrative leader (Unni Heltne, Director of CCP), a project leader, a project group and an advisory board. The members of the project group contributed to the project in terms of different remits and responsibilities. The project leader of the main project, Professor, PhD Kari Dyregrov, was also the main supervisor for the PhD candidate, while Professor, PhD Stig Berge Matthiesen and Professor, PhD Jon Christian Laberg acted as co-supervisors. Other members of the project group were PhD Pål Kristensen and Professor, PhD Atle Dyregrov. Meanwhile, Professor, PhD Thormod Idsøe and PhD Rolf

Gjestad had a special counseling responsibility in terms of the analyses of the quantitative data in the project, whereas Kari Dyregrov had a similar responsibility for the qualitative data. Although Kari Dyregrov, Pål Kristensen and Iren Johnsen had the responsibility for each of the three sub-studies (friends, parents and siblings, respectively), they worked closely together, holding regular meetings and discussions throughout the project period.

The advisory board consisted of leading Norwegian and international experts in the grief and trauma field, who contributed into the project with advice, discussions and input throughout the project period by email as well as annual seminars. The advisory board consisted of the following members: Professor, PhD Salli Saari (Student Health Service, Helsinki, Finland), Professor emeritus, PhD William Yule (Institute of Psychiatry, London, UK), Professor, PhD Margaret Stroebe (University of Utrecht, The Netherlands), Professor, PhD Henk Schut (University of Utrecht, The Netherlands), Tron Svagård (Modum Bad), Trond Blattmann, (National Support Group (NSG) after July 22nd 2011), Beate Vatndal (NSG), Professor, PhD Siri Thoresen (Norwegian Center for Violence and Traumatic Stress Studies (NKVTS)) and Nils Olav Refsdal (National Ethical Committees).

4.3.2 Recruitment

In the initial recruitment period, public records of the deceased after the Utøya-attacks on July 22nd 2011, were matched with lists of next of kin from the National Population Register. Bereaved after 67 of the 69 persons killed on Utøya on July 22nd 2011, were eligible for inclusion in the study (two were foreign citizens and excluded due to communication issues and the need to modify the questionnaires). Delays due to a lack of funding and ethical approval meant that recruitment could not start until February 2013.

In addition to participating in the study themselves, family members (parents and siblings) of the deceased were asked to recruit four to six of the closest friends of the deceased by forwarding them information letters about the study (with consent letters). Families were also asked to make use of others who knew the deceased well, in order to identify the respective deceased's closest friends. Once bereaved friends who wanted to participate in the study submitted their informed consent, they received a questionnaire by mail or by e-mail (with a link to the Survey Monkey online survey tool). The informed consent was related to both the questionnaire and the interview parts of the study. In the information letter, participants were

informed that a theoretical sample of approximately 15 individuals would be drawn from those who agreed to be interviewed.

4.3.3 Data collection

Quantitative data and instruments

Participants filled out questionnaires at three time points (T1 – 19 months post-loss, T2 – 28 months post-loss, and T3 – 40 months post-loss). Re-administering questionnaires at three time points ensured that both the relationships between variables and change over time were measured. Informants were given a 10-page questionnaire (see Appendix), which mapped an extensive amount of information. The first part of the questionnaires was developed at CCP and included questions that mapped sociodemographic (e.g., age and gender) and loss-related questions. Bereaved friends were also asked to report on other aspects of their experiences after the loss, such as school or work performance and absence, received and wanted help from professionals, support and help from their social network, and the impact of media exposure and the trial.

The second part of the questionnaires consisted of the following standardized instruments, which mapped different aspects of the experiences of the loss. Questionnaires that were used in the papers included in the thesis are described in the following.

The Inventory of Complicated Grief (ICG-19) was used to measure maladaptive symptoms of loss and to predict complicated grief and long-term dysfunction (Prigerson et al., 1995). The instrument includes questions on e.g., preoccupation with thoughts of the deceased, searching and yearning for the deceased, disbelief about the death, crying, being stunned by the death, and not accepting the death. The focus is on problematic adaptation to loss, concentrating on distinctive symptoms of complicated grief and bereavement-related distress (Neimeyer, Hogan, & Laurie, 2008; Prigerson et al., 1995). ICG-19 is shown to measure an underlying construct of complicated grief, and respondents with high scores are significantly more impaired in social, general, mental and physical health functioning and bodily pain compared to respondents with lower scores (Prigerson et al., 1995). ICG-19 was chosen for this study because it is a valid instrument that is extensively used in studies of complicated grief. This enables comparison of the results with multiple other studies, including previous studies

conducted at CCP. The instrument consists of 19 items, with a five-point scale (scored 0-1-2-3-4) ranging from “Never” to “Always”. A recommended cut-off point of 25 was used to distinguish participants with normal grief from those with more complicated reactions (Prigerson et al., 1995). It should be mentioned that some researchers (e.g., Shear, 2015) argue that a more conservative cut-off level of 30 should be used, instead of the 25-point threshold, in order to better identify the bereaved with complicated grief reactions after traumatic deaths and avoid overdiagnosis. Cronbach’s alpha varied between 0.88 and 0.93 (T1-T3).

The Impact of Event Scale Revised (IES-22 R) was chosen for the study because it measures the subjective response to specific traumatic events and current levels of posttraumatic stress reactions (D. S. Weiss, 2007). The development of the instrument is built on a study comparing the bereaved with traumatic grief and the bereaved who were adjusting normally (D. S. Weiss & Marmar, 1997). The instrument includes questions on e.g., reminders of the event, feelings and emotional reactions, as well as physical reactions and activation. The instrument has three subscales, which measure the key elements of PTSD according to the DSM-4: Intrusion (re-experiencing, intrusive feelings and images); Avoidance (numbness, avoidance of feelings and situations); and Hyperarousal (irritability and hyper vigilance). The IES-22 R consists of 22 items with a five-point scale (scored 0-1-2-3-4) ranging from “Not at all” to “Extremely”. A cut-off level of 34 on the total score is indicative of a PTSD diagnosis and, although there is no cut-off threshold recommended for each of the subscales, higher scores denote a higher symptom level (Morina, Ehring, & Priebe, 2013). Cronbach’s alpha varied between 0.92 and 0.94 (T1-T3).

The General Health Questionnaire (GHQ-12) was used in the study to assess the current state of mental health among the bereaved, and includes questions on e.g., the level of general psychological distress, as well as the inability to carry out normal functions (Goldberg & Williams, 1988). GHQ-12 focuses on breaks in normal functioning, rather than lifelong traits. The instrument measures two major classes of phenomena: the inability to continue to carry out one’s normal “healthy” functions and the appearance of new phenomena of a distressing nature. The usual way of scoring GHQ when used for case identification (cut-off scores) is 0-0-1-1. However, when using the mean scores, there are marginal advantages (a less skewed score) in scoring these 0-1-2-3. The instrument consists of 12 items, each rated on a four-point scale. A cut-off score of three or higher indicates psychological distress (Makowska,

Merecz, Moscicka, & Kolasa, 2002). In the present study, two questions on suicide ideation from GHQ-28 (items 25 and 28) were also included in the GHQ item pool. Cronbach's alpha was 0.84 for T1 scores¹.

The Work and Social Adjustment Scale (WSAS) was used to measure functional impairment attributable to the loss (Mundt, Marks, Shear, & Greist, 2002). The instrument includes questions that measures e.g. the ability to work, maintain housework and participate in social engagements. This is a five-item instrument, with a scale (scored 0-8) ranging from "Not at all" to "Very severely". According to Mundt et al. (2002), a WSAS score above 20 suggests functional impairment that is moderately severe or worse, whereas scores between 10 and 20 are associated with significant functional impairment but less severe clinical symptomatology. Scores below 10 appear to be associated with subclinical populations. Cronbach's alpha was 0.85 for T1 scores.

The Rumination Scale (RS) was chosen since it measures ruminative thoughts associated with the loss (van der Houwen et al., 2010). The instrument includes questions that measures e.g. thoughts on reactions to the loss, feelings of guilt, and blame (self and others). This is an eight-item instrument, with a five-point scale (scored 1-5), ranging from "Almost never" to "Almost constantly". Item ratings are summed to form a single score with no cut-off, in which higher sum scores are indicative of a ruminative coping style. RS was only measured at T2 and T3. Cronbach's alpha was 0.84 and 0.86 (T2-T3).

Qualitative data

In-depth interviews were considered the most appropriate method to generate a phenomenological-based understanding of the grief of the bereaved friends. Thirteen in-depth interviews were conducted by the PhD candidate at T2, about 28 months after the loss. The sample was drawn from the total sample of bereaved friends participating at T1, with variation and breadth according to age, gender and geography chosen as the criteria for sampling. The interviews took place either in the informants' homes or at a place of their choosing, with all of the interviews audiotaped. Each interview lasted approximately two to

¹ Cronbach's Alpha is only given for the time points that the instruments were used in the papers.

two and a half hours (range=1.5 to 3.0 hours). The interviews were then transcribed verbatim by an independent transcriber with a background as a medical secretary.

The in-depth interviews were semi-structured, and the use of a theme guide (14 questions) ensured that certain subjects were addressed systematically. The main topics of the interview guide were: (a) friends' experiences of the loss, and how it had affected their life, (b) circumstances concerning the death and how this had affected their grief, (c) help and support after the loss, (d) functioning at school or work, and (e) self-coping. For each theme, the interview guide included sub-themes that might possibly be relevant to follow-up questions during the interviews, e.g., if they had experienced reminders, or what was the most valued help and support. However, first and foremost, the interview method required that the researcher follow up on the thoughts and reflections of the interviewee. As it was important to allow the friends to generate their own stories during interviews, the interview guide was used as a starting point with follow-up questions depending on how the individual interviews developed.

4.3.4 Sample

A unique sample of young adults who all lost a close friend to a traumatic death is presented in the case of the killings on Utøya on July 22nd 2011. One can assume that, in addition to all the bereaved family members, each of the deceased had at least four to six very close friends (including sweethearts). This means that several hundred young adults and adolescents lost a close friend.

Friends representing 34 of the 67 deceased (51%) filled out questionnaires. Demographic and loss-related variables are presented in Table 2. Although age varied between 15 and 41 years (mean = 20.72, SD = 4.96), participants were defined as young adults since 92% of the sample were between the ages of 15 and 29 years (cf. Herberman Mash, Fullerton, & Ursano, 2013). The age range was wide because friends of both the youths and the few adults who were killed on Utøya were included. The mean of the self-reported evaluation of the closeness of the relationship ("How close did you feel to the deceased?") was 8.89 on a scale from 1 to 10 (min=5, max=10, SD=1.20, N=71).

Table 2. Demographic and loss-related variables for the quantitative and qualitative samples.

		Quantitative sample	Qualitative sample
		% (<i>n</i>)	% (<i>n</i>)
N		88	13
Age		Mean=20.72	Mean=21.77
		Range=15-41	Range=18-31
		SD = 4.96	SD=3.70
Gender	Male	24 (21)	38 (5)
	Female	76 (67)	62 (8)
Loss	Male friend	43 (38)	54 (7)
	Female friend	53 (47)	39 (5)
	Girlfriend/boyfriend	4 (3)	7 (1)
Male losses	Male friend	76 (16)	80 (4)
	Female friend	19 (4)	0
	Girlfriend/boyfriend	5 (1)	20 (1)
Female losses	Male friend	33 (22)	38 (3)
	Female friend	64 (43)	62 (5)
	Girlfriend/boyfriend	3 (2)	0

4.3.5 Analyses

Both quantitative and qualitative data were analyzed in this study. While Papers I and III focus on the quantitative data, the qualitative data are the focus of Paper II.

Quantitative analyses (Papers I & III)

The quantitative data from the questionnaires were punched into an overall data set. SPSS 21 was used to perform both descriptive and more advanced statistical analyses, such as correlations and regression analyses, on the data. Linear mixed modeling, using Mplus 7.3 (Muthén & Muthén, 1998-2015), was then used to explore long-term effects and to adjust for potential cluster effects for subjects who knew the same victim. In addition to exploring the

data at an individual and a group level at the different time points, advanced statistics made it possible to explore change over time and relationships between the variables.

In Paper I, predictor variables (e.g., demographic variables, media exposure, symptom levels and the need for help) were analyzed with regard to outcome variables (e.g., complicated grief reactions and functional impairment at school or work) at the first time point (T1). For Paper I, descriptive analyses were conducted to assess the level of complicated grief for the bereaved friends, as well as measures reflecting function in school or work, received help and additional stressors, such as media exposure. Correlations and t-tests were then used to assess the possible links between trauma, grief, functional impairment, general psychological distress and the felt need for help, in addition to gender differences.

In Paper III, the focus was on exploring long-term effects. Complicated grief reactions were the main outcome for the analyses, while scores on avoidant behavior and ruminative thoughts were used to explain the high levels of complicated grief reactions. Descriptive analyses and correlations were conducted on symptom measures at the different time points, while t-tests were conducted to test for gender differences. Linear mixed modeling was then used to examine variation and change over time, as well as test for mediating effects of avoidant behavior and ruminative thoughts on complicated grief. A latent growth model was used to investigate change over time (T1-T3) and inter-individual variability for this change (growth parameters, initial status and relation with time varying and time invariant covariates), while a piecewise growth curve model was used to analyze the relationship between IES Avoidance and ICG (with parallel change factors), with RS as a mediator (Muthén & Muthén, 1998-2015). The sample size, however, was too small in order to investigate the role of gender as a moderator of the effects of avoidant behavior and ruminative thoughts on complicated grief. The piecewise growth curve model was chosen since the data did not fit a linear trajectory model (Bollen & Curran, 2006), where one linear change factor describes the level and change from T1 to T2, and another factor describes the change from T2 to T3. For the piecewise growth curve model, the maximum likelihood with robust standard errors (MLR) was used, which is robust for non-normal data (Kline, 2010). Type=complex command was used in order to obtain unbiased standard errors in case of clustered data (Muthén & Muthén, 1998-2015). Factor loadings that were not significant were restrained to 1. Goodness of fit indices were; chi-square with significance test, the comparative fit index (CFI), Tucker-Lewis Index (TLI) and the Root Mean Square Error of

Approximation (RMSEA) with confidence intervals in order to evaluate the model fit. CFI and NNFI should equal 0.95 or higher, while the RMSEA should not exceed 0.08 or preferably 0.05 (Bollen & Curran, 2006; Wang & Wang, 2012).

Qualitative analyses (Paper II)

In Paper II, the focus was to identify the distinctiveness of bereaved friends' grief and how young adults experienced the loss of a close friend. This was done by exploring what characterizes this grief and the bereaved friends' individual experiences of the loss through in-depth interviews.

Interpretative Phenomenological Analyses (IPA) was used on the data (Smith, 2004), and the interviews analyzed according to Kvale's (1996) stepwise analysis for qualitative data. This method begins with reading and re-reading to acquire an overall impression and overview of the data. Thereafter, a) the meaning units in each interview that deal with the research questions are identified and b) condensed in order to select and define c) categories and d) the main themes. After specifying the main themes, the analyzed material is e) interpreted in relation to the relevant theory and previous research. NVivo was used since this qualitative statistical tool is able to handle a large amount of data in order to categorize and organize the themes that unfold.

