Kandidatafhandling i Psykologi


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# Dissociative Symptoms in Patients with Post Traumatic Stress Disorder: An Empirical Study of Dissociative Symptoms as a Predictor for Treatment Outcome

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## Abstract

A recurrent theme in clinical literature is that dissociative symptomatology is a reaction to traumatic events. Dissociative symptoms are often perceived as a contraindication for exposure-based treatments of posttraumatic stress disorder (PTSD) despite limited empirical evidence. The purpose of this paper is to examine whether dissociative symptoms predict the treatment outcome of Cognitive Therapy for PTSD (CT-PTSD) and Eye-Movement Desensitization and Reprocessing (EMDR) in 47 outpatients with PTSD. The results show that dissociative symptoms do not predict the treatment outcome ($p$= .246, $\eta^2$ = .033). However, when examining a minor subgroup of patients ($n$ = 14), the findings suggest that higher dissociative symptoms do have an effect on the treatment outcome ($p$= .054, $\eta^2$ = .275). This result is limited and needs to be replicated in a bigger sample. Furthermore, the findings and the implication for theory and practice are discussed.


*Keywords: post-traumatic stress disorder, trauma-focused treatment, cognitive therapy for PTSD, eye-movement desensitization and reprocessing, dissociative symptoms*

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# 0. INTRODUCTION

Signe, a 24-year-old woman was referred to a psychiatric outpatient clinic in Norway. Since a close family member repeatedly raped her in childhood, she has experienced a variety of symptoms. She often has nightmares of being assaulted and has also had several unexpected panic attacks. She has let all of her hobbies go, including quitting the soccer team and she has left university. Signe says that she feels numb and disconnected and that she frequently has a feeling that the world seems unreal. She also says that she find herself doing things that she does not remember doing almost every day.

Signe has not been able to talk about the assault with her general practitioner and has difficulty recalling the event. She avoids all of the memories and says that it did not feel as it happened to her. The therapist who met Signe at the outpatient clinic, quickly suspects that she may have a posttraumatic stress disorder diagnosis. A brief screening instrument supported the assumption and the therapists therefore starts with trauma-focused treatment. In line with the available guidelines, the first phase of the treatment was used to establish relationship and emotional stabilization. Signe did not experience any changes in her symptoms during this phase and the therapist wondered if it was time to move on to direct exposure of the traumatic memory. The therapist was, however, worried about Signe's description of disconnectedness and numbness - was it dissociative experiences? Would exposure worsen Signe's symptoms?

Traumatic events are common in most societies. Every day soldiers are sent out to war, putting their own physical and mental health at risk. There are car accidents where individuals are near death and/or fear for their lives and there are violence and rapes. National studies have found that up to 22% of Norwegian children experience some forms of sexual abuse during childhood (Mossige & Stefansen, 2007) and in 2011, the Norwegian police registered 495 survivors after a heavily armed extremist threatened the crowd and murdered 69 individuals on Utøya Island in Norway (Hafstad, Thoresen, Wentzel-Larsen, Maercker & Dyb, 2017).

Traumatic events affect everyone differently. While some individuals experience traumatic events without seeming to develop lasting effect of the traumatization, others develop posttraumatic stress disorder (PTSD) and have difficulty in living as before the trauma exposure. A recent study on the epidemiology of post-traumatic stress disorder in Norway reported that PTSD and traumatic exposure add considerably to the national burden of disease (Lassemo, Sandanger, Nygård & Sørgaard, 2017). The study suggested that a total of almost 55.000 Norwegians were suffering from PTSD and that the individuals struggle with the symptoms for 11 years or more (Lassemo et al., 2017). Trauma has an enormous impact on both individuals and society as a whole (Davidson, 2000). For an individual, PTSD may lead to a significant reduction in both the quality of life and functional capability. In

addition, untreated PTSD has hidden cost to the society, including increased lost earnings and healthcare costs. For example are alcohol abuse, dependence and suicide attempts associated with PTSD and have an enormous impact on healthcare costs (Davidson, 2000).