Imputation of missing data

In an effort to reduce the number of missing cases and obtain sum and cut-off scores on the symptom measures for all informants, missing values for the instruments were imputed in the quantitative data set. There was not an extensive amount of missing in the data set, but this was considered the best method for handling missing data, as other methods (such as listwise deletion or replacing with mean scores) will lead to a loss of variance. Multiple Imputation (MI) may be used if missingness to some degree deviates from the missing at random (MAR) assumption, indicating some degree of missing not at random (MNAR) (Schafer & Graham, 2002). As this was the case for these data, MI in SPSS 21 (Rubin, 1996; Schafer & Graham, 2002) was considered the best method to handle missing values in the data set. A set of

predictors that could predict a score on the specific variable was used to generate imputed values for missing data. The SPSS MI syntax was set up to give integer values in order to keep the variables at an ordinal level (SPSS, 2007). The imputed data sets were then aggregated in order to end up with one data set, before sum and cut-off scores on the symptom measures were recalculated.

4.3.6 Ethical considerations

Since 1998, CCP has conducted a series of studies on grief following traumatic deaths and has a long experience of addressing sensitive issues. Based on previous research on populations bereaved by potentially traumatizing deaths, a careful and respectful approach was strongly emphasized (K. Dyregrov, 2004; K. Dyregrov et al., 2011). In accordance with this, humility and respect for the difficult time experienced by the participants were emphasized throughout the research process. Care, tact and adequate information were important, and the bereaved friends were informed about their rights and about the project's principal purpose and implementation. Every stage of the research was carried out in a very sensitive and careful way, showing deep respect for the possible pain experienced by the bereaved. The project was approved by the Regional Committees for Medical and Health Research Ethics (REK) in Norway. A consent form followed the information letters, with informants explicitly informed of their rights to withdraw from the project at any time. If anyone felt the need for more professional help, CCP offered to assist in making contact with helpers. Claims to anonymity and confidentiality followed the Helsinki Declaration throughout the research process.

Although experienced as painful, previous research on bereaved populations' participation in research has shown that they experience it as very meaningful. Provided that ethical considerations are followed, bereaved people do not seem to regret participation, because it gives a kind of meaning to the meaninglessness if they can help others in the future by participating and, in turn, adding knowledge to the field (K. Dyregrov, 2004). The bereaved are, therefore, very concerned that others learn from their situation. A large majority also report a "therapeutic effect" as a result of their interview participation, if given the opportunity to review the incident again with professionals with expertise in the field (A. S. Cook & Bosley, 1995; K. Dyregrov, 2004; K. Dyregrov et al., 2011).

5 Results

5.1 Psychosocial functioning after losing a close friend (Paper I)

The first paper explored bereaved friends' situation at T1 (1.5 years post-loss), with a focus on grief and trauma reactions, psychosocial functioning and psychological distress. The aim was to explore whether risk factors for complicated grief and other problems after traumatic deaths also applied to bereaved friends. The sample consisted of 76 persons (22% were male, $n=17$; and 78% were female, $n=59$), with a mean age of 20.72 (range=15-41 years; $SD=4.96$).

The friends reported elevated levels on all symptom measures, with as many as 83% ($n = 63$) scoring above the cut-off on ICG, implying a risk for complicated grief reactions. On trauma reactions (IES-22 R), 68% ($n=52$) scored above the cut-off; meanwhile, for psychological distress (GHQ), 71% scored above the cut-off. On functional impairment (WSAS), 25% ($n=19$) scored above 20 (moderately severe or worse functional impairment). In addition, 36% ($n=27$) scored between 10 and 20 (significant, but less severe, functional impairment). The majority of the friends reported absence from school or work because of the loss, as well as lower school grades or impaired work performance. School or work tasks felt more demanding than before for many of them. Bereaved friends experienced a high intake of news about the event and especially found the media coverage of the event stressful. As for help, 68% ($n=52$) of the friends felt the need for help from public welfare services to some extent after the loss, but only about half of them received any help. Most of the friends also had to make contact with the support services themselves. More experienced need for help was correlated ($p<.001$) with increased levels of trauma reactions, complicated grief, psychological distress, functional impairment and absence from school or work. Significant gender differences ($p<.05$) were found for all symptom measures other than WSAS, stress concerning the media and the trial, and need for help, with females scoring higher than males.

These results show that the bereaved friends, especially females, had elevated levels of both grief and trauma reactions, which seemed to affect their functioning and ability to study or work. The implication that can be drawn from the findings is that a broader perspective about whom is affected when someone dies should be enhanced. An increased recognition of grief after the loss of a friend should be adapted.

5.2 The bereavement process of young adults after the loss of a close friend (Paper II)

The second paper explored the qualitative data, with a focus on the phenomenological knowledge of friends' bereavement processes. The aim was to explore young adults' experiences following the loss of a close friend in terms of how they processed the loss, how the grief was influenced by the circumstances concerning the death, what characterized their grief and their main struggles. The interview sample consisted of 13 young adults: eight females and five males, with a mean age of 21.77 years of age (range: 18-31 years, $SD=3.70$). Three themes in particular were identified from the analyses of the interviews: how circumstances of the event interfered with the grieving process and acceptance of the loss, the daily experiences of the loss and adjustment to it, and the recognition of friends as bereaved.

For many of the friends, their grief was influenced by the circumstances concerning the killings. Most of the bereaved friends felt that the way in which the deaths happened and the attention placed on the event afterwards constituted a major disturbance in their processing of the loss. Furthermore, many of the friends described the killings as being "two separate events" (the loss and the incident), which were difficult either to unite or to separate. The way that the killings mobilized the whole of society was explained as being both positive and negative by the close friends. The fact that their friend's death was caused by a deliberate and evil act caused many of the friends to experience problems with accepting the loss, and many of them were angry, for instance, with the police. Some were also preoccupied with thoughts on how the deaths could have been prevented. The closeness of the relationships that the bereaved friends had had with the deceased was a major theme throughout all of the interviews. For the most part, they missed the closeness and feeling of mutual understanding in the relationship, with many of the bereaved friends describing feelings of loneliness and emptiness in their daily lives. Some of the friends were treated in a good manner and had received a lot of support from the people around them. However, a majority of the sample felt that people in their surroundings, in addition to professional helpers, did not fully include them in the group of the affected when they talked about this event. In some ways, they "felt forgotten" and "outside the circle" of entitled grievers.

The results from this paper show that the loss of a close friend had a profound effect on the young people in this sample, and that the loss of a friend is a distinct loss that hard to compare to other losses. In the opinion of these young adults, they suffered the significant loss of an

irreplaceable person, but they were referred to (and consequently also labeled themselves) as “only a friend” when confronted with others’ expectations and attitudes.

5.3 Long-term reactions to the loss of a close friend (Paper III)

The third paper focused on the long-term effects of the loss, the duration of complicated grief over time and how this was affected by avoidant behavior and rumination. The sample consisted of 88 persons, of which 76% (n=67) were female and 24% (n=21) were male.

Bereaved friends reported high levels on all the symptom measures, complicated grief (ICG), avoidant behavior (IES Avoidance) and rumination (RS), across the time points (T1-T3). Females reported higher scores than males on ICG, IES Avoidance and RS, and there was a significantly ($p < .05$) higher percentage of females scoring above the cut-off level of 25, across time points, for ICG. A latent growth model, measuring changes in ICG, IES Avoidance and RS, showed significant variance for all symptom measures at T1 and for change over time, indicating individual differences both at T1, and around the mean changes. There was also a significant decrease for all symptom measures across time, except for IES Avoidance and RS between T1 and T2. Significant negative correlations between T1 and the change factors showed that individuals with high T1 scores on ICG and IES Avoidance had the most reduction in symptoms between T1 and T2, while those who saw the most reduction between T1 and T2 were most probably those who saw the least reduction between T2 and T3. A piecewise growth curve model showed that changes in avoidant behavior affected changes in complicated grief, and ruminative thoughts mediated the relationship between avoidant behavior and complicated grief. High levels of IES Avoidance across time points increased the risk of high ICG scores at T3, indicating that more avoidance was linked to a more negative outcome. In addition, high RS scores at T2 predicted high ICG scores at T3, while there was an indirect effect via RS scores at T2 of IES Avoidance at T1.

The results from this last paper confirms that bereaved friends were heavily impacted by the loss. Symptom levels decrease over time, but avoidant behavior and rumination contribute to a slower decrease.

6 Discussion

6.1 Methodological discussion

The mixed methods approach is particularly useful in health research, since the studies of complex phenomena need a broad range of perspectives (Curry et al., 2009; Ostlund et al., 2011; Stroebe et al., 2003). Methodological techniques have also expanded to enable more sophisticated analyses of grieving (Stroebe et al., 2003). Since neither quantitative nor qualitative methods were considered suitable as the sole method, the present study involved both quantitative data collected via questionnaires and qualitative data from in-depth interviews. The use of questionnaires made it possible to measure friends' grief over time with easily comparable and objective data. In the bereavement field, it is difficult to obtain information on psychological processes or state variables, and a limitation of standardized questionnaires and instruments is that important dimensions of grief and grieving may be left out if certain topics are not included in the questionnaire (Stroebe et al., 2003). However, the use of interviews in this study made it possible to provide a more in-depth understanding of the friends' situation. Qualitative methods are well-suited to examining the distinctiveness of phenomena, understanding complex individual and social processes and unique meanings that underlie the grief reactions, as well as capturing essential aspects of a phenomenon from the perspective of study participants (Curry et al., 2009). A limitation with qualitative methods, however, is that they are time-consuming and expensive, thereby constraining the number of respondents that can be examined (Stroebe et al., 2003). Meanwhile, qualitative research is sometimes seen as deficient because of the personal interpretations made by the researcher, which means that it is difficult to generalize the findings to a large group because of the specific content or the limited number of participants studied (Creswell & Plano Clark, 2011).

As for all the methods used in research, it is essential to keep the discussion open about the use and definition of mixed methods, and researchers should clearly describe their use of the approach and the conclusions made in order to improve transparency and quality (Ostlund et al., 2011; Tashakkori & Creswell, 2007). It has been argued that a characteristic of truly mixed methods studies involves integration of the qualitative and quantitative findings at some stage in the research process, whether during data collection, analysis or at the interpretative stage (Kroll & Neri, 2009). The present study used fixed embedded mixed

methods with an interactive design (cf. Creswell & Plano Clark, 2011). Preliminary analyses of the quantitative data from questionnaires assembled at T1 were used as a basis for designing the interview guide for the in-depth interviews at T2. After conducting the interviews, preliminary analyses of the qualitative data were then used to influence the questions and instruments that were included in the questionnaires at T3. The purpose of mixing qualitative and quantitative methods should be clear in order to determine how the analytic techniques relate to one another and how, if at all, the findings should be integrated (Ostlund et al., 2011; see also O'Cathain et al., 2007; Onwuegbuzie & Teddlie, 2003).

Discussion of ethical principles concerning methodology

In the bereavement field, there is now a greater awareness of ethical matters. Prior to starting a research project, the researcher must become fully acquainted with both methodological and ethical guidelines and principles regarding factors, such as potential risks and benefits, recruitment, timing of the research and the qualifications of the researcher (A. S. Cook, 2001; Stroebe et al., 2003). On the one hand, research decisions are affected by the research issue and methods, the population, level of analyses (individual, family, group) and the researcher's competence and background. On the other hand, decisions are affected by ethical guidelines, literature, decisions from ethical committees and advice from colleagues (A. S. Cook, 2001).

One of the most basic ethical principles is that the researcher must protect the rights, dignity and well-being of participants. The research design must emphasize developing knowledge that is useful for society and, at the same time, minimize the research-induced stress and negative consequences for the participants. This balance is especially important in bereavement research, since those who are bereaved after traumatic deaths are often considered to be a vulnerable group. The researcher must approach this group in a particularly careful and thoughtful way in order to prevent the possibility that participating could provoke memories and pain (Stroebe et al., 2003). As The PhD candidate conducted all of the interviews herself, it was possible to pay extra attention to the informants who struggled throughout the interviews, as well to provide advice and tips if they had reactions that they wanted to discuss. However, this was not possible for the questionnaire part of the study. There must also be adequate procedures in place should a participant become distressed after sharing his/her emotions in the context of a study (Stroebe et al., 2003). A backup system of

professional help was ensured by informing the participants that, if they felt the need for help, CCP could assist in making contact with help services.

Confidentiality in the study was secured in accordance with ethical guidelines by keeping the identification lists in a locked cabinet at all times, separate from the data file. Only the project group had access to the lists. Confidentiality issues are easier to ensure in quantitative research than in qualitative research, since the issue is more about objectifying the individual and quantifying the data. In qualitative research, the informants must trust that no one from the outside can identify them when they reveal their inner feelings and experiences.

Transcriptions of the interviews were conducted by a medical secretary with no access to the identification lists. All interview quotes used in papers and other types of presentations were further de-identified and anonymized.

When it comes to recruitment, large samples increase the generalizability in quantitative research. For research on bereaved, it can be extra challenging to gain access to informants, since registers of the bereaved often either do not exist or are confidential. In the present study, publicly available lists of the deceased after the Utøya-attacks were matched with lists of next of kin through the National Population Register. Subsequently, parents and siblings were invited to recruit close friends of the deceased. The interview participants were recruited from among those who agreed to participate. In bereavement research, grief reactions and participation decisions are likely to be closely related, such as choosing to participate as a way of coming to terms with the loss, hoping to contribute to further understanding for bereaved persons as a group, or refusing because they want to move on or fear that participation might increase their grief (Stroebe et al., 2003). The decisions of the bereaved who either chose or refuse to participate in a research study, however, must be respected. To safeguard the bereaved, informants in this study received a detailed information letter, explaining all important issues of the project, and an informed consent form that they had to sign. They were also informed that they could withdraw from the study at any time, without any consequences.

Timing is important in bereavement research. As great variation can be seen regarding the time interval, different bereavement researchers decide in advance when it is most appropriate to distribute their questionnaires to the bereaved target group (Stroebe et al., 2003). In order to respect the bereaved, it is considered unethical to approach them immediately after the death, around anniversaries or during holidays. Correspondingly, questionnaires were not distributed around the anniversaries of the killings nor the Christmas period.

As for the qualifications of the researcher, it is important to be aware of ethics and methods, human nature and values, as well as possess a basic knowledge of the research topic and have empathy for others' pain (A. S. Cook, 2001; Kvale, 1996). It is also important to note that interviews, in which the bereaved person describes their loss, may have a therapeutic effect, which in turn may influence the very process of the study (Stroebe et al., 2003). Especially in the interview part of this study, many of the informants declared that talking about their experiences made them reflect on their reactions. As PhD candidate was relatively "new" to bereavement research, carrying out the interviews was challenging. Thus, it was reassuring to be able to get advice from, and discuss this with the supervisors and the rest of the project group.

6.2 Discussion of main findings

The main findings from this study are that bereaved friends are highly impacted by the loss of their friend and struggle with complicated grief, trauma reactions, functional impairment and general distress after the loss. A combination of factors (cf. Figure 1), such as the closeness in the relationship and the lack of recognition of a friend's grief, the Utøya terror incident itself and its combination of tragic loss and very traumatic circumstances, and the wanted and received help and support, were assumed to affect the grieving process for the bereaved friends. These factors constitute possible explanations for the high symptom level found in this sample. In the following, the contextual factors will be discussed with regard to the results.

6.2.1 Young adults are highly affected by losing a close friend

One possible explanation for the high level of grief reactions could be the close relationships these young adults had with their deceased friends (cf. Figure 1). Both the quantitative and qualitative findings supported this (Papers I, II & III). The way the relationships with the deceased friends were described by the young adults during the qualitative interviews, suggests that these were very important relations, and that the loss had a profound effect on their lives. They described the relationships as being nothing like they have ever had with

someone else – they had lost their confidant and the person with whom they shared their problems and spent time (Paper II). Closeness in the relationships was also measured in the questionnaires, and on a scale from 1 to 10, the mean score of the self-reported perceived closeness in the relationship to the deceased was 9 (Paper III). Many studies state the important role that friends play in our lives and how having friends promotes well-being and feelings of being included (e.g., De Goede et al., 2009; Way & Greene, 2006). In addition, friends provide an individual with a sense of belonging to, and shared meaning with, a community of like-minded people, who provide support and enable choices that facilitate growth and development in a way that family members cannot (Fowlkes, 1990). Friends are important to all human beings, especially for adolescents and young adults who invest a lot of energy in being included in a group (Coleman, 2011). Friendship is also important for development and identity formation in adolescence and young adulthood (Hartup, 2001; Parker et al., 2012; Way & Greene, 2006; Wilkinson, 2010), with several studies documenting that friendships become more supportive, reciprocal and comforting in this period of life (e.g., Helsen et al., 2000; Markiewicz et al., 2006). Through the normative developmental patterns and different stages of adolescence and young adulthood, attachment is important and different attachment figures may have different potential functions (Markiewicz et al., 2006).

In the interviews with the bereaved friends, feelings of loneliness and emptiness were apparent; they felt that they had no one they could turn to nor spend time with (Paper II). According to Demir, Özen, Doğan, Bilyk, and Tyrell (2010), positive friendship experiences, such as going to a concert, disclosing innermost wishes, asking for help or advice, watching a movie on a Friday night or simply spending time together, make an individual feel that he/she is special to their friend and cared about. Wilkinson (2010) highlights the importance of best friends, in comparison to peers, and the influence of such a relationship on a young person's psychological adjustment. In line with this, bereaved friends in the study sample expressed that, although they had other friends, they had now lost their best friend, a role that was especially hard to fill (Paper II). Continuing bonds may cause problems with grief processing (Keesee et al., 2008). It is evident that the loss of a close friend, as in this study, especially affects young people in their daily life and social settings, and it was in those everyday situations where their friend's absence was most apparent. In particular, the bereaved friends pointed to the everyday reminders of the loss (Paper II). Servaty-Seib and Pistole (2006-2007) found that adolescents experienced higher grief intensity in relation to the death of a friend vs. a grandparent, suggesting that this may be explained by the mutual benefits of adolescent

friendships, the unexpectedness of the loss, daily life reminders of the person (e.g., at school), or interactions, functions and support associated with the friend.

Previously, it has also been found that the loss of a friend can lead to more traumatic grief than the loss of an extended family member (Holland & Neimeyer, 2011; Pfefferbaum et al., 2000; Ringler & Hayden, 2000; Servaty-Seib & Pistole, 2006-2007). When compared with the scores of close family members in this study (parents and siblings), the severity of friends' reactions was evident. Equal high scores, and sometimes even higher scores, were found for bereaved friends one and a half years after the killings on Utøya, especially in terms of complicated grief (Paper I; K. Dyregrov, Dyregrov et al., 2014), with 83% of the friends in the risk zone for complicated grief, compared to 82% of parents and 75% of siblings. For trauma reactions implying the risk of problems comparable to a PTSD diagnosis, 68% of the friends scored above the cut-off, compared to 61% of parents and 72% of siblings. The importance of friendships during adolescence and young adulthood ought to predict that losing a close friend at this age would be especially difficult (Johnson, 2012; Malone, 2012; Ringler & Hayden, 2000).

6.2.2 Grief processing was complicated by trauma reactions

The bereaved friends in this sample had high scores for both complicated grief and trauma reactions. Several of the risk factors for complicated grief were present for this sample, and a second explanation for the high symptom severity in bereaved friends could be the additional stressors associated with these losses (cf. Figure 1), such as the brutality of the killings, the unexpectedness of the event and the constant reminders long after the event (cf. Hardison et al., 2005; Lobb et al., 2010; Nakajima et al., 2012).

Risk factors for complicated grief reactions are well documented for family members, but may also apply to bereaved friends (Paper I). In addition, various external stressors, such as exposure to the mass media, social stigma and legal procedures, may affect the prevalence of complicated grief following a violent death (Nakajima et al., 2012). High scores for complicated grief and trauma reactions are also found in other studies that have explored reactions to mass killings, but not to the degree that is found in this study (Nakajima et al., 2012; Shear et al., 2011; Neria et al., 2008). In a study of the bereaved after the 9/11 attacks in the USA (where the sample included the bereaved of both family members and non-family),

43% of the bereaved screened positive for current complicated grief two and a half to three and a half years after the attacks (Neria et al., 2007). Among the bereaved with complicated grief, the study also found a high prevalence of PTSD (43%), which was related to the traumatic loss rather than to trauma exposure. Neria et al. (2007) suggest that the high prevalence of bereavement-related PTSD after the 9/11 attacks could be explained by the unprecedented nature of the events, where the burden of the loss was increased by the massive violence of the event. Similarly, the events of July 22nd 2011 was totally unexpected and not comparable with anything that had previously happened in Norway.

The interview sample was interviewed shortly after the conclusion of the trial and at a time when the July 22nd terror attack continued to be mentioned regularly in the media (Paper II). This might have contributed to reminders and intrusive images still being quite present in informants' minds, thereby explaining why the circumstances of the death of their friend died were still occupying their thoughts. The media exposure with its almost constant reminders of the trauma may have made it more difficult for them to process the loss, as it may be troublesome to grieve over someone without being vividly reminded of how he or she was killed. The media may reduce uncertainty about what happened, but the intense media coverage, where the event is kept active and alive, may also add to friends' symptom levels and affect their wellbeing (Ahern et al., 2004; Holman et al., 2014). Many of those interviewed reported that they tried to limit their exposure to the media coverage, but the questionnaire scores generally reflected a high intake of news, especially in the immediate aftermath of the incident. As previously mentioned, the Utøya tragedy was a news topic for a long time after the event, with more than 132,000 references made in the Norwegian media during the first one and a half years. The media pressure was especially high, for example, throughout the trial. The association between posttraumatic stress and media exposure was also found after the 9/11 attacks (Ahern et al., 2004), as well as after the Boston Marathon bombing (Comer et al., 2014). Although the friends were more affected by the media attention than parents and siblings after the killings on Utøya on July 22nd 2011 (Paper I; Kristensen et al., 2016), some of the friends had managed to shield themselves from the media attention.

Accepting the reality of their loss is one task the bereaved are confronted with when a loved one dies (Kersting & Kroger, 2010; Kübler-Ross, 1969), and according to Prigerson and Maciejewski (2008), acceptance of the loss seems to correspond with a decline in grief-related

distress. When looking at the scores for the single items on the ICG-19 and the IES-22 R, the bereaved friends had especially high scores in relation to longing and not being able to accept the loss, together with feelings of unreality and traumatic reminders. The trauma associated with the killings influenced the grieving process of the bereaved friends in this sample, causing them problems with accepting the loss (Papers I, II & III). Receiving information about the death, viewing the deceased and visiting the site of the death may help the bereaved to grasp the reality of the loss, as well as facilitate acceptance after traumatic and violent losses (Kristensen, Weisæth et al., 2012). While the immediate family was likely to receive information from the police and authorities (Norwegian Directorate of Health, 2011) and had an apt opportunity to view their dead family member, friends would have had fewer opportunities to make the loss real by seeing the dead body or by being told the facts about the killing by the police and the autopsy personnel (Papers I & II). In accordance with the findings of other studies (Heir & Weisæth, 2006; Kristensen, Tønnessen, Weisæth, & Heir, 2012), those who had the possibility of it, said in the interviews that it would have been easier to accept the fact that their friend was gone had they been able to see the deceased or visit the scene of the killings (Paper II). Most of them expressed, however, that they also had trouble accepting the loss because of the way the deaths occurred and that the death felt so unreal (Paper II). The very unnaturalness of the violent deaths can create significant problems with sense-making and acceptance, thereby causing greater distress and increasing the risk of complicated grief reactions and maladjustment in bereavement (Currier et al., 2006; Kaltman & Bonanno, 2003; Keesee et al., 2008; Nakajima et al., 2012). According to Currier et al. (2006), lack of sense-making is the critical pathway to complicated grief, rather than the objective cause of death (violent vs. natural).

The question of preparedness for death, the degree of trauma and suffering associated with a person's death, and the sense that the death was distressing and not peaceful may be pertinent issues when examining risk factors for complicated grief responses (Lobb et al., 2010). Many experiences reported by bereaved are similar to and overlap with stressors and symptoms of PTSD, such as recurrent intrusive recollections, distressing flashbacks, psychological distress related to reminders and physiological manifestations, such as sleep difficulties and concentration problems (Figley, Bride, & Mazza, 1997). Intrusive thoughts, avoidance and activation may contribute to a more severe grief response (Archer, 2008; Kaltman & Bonanno, 2003; Murphy, 1999; Neria & Litz, 2004). Zhou and Wu (2016) found that rumination was linked to PTSD symptoms, both immediately and in the long-term. In line

with this, there was a high degree of avoidance and rumination found in this sample (Paper III). Some of the bereaved friends had managed to separate the loss from the event, but many still struggled with grief processing being disturbed by reminders of the event and by thinking about what had happened to their friend (Paper II). Avoidance related to stressors that remind them of the event could be difficult to separate from avoidance of grief-related stressors, with the interviews revealing that many of the bereaved friends were preoccupied with thoughts of how the killings could have been prevented, and many of them were angry, for instance, at the police (Paper II). The high scores for avoidant behavior across time also predicted high complicated grief scores across time, with avoidance at T1 having the strongest effect on T3 scores for complicated grief, even when controlling for the change (Paper III). After the Madrid terrorist attacks on March 11th 2004, Vazquez, Hervas and Perez-Sales (2008) argued that the association between strong initial reactions could be seen as either avoidant strategies, as a consequence of a strong initial reaction, or that people with a thought-suppressive style reacting more negatively as a rebound effect of this cognitive style.

Avoidance is a natural reaction to a traumatic event, but avoidant behavior towards the traumatic event could also lead to an avoidance of thinking about the loss. The effect rumination had on the relationship between avoidance and complicated grief among the bereaved friends after the Utøya-killings showed that they ruminated about the loss in parallel with avoiding (Paper III). According to Stroebe, Boelen et al. (2007), there are several ways that rumination may function as avoidance, for example, avoiding thinking about the deceased because of difficulties in facing up to or confronting the loss, avoiding acceptance and processing of the loss by engaging in counterfactual thinking, or ruminating as a distraction from more emotionally laden topics. Shear (2010) argues that experiential avoidance can function as an adaptive strategy in the difficult resolution of the bereavement dilemma and facilitate the healing process of complicated grief. However, when overused or when used in a rigid and unchanging way throughout the grieving period, maladaptive cognitive or behavioral avoidance can become a constraint, leading to the development of more complicated grief (Shear, 2010). Stroebe, Boelen et al. (2007) argue that engaging in rumination can serve as an “excuse” for avoiding admission of and adjustment to the loss, while rumination, in the extreme, is symptomatic of an inability and/or fear-driven unwillingness to face up to the reality of the loss. In addition, it is the unwillingness and inability that cause complications, rather than the ruminative coping itself.

6.2.3 Received help and support may prevent functional impairment

Help and support received from both professional helpers and the social network after a loss can influence grief processing, both positively and negatively (cf. Figure 1). Most of the friends in this sample had initially received some support from friends and family, as well as from the rest of society, but many still pointed out that others could not understand what they were going through, as well as stating that the support was brief and they were expected to move on quite quickly (Papers I & II). Stroebe, Hansson, Stroebe, and Schut (2001) point out that situational risk factors related to the death, personal risk factors such as gender and characteristics prior to the death, and interpersonal risk factors such as the availability of social and emotional support from family and friends, are important in processing of grief.

Over 60% of the friends in the present study had severe or moderately severe functional impairment, especially in terms of problems with the ability to study or work and participate in social activities. For general psychological distress (GHQ), 71% of friends scored above the cut-off, compared to 88% of parents and 75% of siblings. In addition, many reported feelings of depression and worry, as well as showing relatively high scores for suicidal ideation (Paper I). When in need of help, they often had to make contact on their own initiative, something that is usually unlikely to be done by this age group (Paper I). High symptomatology, therefore, may also reflect the limited utilization of help. Only about half of the friends had received help from professionals after their loss, despite the fact that many, especially the females, desired help (Paper I). Many reported that they felt that school or work tasks felt more demanding than before the loss. The fact that 39% reported lower grades in the aftermath of the terror corresponds well with other Norwegian studies, and for instance, Bugge (1997) found that 40% of grieving students reported lower grades in the first years after a loss. Many respondents reported absence from school or work, with those who reported the highest need for help being the most likely to be absent from school or work. A number of the friends did receive some help from teachers and school counselors, but many still wanted more help one and a half years after the loss. Schools with students affected by the terror attack, whether as survivors or bereaved family members, were offered training to raise their awareness and knowledge about their reactions and needs. Unfortunately, this assistance only addressed the survivors and bereaved siblings (The Norwegian Directorate of Health, 2012). A. Dyregrov, Bie Wikander and Vigerust (1999) found that, in a study of classmates and good friends following the accidental death of an adolescent, Norwegian

students received a good standard of help and support from their school, but that friends from outside the deceased's class largely went unnoticed.

Previous research has shown that longer duration of help could be associated with a more positive adjustment to the loss, but the duration of help received is often shorter than what bereaved adolescents want and need (Ringler & Hayden, 2000). If schools provide help, they are often more likely to do this immediately after a death, such that students experiencing long-term effects without showing overt symptoms of grief may be overlooked (Hedman, 2012; Pfefferbaum et al., 2000). Although teachers are expected to help grieving students, many feel that they are not trained to handle a student's death, with additional professional development in the area of crisis response training often needed (K. Dyregrov, Endsjø et al., 2014; Hart & Garza, 2012).

Friends' grief needs to be recognized

The high symptom scores may also be connected to the lack of recognition of the bereaved friends' losses, in line with the theory of disenfranchised grief (Doka, 1989, 2002). After a death, close friends and other non-familial close relationships are often unrecognized and unmentioned. According to Fowlkes (1990), friendships carry less ideological and moral weight than family attachments, which may be explained by the fact that the voluntary nature of friendships is equated with the temporary and disposable, rather than with the lasting and the obligatory. Since these relationships do not confer the same affective morality as kin ties nor carry emotional standing, the meaning of the loss for bereaved friends may only be partially recognized and validated by society, thereby severely attenuating their "right" to grieve after a death (Doka, 1989, 2002; Fowlkes, 1990).

Both in the open-ended questions in the questionnaires, and in the qualitative interviews for this study (Papers I & II), friends expressed the feeling of not being recognized as bereaved, with many also reporting experiences of feeling that others did not accept the fact that they had suffered a loss. Thus, it is important to assess the closeness in the relationship to the deceased when adolescents experience loss and apply a broad definition of the relationship to the victim (Rheingold et al., 2012; Servaty-Seib & Pistole, 2006-2007). Harms et al. (2015) emphasize that both short- and long-term interventions should be aware of "hierarchies" of

grief that can quickly emerge in the aftermath of disasters, and that relevant coping strategies at community and individual levels should be provided.