Trauma-focused psychological treatments have proven to be effective in reducing PTSD symptoms. However, some patients do not sufficiently profit from exposure therapy (Bradley, Green, Russ, Dutra & Westen, 2005). It has therefore been argued that it is important to identify these patients from both a theoretical and clinical point of view (Hagenaars, van Minnen & Hoogduin, 2010). A number of researchers and trauma therapists have suggested that persistent dissociation is an important moderator of treatment outcomes for PTSD (Halvorsen et al., 2014). The existing research on the influence of dissociation of treatment outcomes for PTSD has conflicting research. This argues that more knowledge about dissociations impact on PTSD treatment is needed.

# 1. POSTTRAUMATIC STRESS DISORDER

## 1.1 The PTSD-diagnosis in DSM-5

The *Diagnostic and Statistical Manual of Mental Disorders* fifth edition (DSM-5) defines PTSD as a mental disorder that may develop following exposure to a traumatic event (American Psychiatric Association [APA], 2013). To be diagnosed with PTSD, an individual must meet a number of criteria, including exposure to one or more traumatic events (criteria A). The individual is either directly exposed to trauma, witnessing in person an event that happened to someone else, learning about the violent or unexpected death of a friend or a family member or experiencing repeated or extreme exposure to aversive details of a traumatic event (APA, 2013).

In addition to trauma exposure, diagnosis for PTSD requires a combination of strong and persistent symptoms from four specific clusters: re-experiencing, avoidance, negative alterations in cognitions and mood and hyperarousal symptoms (APA 2013). The first symptom cluster (criteria B) is about re-experiencing the traumatic event by persistent intrusion symptoms in one or more of the following ways: recurrent, involuntary and intrusive distressing memories of the traumatic event; traumatic nightmares; dissociative reactions (e.g., flashbacks) which may occur on a continuum from brief episodes to complete loss of consciousness; intense or prolonged distress and/or marked physiological reactivity after exposure to trauma-related stimuli (APA, 2013). The second symptom cluster (criteria C) involves persistent effortful avoidance of distressing trauma-related stimuli after the event in one or more of the following ways: avoidance of trauma-related thoughts or feelings; avoidance of trauma-related external reminders, such as persons or places that are associated with the traumatic event (APA, 2013).

The third symptom cluster (criteria D) involves negative alterations in cognitions and mood, in at least two or more of the following ways: inability to recall features of the traumatic event (e.g., dissociative amnesia); persistent negative beliefs and expectations about oneself, others or the world; persistent distorted blame of self or others for causing the traumatic event or for resulting consequences; persistent negative trauma-related emotions, such as fear, horror, anger, guilt or shame; markedly diminished interest in significant activities; feeling alienated from others (e.g., detachment or estrangement); persistent inability to experience positive emotions (APA, 2013). The fourth and last symptom cluster (criteria E) involves alterations in arousal and reactivity in two or more of the following ways: irritable or aggressive behavior; self-destructive or reckless behavior; hypervigilance; exaggerated startle response; problems in concentration; sleep disturbance (APA, 2013).

Furthermore, the symptoms shall have begun or worsened after the traumatic event and must be present for at least 1 month after the event (criteria F). PTSD symptoms usually begin within 3 months after the trauma exposure, but there may be a delayed expression of months or years. If the full diagnostic criteria are not met until at least 6 months after the event, this shall be specified (APA, 2013). In addition, the symptoms must cause significant impairment in social, occupational or other important areas of functioning (criteria G) and should not be caused by drug or alcohol abuse, medication or other medical disorders (criteria H: APA, 2013).

The DSM-5 recently extended the PTSD diagnosis to include a dissociative subtype (APA, 2013). The subtype includes two dissociative symptoms: depersonalization (i.e., feeling as if oneself is not real) and derealization (i.e., feeling as if the world is not real; Halvorsen, Stenmark, Neuner & Nordahl, 2014). One major rationale for this inclusion is the assumption that those with higher dissociative symptoms may respond differently to psychotherapy due reduced acquisition of new inhibitory learning (Lanius, Brand, Vermetten, Frewen & Spiegel, 2012). However, existing research is not clear. While several researchers have not found empirical evidence for that dissociation predicts outcome for trauma treatment (e.g., Cloitre, Petkova, Wang & Lu Lassell, 2012; Hagenaars et al., 2010; Halvorsen et al., 2014; Resick, Suvak, Jonides, Mitchell & Iverson, 2012), others have found empirical evidence for that dissociation predicts treatment nonresponse (e.g., Bae, Kim & Park, 2016; Price, Kearns, Houry & Rothbaum, 2014).