6.2.4 Females struggle the most with the grief

In addition to the close relationship with the deceased, age and gender might help explain the high scores and the slow decrease over time. Females reported higher scores on perceived closeness in the relationship with the deceased, compared with males, with females in this sample being especially in the risk zone and vulnerable to severe problems, compared with males (Papers I & III). The importance of friendship is particularly evident in the friendships between young women (De Goede et al., 2009; Hartup, 2001; Malone, 2012; Way & Greene, 2006). Females are often assumed to have relationships with a higher degree of affection, intimacy and instrumental help with their friends than males (e.g., De Goede et al., 2009; Hartup, 2001). This can cause stronger grief reactions for females when losing a close friend.

At T1, 83% of the friends scored above the cut-off for complicated grief, while as many as 92% ($n = 54$) of females, compared to 53% ($n = 9$) of males, scored above the cut-off (Paper I). The females especially tended to have problems in adjusting to life without their friend (Paper II). Young girls tend to be more affected by stress, more dependent on others for support, have relationships that are more intimate and are more sensitive to others' expectations. Gender differences may also imply different risks for males and females, such that males may be at risk if they keep their problems to themselves, while females may be at risk if they are too dependent on external help (Coleman, 2011; Kersting & Kroker, 2010; Malone, 2012). Younger people may also tend to overrate their reactions to negative phenomena. However, since there were no significant correlations between age and symptom severity, this implies that friends have strong reactions irrespective of their age in this sample (Paper I). The gender differences were evident over time, as females had higher scores than males at all time points. Females also had a more straight and slow decrease, while males appeared to have the largest decrease from T1 to T2, and then almost no change from T2 to T3 (Paper III). This is in line with other studies, where women are found to be specifically at risk of complicated grief reactions (Kersting & Kroker, 2010; Malone, 2012; Stroebe, 1998). Doka and Martin (2010) describe two patterns of grieving, which they argue are influenced by

gender, but not determined by it. They differentiate between intuitive grievers, where the pattern is more affective, with the individual often needing to express their feelings and seek support from others (feminine grieving style), and instrumental grievers, where grief is experienced physically, such as in restlessness and cognition, with the individual more often preferring to cognitively process or immerse themselves in an activity (masculine grieving style). Thus, women's inclination towards worrying and rumination compared to males (Morina, 2011) may play a part in explaining the gender differences found in this sample. The close relationships experienced by women and their tendency towards self-disclosure about emotional difficulties may lead to more co-rumination for women (Rose, 2002).

6.2.5 Friends' grief lasts for a long time

Bereaved friends in this sample had high scores for complicated grief symptoms, avoidant behavior and ruminative thoughts over time, and a large proportion of the friends had complicated grief scores above the cut-off level three and a half years after their loss (Paper III). Servaty-Seib and Pistole (2006-2007) found in their study that the more time that had elapsed since a death, the greater adolescents perceived the intensity of their past grief to have been, arguing that the length of time since a death is not a straightforward predictor of grief intensity for adolescents. Possible explanations for this phenomenon are that adolescents idealize the event in their retrospective accounts, which they appraise as well as report their past grief more accurately as they move beyond the initial grief, or that the memory of the past grief is stronger in comparison to present grief (Servaty-Seib & Pistole, 2006-2007). It might also be the case that, when the bereaved grow older, they have a more mature understanding of their loss and how it has affected them. Young people may not have the mental and emotional repertoire to handle very difficult issues (Frydenberg, 2014). As some of the friends explained, they "did not know" how to process the loss (Paper II). Another explanation could be that, as found for bereaved parents and siblings after the Utøya-attacks (K. Dyregrov et al., 2014), that the grief was delayed. This may help explain the persistent intensity of the grief, three and a half years after the loss.

The long perspective follow-up, which many bereaved students are in need of, has also received little attention in schools (A. Dyregrov, 2004). Problems may then occur in the case of delayed grief, since teachers and co-workers may assume that the bereaved person is

coping well (Broberg et al., 2005). If the individual starts to experience difficulties in maintaining everyday functioning at school or in daily work after some time has passed, it may be more difficult to receive the same understanding and facilitate the kind of help that may be accessible immediately after the death.

When examining changes in complicated grief by the mean change between each time point (T1-T2 and T2-T3), the results showed that those bereaved friends with the highest baseline level of complicated grief had the largest reduction in symptoms from T1 to T2, with those experiencing the most reduction from T1 to T2 being the ones who most probably experienced the least reduction in the T2 to T3 period (Paper III). The comorbidity of PTSD is particularly considered to contribute to higher levels of, and more enduring, distress than bereavement after death by natural causes, since posttraumatic stress can enhance the development of complicated grief by suppressing functions that facilitate the grieving process (Kaltman & Bonanno, 2003; Nakajima et al., 2012). Thus, PTSD symptoms can cause the development of grief reactions over and above the normal responses, thereby contributing to a more severe grief response. Holland, Currier and Neimeyer (2006) argue that the relation of sense-making and benefit-finding to complicated grief does not vary as a function of time, since the loss, at least within the first two years of bereavement, and suggest that neither meaning-making nor attenuation of complicated grief should be expected by the passage of time alone.

The findings from this study indicate that this group of bereaved friends has a slower trajectory of change than might be seen in other studies. Schnider et al. (2007) raise the question of whether loss among young adults may be associated with a different form of complicated grief than has been previously observed in various studied populations with complicated grief. This sample consists of young adults and there is clearly a need to better understand how friends' reactions interact with or relate to the intensity of relationships formed at this age, according to their ability to regulate emotions (Kaplow & Layne, 2014).

6.3 Strengths and limitations

This mixed methods study gives a broad perspective of the situation of bereaved friends, using both their own description of their experiences through interviews, and questionnaire data that make it possible to compare groups and change over time. However, both methods have different strengths and limitations that should be discussed.

When it comes to the quantitative data, a limitation to the study is that there is no record or overview of the total population of bereaved friends following the Utøya-attacks. There is no information about the close friends who were offered but chose not to participate in the study, and therefore, it is not possible to know how their responses might have affected the scores. For the quantitative data, this makes it difficult to measure representability in this study, as well as generalize the results to the total population. As the friends in this sample describe characteristics of grief experienced by *close* friends, one should also be careful when using these findings to generalize about other groups of bereaved friends. This will also apply to those who have lost a friend in a non-traumatic way. It is, however, a strength that the sample in the present study was a homogenous group in this context; they all lost a close friend on Utøya. The variable of closeness in the relationship to the deceased shows that the intended population was targeted. However, the homogeneous background of the group may decrease the generalizability in relation to studies of bereavement due to homicide among more deprived and heterogeneous population groups. Another limitation is that, although this is a longitudinal study, there is no information about the reactions immediately after the incident. Since the first time point for measurement was one and a half years after the loss, it is difficult to compare the results with other studies that have studied complicated grief sooner after a loss. A strength, however, is that the present study is longitudinal, with measurements up to three and a half years post-loss. Thus, the friends' reactions can be explored over time. In terms of the use of standardized instruments, it can be discussed as to how far these are appropriate for capturing grief as a process and not just the level of grief at brief time points. In addition, important dimensions of grief and grieving may be left out if certain topics are not included in the questionnaire. A strength of using standardized instruments is that these data can be compared with populations from other studies, and the level of grief measured at different time points will also make it possible to say something about the change in and process of the grief. Finally, a limitation is that the sample size is relatively small. Advanced

statistics, however, have been used to compensate for the low sample size, and the imputation of data has provided full data sets for all time points.

In terms of the qualitative part of the study, the interview data were cross-sectional and were collected as long as two years after the loss, making it difficult to explore immediate reactions to the loss or describe change over time. The analyses indicate, however, that the categories that were chosen function well in capturing the difficulties faced by this sample in relation to grief, even two years after the loss. Interviews were conducted until saturation of data was achieved, and, in line with standards for qualitative data, the qualitative sample is relatively large. It is also considered that the researcher's motives, background and perspectives, and research questions are adequately presented in order to address reflexivity (Malterud, 2001). In addition, the interview sample matched the total sample of this study according to gender, age and geography. Thus, it is also considered that the sample is adequate and sufficiently varied, such that transferability and the possibility of theoretical generalization is present (Kvale, 1996; Malterud, 2001).

Finally, an overall strength of the study is rooted in the fact that an understudied field has been studied by the use of mixed methods. This study is among the first studies that focus solely on the situation of young adults who have lost a close friend and, therefore, may add to our knowledge about grief in this context. Broadening the perspective to include bereaved friends in studies can make us better prepared for future events, as well as possibly contribute important information on this often overlooked group. In addition, a terror event resulting in extensive mass killings was unprecedented in Norway. However, as terror becomes more frequent in Western countries, it was considered as important to learn from the incident and how it affects the bereaved.

7 Conclusion

This study shows that bereaved friends evidenced severe reactions to the loss of their friend, with quantitative findings showing high levels of complicated grief and trauma reactions across time. This is also reflected in the qualitative findings, which reveal their particular struggles concerning the circumstances of the event, adaptation to daily life without their friend and the acceptance of the loss. Several explanations for the high degree of complicated grief are possible.

First, the closeness in the relationships will probably account for much of the intensity regarding the grief reactions and it is important to understand that the intensity of young people's grief reactions can partly be predicted by the emotional relationship they had with the deceased (e.g., Servaty-Seib & Pistole, 2006-2007). The loss of a friend is a distinct loss that is hard to compare with other losses, as the role of a friend fulfills many needs that will not be met by other attachment figures. Although family is important for us all for different reasons, a friend is someone you turn to about issues that your family cannot help with.

Second, the bereaved friends also struggled with trauma reactions after the loss, revealing a high degree of avoidance and rumination around the loss. It is noteworthy that their grief was severed by avoidant behavior and ruminative thoughts, which constituted characteristic features of the grieving process among close friends. The grieving was approached through frequent rumination and a strong intent to not forget the close friend. Conversely, they wanted to establish some distance with the grieving and the intense emotional pain it represented. This could hinder a healthy grieving process and consequently lead to more complicated grief, as the findings also showed that the trauma associated with the deaths further complicated the processing of grief among this sample. The long-term findings showed that the high symptom severity also endured over time, with the bereaved friends heavily impacted by the loss of their close friend several years after the loss. The complicated grief also affected functioning at school or work, demonstrated through absence and poorer performance. Most of the friends had high levels of mental distress and functional impairment.

A third explanation for the high symptom severity could be related to the way in which the needs of bereaved friends were being met by professional helpers, as well as the level of help

and support they received from their friends and family. The needs of many of the friends were met in a good way, but many also pointed to a lack of recognition for their grief.

Thus, it is the hope of the researcher that this thesis may bring about some much needed attention to and recognition for the friends' position as bereaved. With newly gained knowledge about essence and vulnerability of being a close friend, especially in formative years, such as adolescence, this group and similar groups in the future deserve proper respect, attention and support in relation to their grief.

7.1 Implications of findings

Knowledge generated by this study may be of national and international interest, as research focusing on the killings of July 22nd 2011 has already received considerable attention from experts in the field of bereavement and trauma as well as professionals working with bereaved in Norway. The present study may also contribute systematic knowledge regarding concrete recommendations for effective follow-up strategies in health care for bereaved friends, both at the institutional level (such as school, healthcare, the police, the church, public health nurses and social workers) and in the social network. Thus, this three-wave longitudinal study makes a substantial contribution to the bereavement field.

More specifically, this study may add new knowledge in several different areas. First, the study may provide *empirical knowledge about friends' grief*, which is a new area in the bereavement field. The findings from this study calls for a broader perspective about whom is affected when someone dies and for follow-up measures to be broadened in order to include more than just the closest family. Friends constitute a large group that is often not seen in connection with the loss of a loved one, but this study documents how friends can be very affected by such a loss. The practical implications of these findings are that this is a bereaved group to be aware of.

Second, the study may add important *knowledge about how traumatic losses affect the everyday functioning* of bereaved friends, especially over time. When it comes to traumatic deaths, grief and trauma reactions need to be seen in context. This combination of data may also offer a unique opportunity to identify some of the moderating and mediating factors

underlying school- and work-related problems, which might in turn make it easier to support and facilitate the bereaved in their return to everyday life.

Third, the study may provide *knowledge about the health consequences of complicated grief for bereaved friends*. The aim of this study was to provide information, for example, to professionals and authorities on what close bereaved friends are struggling with, what their problems are related to, and how to help them after national disasters similar to the July 22nd 2011 terror-attacks. As a consequence of the information about the help that close friends in this sample have received and the help they desire, this study will also provide knowledge about the kinds of help that could be provided in the future for bereaved friends. This may ensure that they are being offered help on their own terms and in relation to their own needs.

Fourth, the study may provide *knowledge about how to help bereaved friends*. The closeness in the relationship with the deceased will be a strong indicator for risk of complicated reactions. Raising the awareness about the way in which many young adults will struggle after losing a close friend does not mean that *all* close friends should automatically be enrolled in a healthcare program after a loss. These findings, however, call for better strategies for identifying those individuals who are in need of follow-up. Helpers must recognize that friends can also have strong reactions and may be in need of attention and help after a loss as well. Another implication is that this awareness should be upheld as time passes, since both grief and trauma reactions may persist over time. Helpers also need to be flexible and adapt available resources in order to help this specific bereaved group, as well as offering them help on their premises. What bereaved friends need is primarily to be seen and recognized, and not be turned away if they express grief over the loss of a close friend. They also need easily accessible, low-key help measures, which are arranged in the environments where they spend most of their time.

One last thing to pinpoint is that it is of great importance to disseminate information about friends' grief to the public in general, as well as authorities involved in care and the political system, so that bereaved friends can be seen, understood and supported when similar tragic events occur in the future. Efforts to help should unfold, regardless of the number of deceased and affected. Recognizing friends' grief can lead to more inclusion for close friends in general when helping assistance is mobilized. Figure 2 gives some suggestions about how bereaved friends can be helped at different levels.

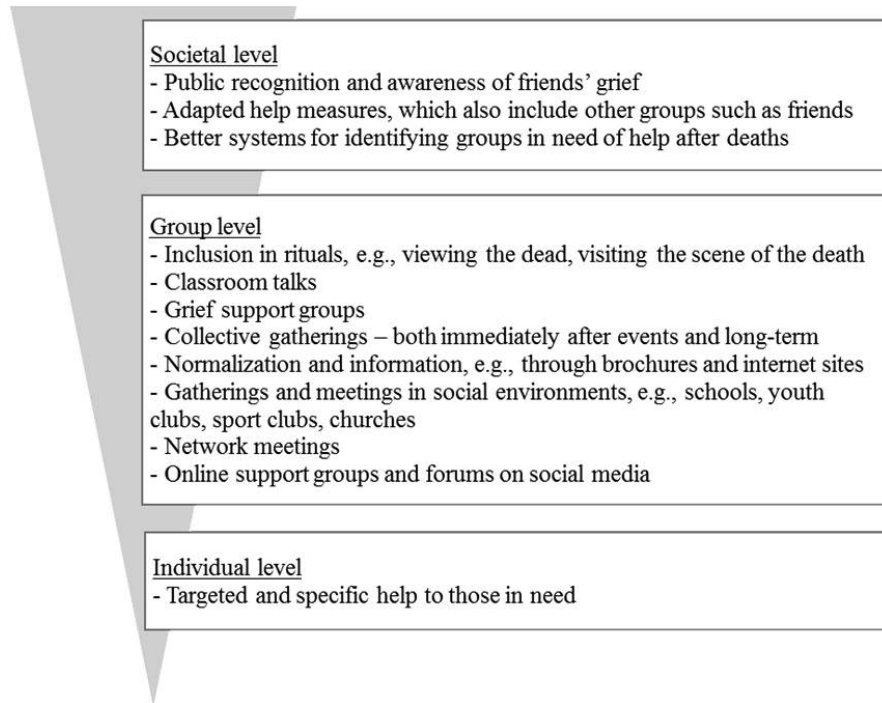


Figure 2. Suggestions of help for bereaved friends on different levels.