### 1.2 From trauma to PTSD

The DSM-5 is a recognized diagnostic tool (Regier, Kuhl & Kupfer, 2013). However, it is important to be aware that the above description of PTSD gives a simplified picture of the disorder. For example, the development of the diagnosis looks simple. The individual is exposed to a traumatic event that meets the A-criteria and subsequently develops a number of symptoms, which are severe enough to meet the diagnostic criteria. Research has found the development to be complex and dynamic, illustrated by that the development of PTSD in a long-term perspective depends on many factors (Bisson, 2017; Brewin, Andrews & Valentine, 2000; Ozer et al., 2003; Yehuda et al., 2015). There are a combination of features of the traumatic event, traits of the individual and the recovery environment that affects the development of persistent PTSD symptoms, including severity of trauma, emotional or dissociative reactions during the traumatic event and subsequent life stress

(see Table 1 for an overview). The development of PTSD can thus be understood as being individual and trauma exposure alone does not subsequently lead to the development of PTSD.

### 1.2.1 Traumatic events

The term trauma is often used as a synonym for a traumatic event. However, a traumatic event is not considered traumatic in itself, but rather in the psychological effect it has on an individual (van der Hart, Nijenhuis & Steele, 2006). Psychological traumas refer to the psychological reactions caused by the event and not the event itself and describe a situation where a potentially damaging event overwhelms an individual's cognitive, emotional and behavioral capacities to effectively respond to the event's impact (Cloitre et al., 2012). Traumatic events are considered as unusual, unexpected and extremely emotional and have potential to create strong prominent negative emotions such as fear, helplessness, anger, guilt and shame (Berntsen & Rubin, 2007; Weathers, 2017). Dahl, Eitinger, Malt and Retterstøl (1994) argue that PTSD evolves if an event is perceived as threatening, scaring or awful, beyond a certain level. This indicates that trauma is a subjective interpretation, where an event may be perceived as threatening for one individual, while another individual may perceive it as easy to cope with. However, Dahl et al. (1994) argue that if a traumatic event is serious enough, everyone would be able to develop PTSD.

It is common to distinguish between different types of traumatic events. One distinction is between trauma caused by other individuals, such as violence, abuse and war experiences and more accidental trauma, such as natural disasters and accidents (Butler, Panzer & Goldfrank, 2003). Norris and colleagues (2002) examined long terms effects after trauma exposure. Their literature review concluded that "man-made" disasters compared to natural disasters gave rise to more negative long-term effects. Negative long terms effects included mental and somatic difficulties, impairment in everyday functioning and psychosocial resource loss, as well as other difficulties for children and adolescents (Norris et al., 2002). Smith, Summers, Dillion and Cougle (2016) compared symptomatology associated with three commonly reported civilian traumas in 398 individuals meeting the criteria for lifetime PTSD: sexual trauma, non-sexual physical violence and unexpected death of a loved one. Sexual trauma and non-sexual physical violence were associated with more severe and chronic PTSD symptoms than unexpected death of a loved one (Smith et al., 2016).

Another common distinction is between simple and complex traumas (APA, 2013; Bisson, 2007). Single traumatic events with limited duration are often referred to as simple traumas whereas prolonged and repeated traumatization is referred to as complex traumas. A