Suggestions for further research

Friends' grief is an understudied area in the context of bereavement research, with previous research primarily focusing on bereaved in terms of biological attachment. At the same time, the importance of friendships is increasingly being recognized in our society, which means that many more are affected by losses than previously assumed. In addition, grief can be especially difficult to measure among young people, and if they feel that they are not being seen, helped and supported because they do not have a defined place in the grief hierarchy, there is a risk that they will struggle for many years to come.

More systematic knowledge is needed in this field, and more longitudinal research on grief and complicated grief, especially for young people, should be conducted. There is a need for more knowledge about how complicated grief affects functioning and general health.

Impairment in these areas during a crucial developmental period in life can have serious long-term effects.

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Papers I-III

Paper I

Psychosocial functioning after losing a close friend in an extreme terror incident

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Friends of Utøya terror victims evidenced severe reactions to the loss of their friend, a loss even comparable to those of close family members, according to this survey study by Iren Johnsen and colleagues.

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Bereaved from sudden, violent deaths are at higher risk of post disaster diagnoses such as complicated grief and PTSD, compared to non-violent bereaved (e.g., Kaltman & Bonanno, 2003; Nakajima, Ito, Shirai, & Konishi, 2012; Norris, 2007; Rheingold, Zinzow, Hawkins, Saunders, & Kilpatrick, 2012). Risk factors for complicated grief are traumatic deaths (e.g. homicide, suicide, disaster, or accident), emotional closeness to the deceased, lack of preparedness, age and gender (Lobb et al., 2010; Nakajima et al., 2012), and the risk excels when young people die (Hardison, Neimeyer, & Lichstein, 2005; Ringler & Hayden, 2000). Although it is well documented that bereaved after violent and sudden deaths are at risk for complicated reactions, more knowledge is needed on how complicated grief is associated with functioning and well-being for bereaved friends.

The event.

On July 22nd, 2011, a Norwegian right-wing extremist executed two sequential terror attacks. The killer first detonated a car bomb outside the Government building in Oslo, killing eight people. Then he drove to Utøya, a small island where 500 to 600 people were gathered for the Worker's Youth League's (AUF – the youth division of the Norwegian Labour Party) annual summer camp. In total 69 people were killed at Utøya, mainly young people (the youngest were only 14 years old), and many were badly injured. The terrorist events are the deadliest attack on Norway since World War II, and represent a national tragedy that has affected the entire Norwegian society.

The importance of friendships.

Having relationships with and being attached to others is important for human beings, and young people, especially, invest a lot of energy in being included, and being part of a group (Coleman, 2011). During adolescence and through young adulthood there is a shift with decreasing parental support and increasing support from friends

(Margolese, Markiewicz, & Doyle, 2005). The importance of friend relationships during adolescence and young adulthood would predict that losing a close friend at this age could be a life-changing experience (Balk, Zaengle, & Corr, 2011; Ringler & Hayden, 2000). Experiencing a loss could lead to growth and maturity, but may also interfere with normal developmental tasks and impede function (Doka, 2000; Neimeyer, Laurie, Mehta, Hardison, & Currier, 2008). Young girls have a closer relationship with their friends than boys do, with higher levels of both intimacy and peer support (Coleman, 2011; De Goede, Branje, & Meeus, 2009; Malone, 2012; Markiewicz, Lawford, Doyle, & Haggart, 2006), predicting stronger grief reactions in girls.

Perceived closeness to victims has previously been found to be positively associated with stronger reactions following disasters (Dyregrov, Frykholm, Lilled, Broberg, & Holmberg, 2003). The intensity of the grief reactions may then be better predicted by the emotional relation one had to the deceased (Pfefferbaum et al., 2000; Rheingold et al., 2012; Servaty-Seib & Pistole, 2006–2007). Previous studies have also found that for some the loss of a friend can result in more severe grief reactions than the loss of an extended family member (Holland & Neimeyer, 2011; Pfefferbaum et al., 2000; Servaty-Seib & Pistole, 2006–2007). However, a friend's grief does not receive the same attention and recognition (Rickgarn, 1987; Ringler & Hayden, 2000; Sklar & Hartley, 1990).

Additional stressors related to the loss.

Several studies have explored the impact of mass killings (Neria et al., 2007; Norris, 2007; Nurmi, 2012). Specific incidents such as the shootings at Virginia Tech University (Vicary & Fraley, 2010), the 9/11 attacks (Ahern, Galea, Resnick, & Vlahov, 2004; DiGrande, Neria, Brackbill, Pulliam, & Galea, 2011), the Oklahoma bombing (Pfefferbaum, 2000) and the Boston Marathon bombing (Comer et al., 2014) have received special attention. The modern 24-hour news cycle, combined with the use of cell phones, internet and social media, opens for dramatic, repeated coverage both during and after the commission of crimes (Nakajima et al., 2012; Turvey, 2012). This intense, often prolonged, media coverage can cause additional stress and increase symptom severity, with almost constant reminders (Ahern et al., 2004; Holman, Garfin, & Silver, 2014). A year after the Utøya killings (April 2012) the killer was put on trial and sentenced to 21 years of preventive detention, which is the maximum length of imprisonment given in Norway. In addition, if the prosecuting authorities still believe that the killer poses a danger after the longest time runs out, they may raise new legal proceedings to get the outer frame extended by five years at a time. The trial continued for more than two months, with extensive (for long periods live) media coverage. Throughout the first year, the event was mentioned in the news every day, usually as the major news item. The Norwegian Health Authorities mounted a proactive and systematic community help approach for the survivors' and the bereaved families. Seminars were arranged for Norwegian teachers and school-owners to mount a proper response for students who had been directly affected by the terror-attack as survivors or bereaved. Help, preferably over time, is associated with positive adjustment to the

loss (Ringler & Hayden, 2000), but bereaved friends were not included in this approach.

We use the term 'complicated grief' as an overarching term for complications in bereavement, among which prolonged grief is the most common (see Maercker & Lalor, 2012 for a presentation and discussion of the concepts). Normal and complicated grief are part of a continuum, rather than being categorically different (Holland, Neimeyer, Boelen, & Prigerson, 2008). Ongoing maturation and development may, in addition to shifts in symptomatology with increasing age, add to the complexity of understanding and studying normal and complicated reactions for adolescents and young adults (Kaplow, Layne, Pynoos, Cohen, & Lieberman, 2012).

Both clinical experience and research have identified problems related to the interplay between trauma and grief, and if a person is present and witness to a death, or the traumatic circumstances surrounding the death easily gives rise to inner images of what happened, it may be very difficult to think of memories of that person without the «traumatic» circumstances invading their thoughts (Neria & Litz, 2004). Bereavement after the unexpected loss of a loved one is associated with elevated risk for an onset of PTSD, panic disorder, depressive episodes, and multiple psychiatric disorders like mood and anxiety disorders (Keyes et al., 2014). The nature of young girls' relationships could also imply that they will be especially at risk for complicated reactions (Coleman, 2011; Malone, 2012).

Purpose and main objectives of the study.

The death of an adolescent affects many friends, classmates and peers every year, but few studies have focused on how youths are affected by losing a close friend, and how we can support and help them. This study is part of a larger project, which aims to increase awareness of bereaved parents, siblings and friends' situation after the killings at Utøya 22nd of July 2011, and focuses solely on the bereaved after these deaths. Results from the studies on bereaved parents and siblings will be presented in other articles, whereas only results from the group of friends are presented in this article. The study is non-experimental, and in order to get an overview of the unexplored field of friends as bereaved, an exploratory focus for analyses was chosen rather than a hypothesis-testing one. Focus is on possible associations and relations between grief and trauma reactions, functioning, received and wanted help, and media exposure. The research questions are:

1. To what degree are friends struggling with grief and trauma reactions, and how can we explain the symptom severity?
2. What help have the bereaved friends received?
3. How does symptom severity and received help affect psychosocial functioning for bereaved friends?
4. Are there gender differences in regard to symptom severity, help measures and psychosocial functioning for bereaved friends?

Method

Participants and procedure.

Bereaved friends of the eligible 67 of the 69 persons (two were foreign citizens and excluded) who were killed on Utøya were included in the study. For each deceased, we assumed that there were at least 4–6 close friends or boyfriend/girlfriends, which meant that several hundred young people lost a close friend. Delays due to funding and approving meant that recruitment could not start until February 2013. Names of family members were obtained using public records of the deceased after the Utøya terrorist attacks and linked to the National Population Register, and in addition to participating in the study themselves, family members were asked to recruit four to six of the deceased's friends to the study. Friends representing 30 of the 67 deceased (45%) filled out questionnaires. Based on previous research experience with populations bereaved by potentially traumatizing deaths, a careful and respectful approach was emphasized (Dyregrov, 2004; Dyregrov et al., 2011). The project was approved by the Regional Committees for Medical and Health Research Ethics (REK) in Norway.

The sample of friends consisted of 76 young adults (22% ($n = 17$) men and 78% ($n = 59$) women) who lost a close friend or a boyfriend/girlfriend at Utøya. Although age varied between 15 and 41 years ($mean = 20.72$, $SD = 4.96$), participants were defined as young adults since 92% of the sample was between the age of 17–29 (see also Herberman Mash, Fullerton, & Ursano, 2013). The age range was wide because friends of both the youths and the few adults who were killed on Utøya were included. Of the women 64% ($n = 38$) lost a female friend, 32% ($n = 19$) lost a male friend, and 3% ($n = 2$) lost a boyfriend, while of the men 77% ($n = 13$) lost a male friend, 18% ($n = 3$) lost a female friend, and 6% ($n = 1$) lost a girlfriend.

Measures.

Informants were given a 10-page questionnaire. The first part was developed at our research center and consisted of questions mapping socio-demographic (e.g. age and gender) and loss-related questions (whom they had lost). The friends were also asked to report any absence from school or work, the duration of absence, if their grades or work performance had deteriorated or improved since the loss, and if school or work tasks felt more demanding than before the loss. Help measures included questions on experienced need for professional help, if they had received help or not, and from whom, and how the contact with the helpers was established. They were also asked in open-ended questions if they had any advice to professionals on what help bereaved should receive, if they had any negative experiences with the received help, or if there were barriers for help seeking. In addition the friends were measured on how many hours they watched the news (< 2 h, 2–4 h and > 4 h), if they found the media coverage or trial to have been stressful, and if they tried to protect themselves from the media coverage.

The Inventory of Complicated Grief (ICG-19) was used to measure maladaptive symptoms of loss and to predict long-term dysfunction (Prigerson et al., 1995). The instrument consists of 19 items, with a five-point scale (scored 0-1-2-3-4) ranging from «Never» to «Always». A cut-off point of 25 was used to distinguish participants with normal grief from those with more complicated reactions (Prigerson et al., 1995). Cronbach's alpha was .90.

The Impact of Event Scale (IES-22 Revised) consists of 22 items with a five-point scale (scored 0-1-2-3-4) ranging from «Not at all» to «Extremely», and was used to measure the subjective response to the specific traumatic event (Weiss & Marmar, 1997). The measure included three subscales: intrusion (i.e. re-experiencing symptoms; intrusive feelings, thoughts and images); avoidance (i.e. numbness, avoidance of feelings and situations), and hyperarousal (i.e. irritability and hypervigilance). A cut-off of 34 on the total score is indicative of a PTSD diagnosis (Morina, Ehring, & Priebe, 2013). Cronbach's alpha for the total score was .93.

The General Health Questionnaire (GHQ 12) was used to measure the bereaved's current mental health and level of general psychological distress and inability to carry out normal functions (Goldberg & Williams, 1988). The instrument consists of 12 items, each rated on a four-point scale (scored 0-0-1-1). A cut-off of 3 indicates psychological distress (Makowska, Merez, Moscicka, & Kolasa, 2002). Cronbach's alpha was .84. In this study, we also included two questions on suicide ideation from GHQ 28 (item 25 and 28).

The Work and Social Adjustment Scale (WSAS) was used to measure functional impairment attributable to the loss (Mundt, Marks, Shear, & Greist, 2002). This is a five-item instrument, with a scale (scored 0–8) ranging from «Not at all» to «Very severely». According to Mundt et al. (2002) a WSAS score above 20 suggests moderately severe or worse functional impairment, while scores between 10 and 20 are associated with significant functional impairment but less severe clinical symptomatology, and scores below 10 appear to be associated with subclinical populations. Cronbach's alpha was .85.

Data analysis.

Data were analyzed using SPSS, version 21. Predictor variables (e.g. demographic variables, media exposure, symptom levels and need for help) were analyzed with regard to outcome variables (e.g. functional impairment at school or work). Descriptive analyses were conducted to assess the symptom level of the bereaved friends and to determine how many who had scores indicating complicated reactions, on measures reflecting function in school or work, on received help, and on additional stressors like media exposure. Correlations and t-tests were then used to assess the possible links between trauma, grief, functional impairment, general psychological distress, and felt need for help, in addition to possible gender differences. Mixed linear modelling analyses were used to obtain mean scores and p-values while adjusting for potential cluster effects for subjects that knew the same victim. In order to obtain sum- and cut-

off scores on the symptom measures for all informants, missing values for the instruments were imputed using multiple imputations (Rubin, 1996; Schafer & Graham, 2002). Values on other variables that could predict a score on the specific variable were used to compute new values, before calculating the sum- and cut-off scores on the symptom measures.

Results

The friends reported high levels on all symptom measures (Table 1). As many as 83% ($n = 63$) scored above the cut-off, implying a risk for complicated grief reactions (ICG-19), and the most common reactions were longing, and feelings of not being able to accept the death. For trauma reactions (IES-22 R), 68% ($n = 52$) scored above the cut-off, and most common were feelings of unreality and problems with intrusive reminders. For psychological distress (GHQ), as many as 71% scored above the cut-off, and the most common symptoms were feeling depressed and lying awake worrying. On suicide ideation, 26% ($n = 20$) answered that they often or sometimes thought of the possibility of ending their life, and 29% ($n = 22$) answered that they often or sometimes found that the idea of ending their life kept coming into their mind.

TABLE 1: Symptom severity for bereaved friends after the July 22nd 2011 terror incident. Gender differences are shown. *Mean* (%), *n*, *SD*, *F*-values. $N = 76$.

Symptom measures	All	Males	Females	Mean scores	
	Mean (SD)	Mean (SD)	Mean (SD)	F	p
Grief reactions (ICG)	36.2 (13.73)	25.2 (13.56)	39.4 (12.11)	17.75	.000
Trauma reactions (IES)	42.6 (18.62)	31.5 (18.26)	45.8 (17.6)	8.53	.005
Intrusive thoughts (IES Intrusion)	15.8 (7.69)	11.8 (7.55)	17,0 (7.38)	6.77	.011
Avoidant behavior (IES Avoidance)	16.3 (7.39)	12.6 (7.32)	17,4 (7.12)	4.47	.038
Hyperarousal (IES Arousal)	10.4 (6.21)	7.2 (6.56)	11,4 (5.82)	6.71	.012
General psych. distress (GHQ)	4.8 (3.39)	3.2 (3.47)	5.2 (3.25)	6.31	.014
Work and social functioning (WSAS)	13.1 (9.58)	9.9 (10.43)	13.9 (9.21)	2.71	.104

Note. Mixed linear modelling analyses were used to obtain mean scores and to adjust for potential cluster effects for subjects that knew the same victim.

As for functional impairment attributable to the loss (WSAS), 25% ($n = 19$) scored above 20, and 36% ($n = 27$) scored between 10 and 20. The most frequent problems were with regard to ability to study or work (item 1) and social activities (item 3). About half of the friends (53%, $n = 40$) also reported that they had been away from school or work because of the loss (varying from a few days' absence to 100% sick leave). Furthermore, 37% ($n = 28$) reported that their grades or work performance had deteriorated since the loss, and 68% ($n = 50$) reported that to some degree schoolwork

or work tasks felt more demanding than before, females reporting this more than males (80% compared to 29% respectively). Open-ended questions showed that many still wished for more help from school, mainly regarding adaptations, e.g. extended deadlines, 1½ years after the loss.

Although symptom severity seemed to decrease with age, there were no significant correlations between age and symptom severity. Yet there were clear gender differences on all symptom measures (Table 1), where females scored higher than males. For the mean scores, these differences were significant ($p < .05$) for complicated grief reactions, trauma reactions and psychological distress, but not for functional impairment. For complicated grief reactions as many as 92% ($n = 54$) of the females, compared to 53% ($n = 9$) of the males, scored above the cut-off, while on trauma reactions 76% ($n = 45$) of the females compared to 47% ($n = 8$) of the males scored above the cut-off. On psychological distress 80% ($n = 47$) of the females, compared to 41% ($n = 7$) of the males, scored above the cut-off.

In the first week after the terror attack as many as 62% ($n = 47$) watched news of the event more than four hours per day. This declined after a while, but there was a peak during the presentation of the friend's death at the trial, when 34% ($n = 26$) watched more than four hours a day. Friends found the media coverage more stressful than the trial to «a large extent» or «a fairly large extent» (71% ($n = 54$) and 59% ($n = 45$) respectively). Yet as many as 65% ($n = 49$) reported that they tried to shield themselves from the media coverage. Independent samples t-tests indicated gender differences on additional stress from media coverage ($t(74) = 2.52, p = .014$) and the trial ($t(74) = 3.40, p = .001$), where 76% ($n = 45$) of the females, compared to 53% ($n = 9$) of the males, found the media coverage stressful, and 66% ($n = 39$) of the females, compared to 35% ($n = 6$) of the males, found the trial stressful to «a large extent» or «a fairly large extent».

Many of the friends (68%, $n = 52$) felt that they needed help from public welfare services to some extent after the loss, but only about half of these received any help (Table 2).

TABLE 2: Self-reports of received help and support from professionals for bereaved friends after the July 22nd 2011 terror incident. $N = 76$.

Most of them also had to make contact themselves with the support services, and few had been contacted and offered support. Some had negative experiences with the help (e.g. poor communication with helpers, or helpers who did not acknowledge their needs for help). On the issue of barriers to help-seeking behavior, many of the friends answered in open-ended questions that they were «only friends», or that they felt others needed help more than them. Bivariate

correlations (Pearson's r) showed a strong positive correlation between experienced need for help

and level of symptoms (Table 3), and more need of help was associated with increased levels of trauma reactions, complicated grief symptoms, psychological distress and functional impairment (r 's varying between .39 and .58, $p < .001$).

TABLE 3: Relationship between need for help, and trauma and grief reactions, and psychological distress (Pearson's r), for bereaved friends after the July 22nd 2011 terror incident. $N = 76$.

	ICG	IES	IES	IES	IES	GHQ	WSAS
Need for help		Total	Intrusion	Avoidance	Arousal		
Pearson's r	.486*	.522*	.417*	.393*	.582*	.480*	.554*

Note. * $p < .001$

There were also strong positive correlations between absence from school or work, and need for help ($r = -.55$, $p < .001$), indicating that those with the strongest need for help were most absent. No significant correlations were, however, found between these variables and actual received help. Independent samples t -tests were conducted to explore gender differences on need for help. Significant gender differences ($t(74) = 2.99$, $p = .004$) were found, and frequencies showed that 43% ($n = 26$) of the

Variables	% (n)
Received help	
Earlier	36 (28)
Still	17 (13)
No	47 (36)
Received help from *	
Psychologist	39 (30)
School/teachers	16 (12)
School nurse	12 (9)
Crisis team	9 (7)
Contact establishment	
I was contacted	17 (7)
Others made the contact	29 (12)
I contacted them	54 (22)

Note. * = Multiple answers were available for the question, but only answers with > 5% are shown here.

females, compared to only 12% ($n = 2$) of the males, felt the need for help to “a large extent” or a «fairly large extent».

Discussion

The main findings in this study are that the bereaved friends, and especially the females, score high on both grief and trauma reactions, and on general psychological distress. This is associated with functional impairment and affects school or work tasks. The combination of the Utøya terror incident itself with its combination of a tragic loss surrounded by very traumatic circumstances, the intense and continued media exposure and the lack of recognition of friend's grief are a possible explanation of the high level of symptomatology in friends.

Bereavement following violent losses (accidents, homicide or suicide) increases the risk for complicated grief, thereby causing greater distress (e.g., Currier, Holland, & Neimeyer, 2006; Hardison et al., 2005; Lobb et al., 2010). Other studies that have explored reactions to mass killings also find high scores on complicated grief and trauma reactions. After the 9/11 attacks, 43% of the bereaved (both family members and friends) screened positive for complicated grief (Neria et al. (2007), while after the shootings at Virginia Tech University students who knew one of the victims scored especially high on PTSD symptoms (Vicary & Fraley, 2010). Pfefferbaum et al. (2000), however, did not find that bereaved students after the Oklahoma bombing had higher trauma reactions than non-bereaved (although this possibly could be explained by the relationships not being so close).

In addition to age and gender, several risk factors for complicated grief reactions are present for this sample, e.g. the way the young people were killed and the age of the victims (Hardison et al., 2005; Lobb et al., 2010; Nakajima et al., 2012). The females in our sample were especially in the risk zone for severe problems in all domains, except functionality, compared to the males. Young girls tend to be more affected by stress, more dependent on others for support, have more intimate relationships with friend, and are more sensitive to others' expectations, which may imply different risks for males and females. Males may be at risk if they keep their problems to themselves, while females may be at risk if they are too dependent on external help (Coleman, 2011; Malone, 2012). Women's inclination towards worrying and rumination compared to men, may play a part in explaining the gender difference. This is a sample of young adults, and there is clearly a need to better understand how friends' reactions interact or relate to intensity of relationships formed at this age, according to their ability to regulate emotions, the type and circumstances of the death, previous exposure to trauma and loss, and the developmental tasks involved in entering adulthood (Kaplow & Layne, 2014). Young people could be overrating their reactions to negative phenomena, however since there were no significant correlations between age and

symptom severity this implies that friends have strong reactions independent of their age.

Previously it has been found that the loss of a friend can lead to more traumatic grief than the loss of a non-close family member (Holland & Neimeyer, 2011; Pfefferbaum et al., 2000; Ringler & Hayden, 2000; Servaty-Seib & Pistole, 2006–2007), but when comparing the scores of friends with those of close family members (bereaved parents and siblings) in our study, we found as high, and sometimes higher, scores in friends (Dyregrov, Dyregrov, & Kristensen, 2014). Among friends, 83% were in the risk zone for complicated grief, compared to 82% of the parents and 75% of the siblings. On trauma reactions implying risk for problems comparable to a PTSD diagnosis, 68% of the friends scored above the cut-off, compared to 61% of the parents and 72% of the siblings. On general psychological distress, 71% of friends scored above the cut-off, compared to 88% of the parents and 75% of the siblings. In particular, friends had reactions like longing and not being able to accept the loss, and had high levels of intrusive thoughts and avoidance symptoms. Many reported feelings of unreality and experienced traumatic reminders. In addition, they reported feelings of depression and worry, and had relatively high scores on suicidal ideation.

Mass killings and deaths by deliberate and violent murder is often handled as a crime against the «state», turning the attention to the law system, media coverage, and society's attempts to construct meaning following the tragedy (Armour, 2003). Victims are then left more alone with their grief, anger and other feelings after the loss. Media may reduce uncertainty about what happened, but the intense media coverage, where the event is kept active and alive, can also add to friends' symptom levels and affect wellbeing (Ahern et al., 2004; Holman et al., 2014). Many answered that they tried to limit exposure to the media coverage, but their questionnaire scores reflected a high intake of news, especially immediately after the incident. The media exposure with its almost constant reminders of the trauma may have made it more difficult to process the loss, as it may be difficult to grieve over your friend without being reminded of how he or she was killed. Also, constantly having your thoughts oriented towards the lost person may add to friends' grief.

Friends were not offered proactive follow-up and they were precluded from taking part in interventions and rituals, such as viewing the deceased, receiving information about the death, and visiting the site of the death, which may help the bereaved to grasp the reality of the loss, and facilitate acceptance, especially after traumatic and violent losses (Kristensen, Weiseth, & Heir, 2012). According to Prigerson and Maciejewski (2008) acceptance of the loss seems to correspond with a decline in grief-related distress. While the immediate family was likely to receive information from the police and authorities (Lereim et al., 2012), and had apt possibility to view their dead family member, friends did not have access to these helping measures. They had fewer opportunities to make the loss real by seeing the dead body, or by being told the facts about the killing by police and the autopsy personnel.

Over 60% of the friends in our study had severe or moderately severe functional impairment, especially reporting problems with ability to study or work and participating in social activities. Schools that had students affected by the terror-attack as survivors or bereaved after the Utøya killings were offered training to raise their awareness and knowledge about reactions and needs of survivors and bereaved family members. Unfortunately this assistance addressed only the survivors and bereaved siblings (Lereim et al., 2012), and did not take into account that friends could require similar attention. If in need of help, they often had to make contact on their own initiative, which is usually unlikely in this age group. The high symptomatology may therefore also reflect little utilization of help. Only about half of the friends had received help from professionals after the loss, despite the fact that many desired help (especially females). Many reported that they felt that school or work tasks were more demanding than before the loss. The fact that 39% reported lower grades correspond well with other Norwegian studies, e.g. the study of Bugge (1997), who found that 40% of grieving students reported lower grades in the first years after the loss. Many reported absence from school or work, and those who had the highest need for help were most likely to be absent from school or work. Some of the friends did receive some help from teachers and school counsellors, but many still wished for more help 1½ years after the loss. Dyregrov, Bie Wikander, and Vigerust (1999) found, in a study of classmates and good friends following the accidental death of an adolescent, that Norwegian students received good help and support from the school, but that friends from outside the deceased's class largely went unnoticed.

Previous research has shown that longer duration of help could be associated with a more positive present adjustment, but the duration of help received is often shorter than what bereaved adolescents want and need (Ringler & Hayden, 2000). If schools provide help, they are often more likely to do this immediately after a death, and students experiencing long-term effects of grief may be overlooked, as students without overt symptoms can be (Hedman, 2012; Pfefferbaum et al., 2000). Although teachers are expected to help grieving students, many feel that they are not trained to handle a student's death, and additional professional development in the area of crisis response training are often needed (Dyregrov, Dyregrov, & Idsoe, 2013; Hart & Garza, 2012).

A clear strength of this article is that it adds to our knowledge about an under-studied grieving population – close friends. A terror event resulting in extensive mass killings was unprecedented in Norway. However, as terror has become more frequent in Western countries, we considered it important to learn from the incident. Broadening the perspective from the family to friends can make us better prepared for future events. Another strength of the study that may increase the generalizability of the findings is the homogeneity of the sample, which we consider representative, within the context. Nonetheless, we have no possibilities to compare the sample to the rest of the population. However, the homogeneous background of the group may decrease the generalizability to studies of bereavement due to homicide or murder, with more

deprived and heterogeneous population groups. Another limitation to the study is the age range of the sample. We have chosen to define the sample as young adults since the larger proportion of the sample were between the age of 17 and 29. This article reflects the friends' situation at one time point, and does not show the natural progression of reactions over time. In addition, we have not measured, and therefore cannot control for, variables, such as previous traumatic events or losses.

Conclusion

Although depicted as «forgotten grievers» (Rickgarn, 1987; Ringler & Hayden, 2000; Sklar & Hartley, 1990), friends are heavily affected by their loss of a close relationship. This study shows that bereaved friends evidenced severe reactions to the loss of their friend, a loss even comparable to those of close family members. A lack of recognition for friends' grief is one possible explanation for the high symptom severity. The tendency not to acknowledge friends' grief was also reflected in how friends viewed themselves as bereaved. It is worrying to see that many of them felt that they could not seek help because of their role of being «only a friend». It is important to understand that the intensity of young people's grief reactions can partly be predicted by the emotional relationship they had to the deceased (e.g., Servaty-Seib & Pistole, 2006–2007). This calls for a broader perspective on who is affected when someone dies, and that follow-up measures should be broadened to include more than just the closest family. Finally, given the lack of a clear theoretical model for understanding the links between the violent death of a friend and the psychological problems outlined in the article, this as an area in need of further research.

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Citation

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Abstract

Psychosocial functioning after losing a close friend in an extreme terror incident

Do candidate risk factors for complicated grief, and associations with other problems after traumatic deaths (e.g., homicide, suicide, disaster, or accident), also apply to bereaved friends? In this article we present results from a study on 76 bereaved friends' situation after the killings at Utøya 22nd July 2011, and focus on grief and trauma reactions, psychological distress and psychosocial functioning. We observed that the bereaved friends, especially females, had high levels of both grief and trauma reactions that affected functioning and ability to study/work. These findings call for a broader perspective on who is affected when someone dies, and a recognition of grief after the loss of a friend.

Keywords: bereaved, friends, loss, terror, trauma.

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1981	Myhrer, T., Dr. philos.	Behavioral Studies after selective disruption of hippocampal inputs in albino rats.
1982	Svebak, S., Dr. philos.	The significance of motivation for task-induced tonic physiological changes.
1983	Myhre, G., Dr. philos.	The Biopsychology of behavior in captive Willow ptarmigan.
	Eide, R., Dr. philos.	PSYCHOSOCIAL FACTORS AND INDICES OF HEALTH RISKS. The relationship of psychosocial conditions to subjective complaints, arterial blood pressure, serum cholesterol, serum triglycerides and urinary catecholamines in middle aged populations in Western Norway.
	Værnes, R.J., Dr. philos.	Neuropsychological effects of diving.
1984	Kolstad, A., Dr. philos.	Til diskusjonen om sammenhengen mellom sosiale forhold og psykiske strukturer. En epidemiologisk undersøkelse blant barn og unge.
	Løberg, T., Dr. philos.	Neuropsychological assessment in alcohol dependence.
1985	Hellesnes, T., Dr. philos.	Læring og problemløsning. En studie av den perseptuelle analysens betydning for verbal læring.
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	Jellestad, F.K., Dr. philos.	Effects of neuron specific amygdala lesions on fear-motivated behavior in rats.
1987	Aarø, L.E., Dr. philos.	Health behaviour and socioeconomic Status. A survey among the adult population in Norway.
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	Vollmer, F.C., Dr. philos.	Essays on explanation in psychology.
	Ellertsen, B., Dr. philos.	Migraine and tension headache: Psychophysiology, personality and therapy.
1988	Kaufmann, A., Dr. philos.	Antisocial atferd hos ungdom. En studie av psykologiske determinanter.