large proportion of individuals who are exposed to a traumatic event thus experience repeated traumatic events (Kessler, 2000). Childhood sexual abuse (CSA) is widely used as an example of trauma that could lead to complex PTSD. According to Mossige and Stefansen (2007), have Norwegian national studies reported that 22% girls and 8% boys had been exposed to less invasive forms of sexual abuse (e.g., fondling and masturbation) during childhood, while 15% girls and 7% boys have experienced more serious forms of sexual abuse (e.g., rape and rape attempts). Repeated CSA from caregivers may result in problems with emotional regulation, interpersonal relations, somatic complaints and disturbances in attention and awareness (van der Kolk, Pelcovitz, Sunday & Spinazzola, 2005). Children who experience one type of abuse are likely to experience other types of abuse and childhood adversities, as for example neglect, physical and emotional abuse (Felitti et al. 1998; Peleikis, Mykletun, & Dahl, 2004). Thoresen and Hjelmdal (2014) found a high degree of multiple and repeated traumatization in the Norwegian population. Multiple, repeated victimization was particularly associated with being exposed to violence and abuse at a young age. For example, one of three exposed to sexually abuse before the age of 18 had also experienced sexually abuse as an adult (Thoresen & Hjemdal, 2004).

The PTSD diagnosis has attracted controversy and skepticism since it's first appearance in the 1980s (Mezey & Robbins, 2001). It has, among other things, been criticized for being narrow and that it does not cover the symptoms that may occur after complex traumatization (e.g., Chu, 1991; Herman, 1995; Pearlman, 2001, cited in Waelde, Silvern, Carlson, Fairbank & Kletter, 2009 p. 451). However, over the years the diagnostic criteria for PTSD have been refined and revised. The World Health Organization (WHO) recently published a proposed version of the diagnostic system International Classification of Diseases, 11$^{th}$ version (ICD-11). Complex PTSD has been proposed as a distinct clinical entity in the ICD-11 and is described as an enhanced version of the current definition of PTSD (Giourou et al., 2018). Complex PTSD includes most of the core symptoms of PTSD and due to the nature of the complex trauma it also includes affective dysregulation, negative self-concept and interpersonal difficulties (Giourou et al., 2018). Despite complex PTSD not being included as a separate diagnosis in the current version of the DSM, the DSM-5 represents the diversity of symptoms to a greater extent than previous versions (Regier et al., 2013). Before the release of the DSM-5, Dalenberg and Carlson (2012) argued that an inclusion of dissociative symptoms in the diagnostic criteria would result in an improved conceptualization of PTSD. They argued that the diagnosis then would represent the diversity of symptoms seen in PTSD more completely. In line with this recommendation, the DSM-5

included a subtype of dissociation in addition to dissociative experiences in the "normal" diagnostic criteria, including an experiential detachment from the event and a feeling of being unreal (APA, 2013; Cloitre et al., 2012). These updates of the diagnosis recognize that PTSD is a heterogeneous disorder with different symptom expressions. This further suggests that treatment should be adapted to the individual and not from a categorical and linear understanding (Kelso, 1995; Yehuda et al., 2015). However, there are yet few studies that have evaluated the impact of dissociation on the effectiveness of PTSD treatment (Cloitre et al., 2012). It is therefore of further interest to examine the assumption that dissociative symptoms may cause individuals to respond differently to PTSD treatment than individuals without dissociative symptoms.

### 1.2.2 Posttraumatic stress symptoms following traumatic events

Following exposure to a trauma, most individuals experience posttraumatic stress symptoms (Cusack et al., 2015). These symptoms have been referred to as normal and universal stress reactions to abnormal and stressful situations and can be problems with concentration, irritability, nightmares and flashbacks (Bisson, 2007; Cusack et al., 2015). However, most individuals demonstrate resilience and a capacity to recover. Within several weeks, the posttraumatic stress symptoms resolve in most individuals and they are able to return to their normal (Cuscak et al., 2015). For symptoms to be considered PTSD, they must last more than a month and be severe enough to cause significant distress or interfere with an individual's normal functioning (APA, 2013; Salyers, Evans, Bond & Meyer, 2004).