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	Havik, O.E., Dr. philos.	After the myocardial infarction: A medical and psychological study with special emphasis on perceived illness.
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	Wold, B., Dr. psychol.	Lifestyles and physical activity. A theoretical and empirical analysis of socialization among children and adolescents.
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1991	Alsaker, F.D., Dr. philos.	Global negative self-evaluations in early adolescence.
	Kraft, P., Dr. philos.	AIDS prevention in Norway. Empirical studies on diffusion of knowledge, public opinion, and sexual behaviour.
	Endresen, I.M., Dr. philos.	Psychoimmunological stress markers in working life.
	Faleide, A.O., Dr. philos.	Asthma and allergy in childhood. Psychosocial and psychotherapeutic problems.
1992	Dalen, K., Dr. philos.	Hemispheric asymmetry and the Dual-Task Paradigm: An experimental approach.
	Bø, I.B., Dr. philos.	Ungdoms sosiale økologi. En undersøkelse av 14-16 åringers sosiale nettverk.
	Nivison, M.E., Dr. philos.	The relationship between noise as an experimental and environmental stressor, physiological changes and psychological factors.
	Torgersen, A.M., Dr. philos.	Genetic and environmental influence on temperamental behaviour. A longitudinal study of twins from infancy to adolescence.
1993	Larsen, S., Dr. philos.	Cultural background and problem drinking.
	Nordhus, I.H., Dr. philos.	Family caregiving. A community psychological study with special emphasis on clinical interventions.
	Thuen, F., Dr. psychol.	Accident-related behaviour among children and young adolescents: Prediction and prevention.
	Solheim, R., Dr. philos.	Spesifikke lærevansker. Diskrepanskriteriet anvendt i seleksjonsmetodikk.
	Johnsen, B.H., Dr. psychol.	Brain asymmetry and facial emotional expressions: Conditioning experiments.
1994	Tønnessen, F.E., Dr. philos.	The etiology of Dyslexia.
	Kvale, G., Dr. psychol.	Psychological factors in anticipatory nausea and vomiting in cancer chemotherapy.

	Asbjørnsen, A.E., Dr. psychol.	Structural and dynamic factors in dichotic listening: An interactional model.
	Bru, E., Dr. philos.	The role of psychological factors in neck, shoulder and low back pain among female hospitale staff.
	Braathen, E.T., Dr. psychol.	Prediction of exellence and discontinuation in different types of sport: The significance of motivation and EMG.
	Johannessen, B.F., Dr. philos.	Det flytende kjønnnet. Om lederskap, politikk og identitet.
1995	Sam, D.L., Dr. psychol.	Acculturation of young immigrants in Norway: A psychological and socio-cultural adaptation.
	Bjaalid, I.-K., Dr. philos	Component processes in word recognition.
	Martinsen, Ø., Dr. philos.	Cognitive style and insight.
	Nordby, H., Dr. philos.	Processing of auditory deviant events: Mismatch negativity of event-related brain potentials.
	Raaheim, A., Dr. philos.	Health perception and health behaviour, theoretical considerations, empirical studies, and practical implications.
	Seltzer, W.J., Dr.philos.	Studies of Psychocultural Approach to Families in Therapy.
	Brun, W., Dr.philos.	Subjective conceptions of uncertainty and risk.
	Aas, H.N., Dr. psychol.	Alcohol expectancies and socialization: Adolescents learning to drink.
	Bjørkly, S., Dr. psychol.	Diagnosis and prediction of intra-institutional aggressive behaviour in psychotic patients
1996	Anderssen, N., Dr. psychol.	Physical activity of young people in a health perspective: Stability, change and social influences.
	Sandal, Gro Mjeldheim, Dr. psychol.	Coping in extreme environments: The role of personality.
	Strumse, Einar, Dr. philos.	The psychology of aesthetics: explaining visual preferences for agrarian landscapes in Western Norway.
	Hestad, Knut, Dr. philos.	Neuropsychological deficits in HIV-1 infection.
	Lugoe, L.Wycliffe, Dr. philos.	Prediction of Tanzanian students' HIV risk and preventive behaviours
	Sandvik, B. Gunnhild, Dr. philos.	Fra distriktsjordmor til institusjonsjordmor. Fremveksten av en profesjon og en profesjonsutdanning
	Lie, Gro Therese, Dr. psychol.	The disease that dares not speak its name: Studies on factors of importance for coping with HIV/AIDS in Northern Tanzania
	Øygaard, Lisbet, Dr. philos.	Health behaviors among young adults. A psychological and sociological approach
	Stormark, Kjell Morten, Dr. psychol.	Emotional modulation of selective attention: Experimental and clinical evidence.

- Einarsen, Ståle, Dr. psychol. Bullying and harassment at work: epidemiological and psychosocial aspects.
- 1997**
- Knivsberg, Ann-Mari, Dr. philos. Behavioural abnormalities and childhood psychopathology: Urinary peptide patterns as a potential tool in diagnosis and remediation.
- Eide, Arne H., Dr. philos. Adolescent drug use in Zimbabwe. Cultural orientation in a global-local perspective and use of psychoactive substances among secondary school students.
- Sørensen, Marit, Dr. philos. The psychology of initiating and maintaining exercise and diet behaviour.
- Skjæveland, Oddvar, Dr. psychol. Relationships between spatial-physical neighborhood attributes and social relations among neighbors.
- Zewdie, Teka, Dr. philos. Mother-child relational patterns in Ethiopia. Issues of developmental theories and intervention programs.
- Wilhelmsen, Britt Unni, Dr. philos. Development and evaluation of two educational programmes designed to prevent alcohol use among adolescents.
- Manger, Terje, Dr. philos. Gender differences in mathematical achievement among Norwegian elementary school students.
- 1998**
- V Lindstrøm, Torill Christine, Dr. philos. «Good Grief»: Adapting to Bereavement.
- Skogstad, Anders, Dr. philos. Effects of leadership behaviour on job satisfaction, health and efficiency.
- Haldorsen, Ellen M. Håland, Dr. psychol. Return to work in low back pain patients.
- Besemer, Susan P., Dr. philos. Creative Product Analysis: The Search for a Valid Model for Understanding Creativity in Products.
- H Winje, Dagfinn, Dr. psychol. Psychological adjustment after severe trauma. A longitudinal study of adults' and children's posttraumatic reactions and coping after the bus accident in Måbødalen, Norway 1988.
- Vosburg, Suzanne K., Dr. philos. The effects of mood on creative problem solving.
- Eriksen, Hege R., Dr. philos. Stress and coping: Does it really matter for subjective health complaints?
- Jakobsen, Reidar, Dr. psychol. Empiriske studier av kunnskap og holdninger om hiv/aids og den normative seksuelle utvikling i ungdomsårene.
- 1999**
- V Mikkelsen, Aslaug, Dr. philos. Effects of learning opportunities and learning climate on occupational health.
- Samdal, Oddrun, Dr. philos. The school environment as a risk or resource for students' health-related behaviours and subjective well-being.
- Friestad, Christine, Dr. philos. Social psychological approaches to smoking.

	Ekeland, Tor-Johan, Dr. philos.	Meining som medisin. Ein analyse av placebofenomenet og implikasjoner for terapi og terapeutiske teoriar.
H	Saban, Sara, Dr. psychol.	Brain Asymmetry and Attention: Classical Conditioning Experiments.
	Carlsten, Carl Thomas, Dr. philos.	God lesing – God læring. En aksjonsrettet studie av undervisning i fagtekstlesing.
	Dundas, Ingrid, Dr. psychol.	Functional and dysfunctional closeness. Family interaction and children's adjustment.
	Engen, Liv, Dr. philos.	Kartlegging av leseferdighet på småskoletrinnet og vurdering av faktorer som kan være av betydning for optimal leseutvikling.
2000		
V	Hovland, Ole Johan, Dr. philos.	Transforming a self-preserving "alarm" reaction into a self-defeating emotional response: Toward an integrative approach to anxiety as a human phenomenon.
	Lillejord, Sølvi, Dr. philos.	Handlingsrasjonalitet og spesialundervisning. En analyse av aktørperspektiver.
	Sandell, Ove, Dr. philos.	Den varme kunnskapen.
	Oftedal, Marit Petersen, Dr. philos.	Diagnostisering av ordavkodingsvansker: En prosessanalytisk tilnæringsmåte.
H	Sandbak, Tone, Dr. psychol.	Alcohol consumption and preference in the rat: The significance of individual differences and relationships to stress pathology
	Eid, Jarle, Dr. psychol.	Early predictors of PTSD symptom reporting; The significance of contextual and individual factors.
2001		
V	Skinstad, Anne Helene, Dr. philos.	Substance dependence and borderline personality disorders.
	Binder, Per-Einar, Dr. psychol.	Individet og den meningsbærende andre. En teoretisk undersøkelse av de mellommenneskelige forutsetningene for psykisk liv og utvikling med utgangspunkt i Donald Winnicotts teori.
	Roald, Ingvild K., Dr. philos.	Building of concepts. A study of Physics concepts of Norwegian deaf students.
H	Fekadu, Zelalem W., Dr. philos.	Predicting contraceptive use and intention among a sample of adolescent girls. An application of the theory of planned behaviour in Ethiopian context.
	Melesse, Fantu, Dr. philos.	The more intelligent and sensitive child (MISC) mediational intervention in an Ethiopian context: An evaluation study.
	Råheim, Målfrid, Dr. philos.	Kvinnerens kroppserfaring og livssammenheng. En fenomenologisk – hermeneutisk studie av friske kvinner og kvinner med kroniske muskelsmerter.
	Engelsen, Birthe Kari, Dr. psychol.	Measurement of the eating problem construct.
	Lau, Bjørn, Dr. philos.	Weight and eating concerns in adolescence.

2002

- V Ihlebæk, Camilla, Dr. philos. Epidemiological studies of subjective health complaints.
- Rosén, Gunnar O. R., Dr. philos. The phantom limb experience. Models for understanding and treatment of pain with hypnosis.
- Høines, Marit Johnsen, Dr. philos. Fleksible språkrrom. Matematikk læring som tekstutvikling.
- Anthun, Roald Andor, Dr. philos. School psychology service quality. Consumer appraisal, quality dimensions, and collaborative improvement potential
- Pallesen, Ståle, Dr. psychol. Insomnia in the elderly. Epidemiology, psychological characteristics and treatment.
- Midthassel, Unni Vere, Dr. philos. Teacher involvement in school development activity. A study of teachers in Norwegian compulsory schools
- Kallestad, Jan Helge, Dr. philos. Teachers, schools and implementation of the Olweus Bullying Prevention Program.
- H Ofte, Sonja Helgesen, Dr. psychol. Right-left discrimination in adults and children.
- Netland, Marit, Dr. psychol. Exposure to political violence. The need to estimate our estimations.
- Diseth, Åge, Dr. psychol. Approaches to learning: Validity and prediction of academic performance.
- Bjuland, Raymond, Dr. philos. Problem solving in geometry. Reasoning processes of student teachers working in small groups: A dialogical approach.

2003

- V Arefjord, Kjersti, Dr. psychol. After the myocardial infarction – the wives' view. Short- and long-term adjustment in wives of myocardial infarction patients.
- Ingjaldsson, Jón Þorvaldur, Dr. psychol. Unconscious Processes and Vagal Activity in Alcohol Dependency.
- Holden, Børge, Dr. philos. Følger av atferdsanalytiske forklaringer for atferdsanalysens tilnærming til utforming av behandling.
- Holsen, Ingrid, Dr. philos. Depressed mood from adolescence to 'emerging adulthood'. Course and longitudinal influences of body image and parent-adolescent relationship.
- Hammar, Åsa Karin, Dr. psychol. Major depression and cognitive dysfunction- An experimental study of the cognitive effort hypothesis.
- Sprugevica, Ieva, Dr. philos. The impact of enabling skills on early reading acquisition.
- Gabrielsen, Egil, Dr. philos. LESE FOR LIVET. Lesekompetansen i den norske voksenbefolkningen sett i lys av visjonen om en enhetsskole.
- H Hansen, Anita Lill, Dr. psychol. The influence of heart rate variability in the regulation of attentional and memory processes.
- Dyregrov, Kari, Dr. philos. The loss of child by suicide, SIDS, and accidents: Consequences, needs and provisions of help.

2004

V

- Torsheim, Torbjørn, Dr. psychol. Student role strain and subjective health complaints: Individual, contextual, and longitudinal perspectives.
- Haugland, Bente Storm Mowatt Dr. psychol. Parental alcohol abuse. Family functioning and child adjustment.
- Milde, Anne Marita, Dr. psychol. Ulcerative colitis and the role of stress. Animal studies of psychobiological factors in relationship to experimentally induced colitis.
- Stornes, Tor, Dr. philos. Socio-moral behaviour in sport. An investigation of perceptions of sportspersonship in handball related to important factors of socio-moral influence.
- Mæhle, Magne, Dr. philos. Re-inventing the child in family therapy: An investigation of the relevance and applicability of theory and research in child development for family therapy involving children.
- Kobbeltvedt, Therese, Dr. psychol. Risk and feelings: A field approach.

2004

H

- Thomsen, Tormod, Dr. psychol. Localization of attention in the brain.
- Løberg, Else-Marie, Dr. psychol. Functional laterality and attention modulation in schizophrenia: Effects of clinical variables.
- Kyrkjebø, Jane Mikkelsen, Dr. philos. Learning to improve: Integrating continuous quality improvement learning into nursing education.
- Laumann, Karin, Dr. psychol. Restorative and stress-reducing effects of natural environments: Experiential, behavioural and cardiovascular indices.
- Holgersen, Helge, PhD Mellom oss - Essay i relasjonell psykoanalyse.

2005

V

- Hetland, Hilde, Dr. psychol. Leading to the extraordinary? Antecedents and outcomes of transformational leadership.
- Iversen, Anette Christine, Dr. philos. Social differences in health behaviour: the motivational role of perceived control and coping.

2005

H

- Mathisen, Gro Ellen, PhD Climates for creativity and innovation: Definitions, measurement, predictors and consequences.
- Sævi, Tone, Dr. philos. Seeing disability pedagogically – The lived experience of disability in the pedagogical encounter.
- Wiiium, Nora, PhD Intrapersonal factors, family and school norms: combined and interactive influence on adolescent smoking behaviour.
- Kanagaratnam, Pushpa, PhD Subjective and objective correlates of Posttraumatic Stress in immigrants/refugees exposed to political violence.
- Larsen, Torill M. B. , PhD Evaluating principals` and teachers` implementation of Second Step. A case study of four Norwegian primary schools.
- Bancila, Delia, PhD Psychosocial stress and distress among Romanian adolescents and adults.

2006

V

- Hillestad, Torgeir Martin, Dr. philos. Normalitet og avvik. Forutsetninger for et objektivt psykopatologisk avviksbegrep. En psykologisk, sosial, erkjennelsesteoretisk og teorihistorisk framstilling.
- Nordanger, Dag Øystein, Dr. psychol. Psychosocial discourses and responses to political violence in post-war Tigray, Ethiopia.
- Rimol, Lars Morten, PhD Behavioral and fMRI studies of auditory laterality and speech sound processing.
- Krumsvik, Rune Johan, Dr. philos. ICT in the school. ICT-initiated school development in lower secondary school.
- Norman, Elisabeth, Dr. psychol. Gut feelings and unconscious thought: An exploration of fringe consciousness in implicit cognition.
- Israel, K Pravin, Dr. psychol. Parent involvement in the mental health care of children and adolescents. Empirical studies from clinical care setting.
- Glasø, Lars, PhD Affects and emotional regulation in leader-subordinate relationships.
- Knutsen, Ketil, Dr. philos. HISTORIER UNGDOM LEVER – En studie av hvordan ungdommer bruker historie for å gjøre livet meningsfullt.
- Matthiesen, Stig Berge, PhD Bullying at work. Antecedents and outcomes.