The majority of individuals experience at least one traumatic event during lifetime and up to 31% of individuals experience four or more traumatic events (Kessler, Sonnega, Bromet, Hughes & Nelson, 1995; Shalev, Liberzon & Marmar 2017). Based on epidemiological data, Kessler et al. (1995) reported that approximately 61% of men and 51% of women in the United States are exposed to at least one traumatic event during life. A prospective longitudinal study assessed consecutive patients who attended an emergency clinic shortly after a motor vehicle accident (Ehlers, Mayou & Bryant, 1998). The study found that the prevalence of PTSD among 967 individuals was 23,1% three months after a traffic accident and then 16,5% after one year. The authors did a 3-year follow-up of their prospective longitudinal study and found that 11% of the participants met the criteria for PTSD after 3 years (Mayou, Ehlers & Bryant, 2002). The follow-up has some methodological limitations. For example, 546 patients responded at the 3-year assessment, which is equivalent to about 59% of the original sample. The authors themselves call this "lower than desirable" (Mayou et al., 2002, p. 673). In addition, patients of lower social classes tended to be less

likely to participate in the follow-up than those of higher social classes. The authors, however, argue that the comparison of responders and non-responders did not indicate any difference in previous PTSD severity or the predictors under study (Mayou et al., 2002).

Men tend to experience more traumatic events than women, but women are more likely to develop PTSD in response to a traumatic event than men. Kessler et al. (1995) for example found women twice as likely as men to have lifetime PTSD, respectively 10.4% and 5.0%. Lassemo and colleagues (2017) reported similar findings. More men than women were exposed to traumatic events while more women than men met the diagnostic criteria for PTSD after trauma exposure. The lifetime prevalence of PTSD was estimated to be 4,3% in women and 1,4% in men (Lassemo et al., 2017). These studies indicate that the majority of trauma survivors do not develop PTSD. There is a small proportion that develops chronic PTSD symptoms despite relatively frequent incidence of trauma. In addition, many of those who have symptoms shortly after the trauma exposure, recover without the need for major interventions and professional help. However, when compared to men, women are more prone to develop long-term problems after trauma exposure.

### 1.2.3 The traumatic memory

Although a minority of trauma-exposed individuals develops PTSD, many individuals experience some symptoms of PTSD shortly after a traumatic event. This may indicate that exposure to trauma challenges an individuals' normal function. Many theories of PTSD argue that a trauma violates the schemata of the individual, which in turn leads to poor processing of the traumatic event, fragmented memories and incomplete integration of the traumatic event into the individual's schemata of him- or herself and the world (e.g. Brewin, Dalgleish, & Joseph, 1996; Ehlers & Clark, 2000; van der Kolk & Fisler, 1995). Memories that are not sufficiently processed are constantly reactivated and may occur as unwanted intrusive memories, rather than being processed and the individual experience a high activation level and a low stimulus threshold (Benum & Boe, 1997; Horowitz, 1986).

In addition to unwanted intrusive memories of the traumatic event, the individual may have problems in recalling the traumatic event. The re-experiencing symptoms have been linked to pervasive disturbances in autobiographical memory for the trauma (e.g., Brewin et al., 1996; Ehlers & Clark, 2000; Foa, Steketee & Rothbaum, 1989). The inability to recall important aspects of the trauma has been linked to intentional recall of traumatic experiences being impaired relative to recall of nontraumatic events (Byrne, Hyman & Scott, 2001; Tromp, Koss, Figueredo & Tharan, 1995). While trauma-exposed individuals may recall some aspects of the traumatic event, there is often uncertainty relating to the sequence of

events and some important aspects of the trauma can't be recalled at all (Halligan, Michael, Clark & Ehlers, 2003). This can be understood as a disorganization of traumatic memories and preliminary evidence supports that the development of PTSD is related to the degree of such an organization (Amir, Stafford, Freshman & Foa, 1998; Gray & Lombardo, 2001; Murray, Ehlers & Mayou, 2002).

The assumption that traumatic memories are expressed as problems in recalling and unwanted memories due to lack of integration of traumatic events has been challenged. Based on many years of memory research, Berntsen and Rubin (2006, 2007) argue that individuals with PTSD are able to integrate traumatic memories into consciousness and that PTSD symptoms are due to enhanced integration of trauma memories. According to Berntsen and Rubin (2007), traumatic memories remain highly accessible after the traumatic event and form a cognitive reference point for the organization of autobiographical knowledge. Such organization will have a further impact on the interpretation of non-traumatic experiences and expectations for the future (Berntsen & Rubin, 2007). The treatment methods included in the current study are, however, based on the assumption that the development of PTSD is partly due to an inadequate processing of traumatic events and fragmented memories. In the following section, these theories will be briefly explained.

#### *1.2.3.1 Ehlers and Clarks cognitive model*

Ehlers and Clark (2000) developed a cognitive model of PTSD. The model argues that individuals, who develop PTSD, do not perceive the trauma as an isolated event, which took place at a given time or in a given time period. Although the traumatic event is in the past, an individual with PTSD continues to experience a present threat to the self. The trauma is seen as something that has an overall and general negative implication for the individual and the outside world. This may subsequently lead to negative interpretations, which may be about the actual trauma and/or its consequences as well as the origins of the trauma memories. Such appraisals can for example be "the world is a dangerous place" or internal negative interpretations such as "my body is destroyed" (Ehlers & Clark, 2000). The model assumes that the experience of a current threat is maintained by, among other things, characteristics of the trauma memory.

Furthermore, Ehlers and Clarks (2000) argue that trauma-memories are fragmented. The individuals have difficult to voluntarily recall trauma-related information, while memories at the same time are being easily recalled involuntarily. This assumption can be seen directly reflected in the DSM-5 criteria B and criteria D (APA, 2013). The involuntarily recall is vivid, with a "here and now" sense of reliving and the recall is highly sensitive to

situational external or internal cues. The model argues that trauma-related information is not being worked through in the same way as non-trauma-related information. The traumatic memories are explained as poorly elaborated without a full context in terms of time and place. This causes the information to not be integrated into the autobiographic memory to the same extent as non-trauma-related information (Ehlers & Clark, 2000). The trauma-related information does not integrate into a temporal and/or spatial context and will therefore not be linked to other information stored from respectively before or after the trauma. This means that trauma-related information in the autobiographic memory is not organized into overall thematic categories or time periods, as would be the case with non-trauma related information (Ehlers & Clark, 2000).

The Ehlers and Clark cognitive model provides the conceptual framework for a trauma-focused cognitive behavioural therapy, Cognitive Therapy for PTSD (CT-PTSD). CT-PTSD was developed at Oxford Center for Anxiety Disorders and Trauma in the United Kingdom and addresses the cognitive abnormalities and maintaining factors specified by Ehlers and Clark (2000). CT-PTSD will be explained in more detail later in the thesis.

#### *1.2.3.2 Eye Movement Desensitization and Reprocessing: Adaptive Information Processing*

Eye Movement Desensitization and Reprocessing (EMDR) was developed in the 1980s by Francine Shapiro and is based on the Adaptive Information Processing (AIP) model. The AIP model argues that intrusive traumatic memories arise due to inadequate processing of traumatic events (Shapiro, 1995, 2002; Solomon & Shapiro, 2008). According to Solomon and Shapiro (2008), appropriate processing of traumatic events involve inclusion of incidents into existing memory networks so that events are stored with adequate emotions and are available for future recall. This is understood as an adaptive way of dealing with traumatic memories, where the integrated memories become part of the understanding of future events (Shapiro, 2001). In contrast, in maladaptive processing the traumatic memories are stored in a state-dependent schema where they are recalled with perceptual qualities similar to the real traumatic event, isolated from the existing memory network (Solomon & Shapiro, 2008).

The goal of EMDR treatment is to integrate isolated memories into existing memory networks (Solomon & Shapiro, 2008). According to Solomon and Shapiro (2008), adaptive information processing is a process where new associations between the dysfunctional memories of existing memory networks are formed through assimilation and accommodation of new experiences to existing memory networks (Shapiro, 1995, 2002; Solomon & Shapiro, 2008). This is also referred to as reprocessing of traumatic memories (Shapiro, 2002). The core component of EMDR consists of keeping the attention focused on two different things,

the traumatic memory and bilateral stimulation. This state of attention is assumed to be fundamental as it is able to induce certain physiological conditions that activate information processing (Navarro et al., 2018). EMDR will be described in more detail later in the thesis.