2006

H

- Gramstad, Arne, PhD Neuropsychological assessment of cognitive and emotional functioning in patients with epilepsy.
- Bendixen, Mons, PhD Antisocial behaviour in early adolescence: Methodological and substantive issues.
- Mrumbi, Khalifa Maulid, PhD Parental illness and loss to HIV/AIDS as experienced by AIDS orphans aged between 12-17 years from Temeke District, Dar es Salaam, Tanzania: A study of the children's psychosocial health and coping responses.
- Hetland, Jørn, Dr. psychol. The nature of subjective health complaints in adolescence: Dimensionality, stability, and psychosocial predictors
- Kakoko, Deodatus Conatus Vitalis, PhD Voluntary HIV counselling and testing service uptake among primary school teachers in Mwanza, Tanzania: assessment of socio-demographic, psychosocial and socio-cognitive aspects
- Mykletun, Arnstein, Dr. psychol. Mortality and work-related disability as long-term consequences of anxiety and depression: Historical cohort designs based on the HUNT-2 study
- Sivertsen, Børge, PhD Insomnia in older adults. Consequences, assessment and treatment.

2007

V

- Singhammer, John, Dr. philos. Social conditions from before birth to early adulthood – the influence on health and health behaviour
- Janvin, Carmen Ani Cristea, PhD Cognitive impairment in patients with Parkinson's disease: profiles and implications for prognosis

	Braarud, Hanne Cecilie, Dr.psychol.	Infant regulation of distress: A longitudinal study of transactions between mothers and infants
	Tveito, Torill Helene, PhD	Sick Leave and Subjective Health Complaints
	Magnussen, Liv Heide, PhD	Returning disability pensioners with back pain to work
	Thuen, Elin Marie, Dr.philos.	Learning environment, students' coping styles and emotional and behavioural problems. A study of Norwegian secondary school students.
	Solberg, Ole Asbjørn, PhD	Peacekeeping warriors – A longitudinal study of Norwegian peacekeepers in Kosovo
2007		
H	Søreide, Gunn Elisabeth, Dr.philos.	Narrative construction of teacher identity
	Svensen, Erling, PhD	WORK & HEALTH. Cognitive Activation Theory of Stress applied in an organisational setting.
	Øverland, Simon Nygaard, PhD	Mental health and impairment in disability benefits. Studies applying linkages between health surveys and administrative registries.
	Eichele, Tom, PhD	Electrophysiological and Hemodynamic Correlates of Expectancy in Target Processing
	Børhaug, Kjetil, Dr.philos.	Oppseding til demokrati. Ein studie av politisk oppseding i norsk skule.
	Eikeland, Thorleif, Dr.philos.	Om å vokse opp på barnehjem og på sykehus. En undersøkelse av barnehjemsbarns opplevelser på barnehjem sammenholdt med sanatoriebarns beskrivelse av langvarige sykehusopphold – og et forsøk på forklaring.
	Wadel, Carl Cato, Dr.philos.	Medarbeidersamhandling og medarbeiderledelse i en lagbasert organisasjon
	Vinje, Hege Forbech, PhD	Thriving despite adversity: Job engagement and self-care among community nurses
	Noort, Maurits van den, PhD	Working memory capacity and foreign language acquisition
2008		
V	Breivik, Kyrre, Dr.psychol.	The Adjustment of Children and Adolescents in Different Post-Divorce Family Structures. A Norwegian Study of Risks and Mechanisms.
	Johnsen, Grethe E., PhD	Memory impairment in patients with posttraumatic stress disorder
	Sætrevik, Bjørn, PhD	Cognitive Control in Auditory Processing
	Carvalho, Susana Fonseca, PhD	Prevention of bullying in schools: an ecological model
2008		
H	Brønnick, Kolbjørn Selvåg	Attentional dysfunction in dementia associated with Parkinson's disease.

	Posserud, Maj-Britt Rocio	Epidemiology of autism spectrum disorders
	Haug, Ellen	Multilevel correlates of physical activity in the school setting
	Skjerve, Arvid	Assessing mild dementia – a study of brief cognitive tests.
	Kjønniksen, Lise	The association between adolescent experiences in physical activity and leisure time physical activity in adulthood: a ten year longitudinal study
	Gundersen, Hilde	The effects of alcohol and expectancy on brain function
	Omvik, Siri	Insomnia – a night and day problem
2009		
V	Molde, Helge	Pathological gambling: prevalence, mechanisms and treatment outcome.
	Foss, Else	Den omsorgsfulle væremåte. En studie av voksnes væremåte i forhold til barn i barnehagen.
	Westrheim, Kariane	Education in a Political Context: A study of Knowledge Processes and Learning Sites in the PKK.
	Wehling, Eike	Cognitive and olfactory changes in aging
	Wangberg, Silje C.	Internet based interventions to support health behaviours: The role of self-efficacy.
	Nielsen, Morten B.	Methodological issues in research on workplace bullying. Operationalisations, measurements and samples.
	Sandu, Anca Larisa	MRI measures of brain volume and cortical complexity in clinical groups and during development.
	Guribye, Eugene	Refugees and mental health interventions
	Sørensen, Lin	Emotional problems in inattentive children – effects on cognitive control functions.
	Tjomsland, Hege E.	Health promotion with teachers. Evaluation of the Norwegian Network of Health Promoting Schools: Quantitative and qualitative analyses of predisposing, reinforcing and enabling conditions related to teacher participation and program sustainability.
	Helleve, Ingrid	Productive interactions in ICT supported communities of learners
2009		
H	Skorpen, Aina Øye, Christine	Dagliglivet i en psykiatrisk institusjon: En analyse av miljøterapeutiske praksiser
	Andreassen, Cecilie Schou	WORKAHOLISM – Antecedents and Outcomes
	Stang, Ingun	Being in the same boat: An empowerment intervention in breast cancer self-help groups
	Sequeira, Sarah Dorothee Dos Santos	The effects of background noise on asymmetrical speech perception

	Kleiven, Jo, dr.philos.	The Lillehammer scales: Measuring common motives for vacation and leisure behavior
	Jónsdóttir, Guðrún	Dubito ergo sum? Ni jenter møter naturfaglig kunnskap.
	Hove, Oddbjørn	Mental health disorders in adults with intellectual disabilities - Methods of assessment and prevalence of mental health disorders and problem behaviour
	Wageningen, Heidi Karin van	The role of glutamate on brain function
	Bjørkvik, Jofrid	God nok? Selvaktelse og interpersonlig fungering hos pasienter innen psykisk helsevern: Forholdet til diagnoser, symptomer og behandlingsutbytte
	Andersson, Martin	A study of attention control in children and elderly using a forced-attention dichotic listening paradigm
	Almás, Aslaug Grov	Teachers in the Digital Network Society: Visions and Realities. A study of teachers' experiences with the use of ICT in teaching and learning.
	Ulvik, Marit	Lærerutdanning som dannning? Tre stemmer i diskusjonen
2010		
V	Skår, Randi	Læringsprosesser i sykepleieres profesjonsutøvelse. En studie av sykepleieres læringserfaringer.
	Roald, Knut	Kvalitetsvurdering som organisasjonslæring mellom skole og skoleeigar
	Lunde, Linn-Heidi	Chronic pain in older adults. Consequences, assessment and treatment.
	Danielsen, Anne Grete	Perceived psychosocial support, students' self-reported academic initiative and perceived life satisfaction
	Hysing, Mari	Mental health in children with chronic illness
	Olsen, Olav Kjellevold	Are good leaders moral leaders? The relationship between effective military operational leadership and morals
	Riese, Hanne	Friendship and learning. Entrepreneurship education through mini-enterprises.
	Holthe, Asle	Evaluating the implementation of the Norwegian guidelines for healthy school meals: A case study involving three secondary schools
H	Hauge, Lars Johan	Environmental antecedents of workplace bullying: A multi-design approach
	Bjørkelo, Brita	Whistleblowing at work: Antecedents and consequences
	Reme, Silje Endresen	Common Complaints – Common Cure? Psychiatric comorbidity and predictors of treatment outcome in low back pain and irritable bowel syndrome
	Helland, Wenche Andersen	Communication difficulties in children identified with psychiatric problems

Beneventi, Harald	Neuronal correlates of working memory in dyslexia
Thygesen, Elin	Subjective health and coping in care-dependent old persons living at home
Aanes, Mette Marthinussen	Poor social relationships as a threat to belongingness needs. Interpersonal stress and subjective health complaints: Mediating and moderating factors.
Anker, Morten Gustav	Client directed outcome informed couple therapy
Bull, Torill	Combining employment and child care: The subjective well-being of single women in Scandinavia and in Southern Europe
Viig, Nina Grieg	Tilrettelegging for læreres deltakelse i helsefremmende arbeid. En kvalitativ og kvantitativ analyse av sammenhengen mellom organisatoriske forhold og læreres deltakelse i utvikling og implementering av Europeisk Nettverk av Helsefremmende Skoler i Norge
Wolff, Katharina	To know or not to know? Attitudes towards receiving genetic information among patients and the general public.
Ogden, Terje, dr.philos.	Familiebasert behandling av alvorlige atferdsproblemer blant barn og ungdom. Evaluering og implementering av evidensbaserte behandlingsprogrammer i Norge.
Solberg, Mona Elin	Self-reported bullying and victimisation at school: Prevalence, overlap and psychosocial adjustment.
2011	
V	
Bye, Hege Høivik	Self-presentation in job interviews. Individual and cultural differences in applicant self-presentation during job interviews and hiring managers' evaluation
Notelaers, Guy	Workplace bullying. A risk control perspective.
Moltu, Christian	Being a therapist in difficult therapeutic impasses. A hermeneutic phenomenological analysis of skilled psychotherapists' experiences, needs, and strategies in difficult therapies ending well.
Myrseth, Helga	Pathological Gambling - Treatment and Personality Factors
Schanche, Elisabeth	From self-criticism to self-compassion. An empirical investigation of hypothesized change processes in the Affect Phobia Treatment Model of short-term dynamic psychotherapy for patients with Cluster C personality disorders.
Våpenstad, Eystein Victor, dr.philos.	Det tempererte nærvær. En teoretisk undersøkelse av psykoterapeutens subjektivitet i psykoanalyse og psykoanalytisk psykoterapi.
Haukebø, Kristin	Cognitive, behavioral and neural correlates of dental and intra-oral injection phobia. Results from one treatment and one fMRI study of randomized, controlled design.
Harris, Anette	Adaptation and health in extreme and isolated environments. From 78°N to 75°S.

	Bjørknes, Ragnhild	Parent Management Training-Oregon Model: intervention effects on maternal practice and child behavior in ethnic minority families
	Mamen, Asgeir	Aspects of using physical training in patients with substance dependence and additional mental distress
	Espevik, Roar	Expert teams: Do shared mental models of team members make a difference
	Haara, Frode Olav	Unveiling teachers' reasons for choosing practical activities in mathematics teaching
2011		
H	Hauge, Hans Abraham	How can employee empowerment be made conducive to both employee health and organisation performance? An empirical investigation of a tailor-made approach to organisation learning in a municipal public service organisation.
	Melkevik, Ole Rogstad	Screen-based sedentary behaviours: pastimes for the poor, inactive and overweight? A cross-national survey of children and adolescents in 39 countries.
	Vøllestad, Jon	Mindfulness-based treatment for anxiety disorders. A quantitative review of the evidence, results from a randomized controlled trial, and a qualitative exploration of patient experiences.
	Tolo, Astrid	Hvordan blir lærerkompetanse konstruert? En kvalitativ studie av PPU-studenters kunnskapsutvikling.
	Saus, Evelyn-Rose	Training effectiveness: Situation awareness training in simulators
	Nordgreen, Tine	Internet-based self-help for social anxiety disorder and panic disorder. Factors associated with effect and use of self-help.
	Munkvold, Linda Helen	Oppositional Defiant Disorder: Informant discrepancies, gender differences, co-occurring mental health problems and neurocognitive function.
	Christiansen, Øivin	Når barn plasseres utenfor hjemmet: beslutninger, forløp og relasjoner. Under barnevernets (ved)tak.
	Brunborg, Geir Scott	Conditionability and Reinforcement Sensitivity in Gambling Behaviour
	Hystad, Sigurd William	Measuring Psychological Resiliency: Validation of an Adapted Norwegian Hardiness Scale
2012		
V	Roness, Dag	Hvorfor bli lærer? Motivasjon for utdanning og utøving.
	Fjermestad, Krister Westlye	The therapeutic alliance in cognitive behavioural therapy for youth anxiety disorders
	Jenssen, Eirik Sørnes	Tilpasset opplæring i norsk skole: politikers, skolelederes og læreres handlingsvalg
	Saksvik-Lehouillier, Ingvild	Shift work tolerance and adaptation to shift work among offshore workers and nurses

	Johansen, Venke Frederike	Når det intime blir offentlig. Om kvinners åpenhet om brystkreft og om markedsføring av brystkreftsaken.
	Herheim, Rune	Pupils collaborating in pairs at a computer in mathematics learning: investigating verbal communication patterns and qualities
	Vie, Tina Løkke	Cognitive appraisal, emotions and subjective health complaints among victims of workplace bullying: A stress-theoretical approach
	Jones, Lise Øen	Effects of reading skills, spelling skills and accompanying efficacy beliefs on participation in education. A study in Norwegian prisons.
2012		
H	Danielsen, Yngvild Sørebo	Childhood obesity – characteristics and treatment. Psychological perspectives.
	Horverak, Jøri Gytre	Sense or sensibility in hiring processes. Interviewee and interviewer characteristics as antecedents of immigrant applicants' employment probabilities. An experimental approach.
	Jøsendal, Ola	Development and evaluation of BE smokeFREE, a school-based smoking prevention program
	Osnes, Berge	Temporal and Posterior Frontal Involvement in Auditory Speech Perception
	Drageset, Sigrunn	Psychological distress, coping and social support in the diagnostic and preoperative phase of breast cancer
	Aasland, Merethe Schanke	Destructive leadership: Conceptualization, measurement, prevalence and outcomes
	Bakibinga, Pauline	The experience of job engagement and self-care among Ugandan nurses and midwives
	Skogen, Jens Christoffer	Foetal and early origins of old age health. Linkage between birth records and the old age cohort of the Hordaland Health Study (HUSK)
	Leveresen, Ingrid	Adolescents' leisure activity participation and their life satisfaction: The role of demographic characteristics and psychological processes
	Hanss, Daniel	Explaining sustainable consumption: Findings from cross-sectional and intervention approaches
	Rød, Per Arne	Barn i klem mellom foreldrekonflikter og samfunnsmessig beskyttelse
2013		
V	Mentzoni, Rune Aune	Structural Characteristics in Gambling
	Knudsen, Ann Kristin	Long-term sickness absence and disability pension award as consequences of common mental disorders. Epidemiological studies using a population-based health survey and official ill health benefit registries.
	Strand, Mari	Emotional information processing in recurrent MDD

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