### 1.3 Factors in development of PTSD

Experiencing posttraumatic symptoms seems like a natural part of the process individual's go through after being exposed to a traumatic event. However, most individuals recover on their own and without treatment. It has been central to research to investigate why some individuals develop persistent problems (Benight, Shoji & Delahanty, 2017; Hembree & Foa, 2010). As presented in Table 1, the development of PTSD in a long-term perspective depends on many factors.

Ozer and colleagues (2003) conducted an extensive review of PTSD risk factors. The review found that peritraumatic dissociation is the strongest predictor of PTSD (Ozer et al., 2003). However, the predictor variables in the meta-analyses together only explain a small part of the variance of the development of PTSD. This may indicate that key risk factors not yet was found, or that the risk of developing PTSD depends on a combination of several factors related to the individual and the traumatic event (Ozer et al., 2003). Subsequent research suggests that dissociation that persists beyond the initial one-month period following trauma is the most robust predictor of PTSD (see Brand & Frewen, 2017).

**TABLE 1 Factors associated with PTSD**

| Pretraumatic factors | Peritraumatic factors | Posttraumatic factors |
|---|---|---|
| • Previous psychiatric factors<br>• Gender<br>• Personality<br>• Lower socioeconomic status<br>• Lack of education<br>• Race<br>• Previous trauma<br>• Family history of psychiatric disorder | • Severity of trauma<br>• Perceived threat to life<br>• Peritraumatic emotions<br>• Peritraumatic dissociation | • Perceived lack of social support<br>• Subsequent life stress |

*Note:* Factors associated with the development of PTSD (Brand & Frewen, 2017; Brewin et al., 2000; Ozer et al., 2003).

The current study does not aim to answer why every individual exposed to a trauma does not subsequently develop PTSD. The focus is rather on how some of the factors can be understood as a contribution to failure of recovery after a traumatic event. Several researchers have emphasized that there is a distinction between why symptoms develop and how they are

maintained (e.g., Dunmore, Clark & Ehlers, 1999; Ehlers & Clark, 2000). As will be illustrated below, a variable can be central to both development and maintenance.

Several theories have focused on the role of dissociation when seeking to explain how disorganized trauma memories develop (Halligan et al., 2003). Peritraumatic dissociation has been found to be associated with disorganized narratives of the trauma and to predict subsequent symptomatology (Ehlers et al., 1998; Harvey & Bryant, 1999; Murray et al., 2002; Shalev, Peri, Canetti, & Schreiber, 1996). If dissociation persists over time, it may additionally become a maintaining factor of PTSD (Ehlers & Clark, 2000). Dissociating while recalling a traumatic event may for example impede cognitive and emotional processing (Foa & Hearst-Ikeda, 1996; van der Kolk & Fisler, 1995). It can therefore be assumed that dissociation could prevent effective trauma treatment. The existing research is, however, not so clear.

### 1.4 Psychological treatments for PTSD

Overall, psychological treatments lead to large improvements in PTSD symptoms (Bradley et al., 2005). In a multidimensional meta-analysis of 26 studies on psychological treatments, Bradley and colleagues (2005) found the mean effect size for differences between pre- and post-treatment scores to be large, $d = 1.43$. However, not all psychological treatments are equally effective in treating PTSD. For example, several meta-analyses of treatment for PTSD have shown that trauma-focused psychotherapy may be more effective than non-trauma-focused psychotherapy and pharmacological therapy alone (e.g., Bisson, Roberts, Andrew, Cooper, & Lewis, 2013; Cusack et al., 2015; Lee et al., 2016). Individual non-trauma-focused psychotherapy has on its side shown to be more effective than waitlist/usual care and other therapies (Bisson et al., 2013). The main difference between trauma-focused and non-trauma-focused interventions is whether the intervention directly addresses thoughts, feelings or memories of the traumatic event to help the individual experience a decrease in PTSD symptoms (Cusack et al., 2015).

Bradley and colleagues (2005) conclude that trauma-focused cognitive behavioral therapy (CBT) and particularly approaches including exposure and cognitive restructuring, in addition to eye movement desensitization and reprocessing (EMDR) are the best psychological treatments for PTSD. Other research has proven to support their conclusion. For example, CT-PTSD, a form of trauma-focused CBT, has proven to be effective (Ehlers & Clark, 2010; Ehlers, Clark, Hackmann, McManus, & Fennell, 2005; Gillespie, Duffy, Hackmann, & Clark, 2002). As pinpointed by Hagenaars et al. (2010), treatment efficacy concerns both improvement and dropout. Ehlers and colleagues (2005) reported dropout rate to only 3%,

which supports the effectiveness of CT-PTSD. Furthermore, a numerous randomized controlled trials and several meta-analyses have empirically validated EMDR as treatment for PTSD (e.g., Chen, Zhang, Hu & Liang, 2015; Navarro et al., 2018; Nijdam & Olff, 2016). Navarro et al. (2018) systematically reviewed fifteen randomized controlled trials (RCTs) and compared EMDR with unspecific interventions, waiting list or specific therapies. Overall, 25 years of published literature on EMDR were reviewed and the findings suggest that EMDR is a useful evidence-based treatment of PTSD (Navarro et al., 2018).

In line with research, numerous treatment guidelines recommend trauma-focused CBT and EMDR as the treatments of choice for PTSD (e.g., National Institute for Health and Clinical Excellence, [NICE], 2005). On this basis, CT-PTSD and EMDR were used in the pilot project conducted by NKVTS. The two methods attempt to minimize intrusion, avoidance and hyperarousal symptoms of PTSD by combining re-experiencing and working through trauma-related memories and emotions. By enhancing cognitive processing and thus also emotional processing, the methods aims to help the individual to reorganize and integrate the memories and perceptions from the traumatic event as well as the individual's self and relationship to the environment (Cloitre et al., 2012; Cusack et al., 2015; Resick et al., 2012).

Although trauma-focused psychological treatments have proven to be effective in reducing PTSD symptoms, many individuals with PTSD never receive treatment (Cusack et al., 2015). Some possible reasons are stigma, access barriers and uncertainty about which treatments are available and effective (Kuehn, 2012). Salyers et al. (2004) found that four of the five most commonly reported barriers were client-related. In terms of clinician-related barriers, lack of knowledge or experience was frequently identified (Salyers et al., 2004). Furthermore, in a critical analysis De Jongh et al. (2016) argue that current guidelines, and especially the stabilization phase, may be too conservative and cause patients to be prevented or delayed in receiving treatment. This is of interest, as it previously has been claimed that moving to fast in exposure therapy can provoke high levels of emotions that may inhibit processing (Foa & Kozak, 1986). In the current study, CT-PTSD and EMDR were performed to standard protocols, which will be briefly described later.

### 1.4.2 Contraindications to exposure-based PTSD treatment

Trauma-focused psychological treatments are effective in reducing PTSD symptoms. However, some patients do not sufficiently profit from exposure therapy (Hagenaars et al., 2010). A substantial minority of patients do not respond to treatment at all or drop out of treatment (Halvorsen et al., 2014). According to Schnurr et al. (2007), up to a third of patients can be expected to drop out of established trauma-focused CBT programs for PTSD. This

dropout rate may, however, be greater for non-trauma focused treatments (Schnurr et al., 2007). It is of particular interest to examine the effect of comorbidity on treatment outcomes, as comorbidity is the rule rather than the exception in PTSD (Bradley et al., 2005). Bradley et al. (2005) argue that future research indented to generalize to patients in practice should avoid exclusion criteria other than those a sensible clinician would impose in practice, as for example schizophrenia. Bradley and colleague's argument is of interest because some clinicians are reluctant to use trauma-focused treatments because they believe that these treatments may worsen the patient's symptoms (Ehlers & Clark, 2008). These concerns may be related to that trauma-focused psychological treatments directly include exposure to traumatic reminders, as the therapist ask the patients to revisit the trauma and to engage in behaviors or confront situations they systematically avoid. Individuals with PTSD often respond to reminders with psychological distress and psychological arousal. However, the existing research indicates that trauma-focused treatments are effective and acceptable for PTSD (Ehlers & Clark, 2008).

Ehlers et al. (2013) refer to a substantial number of RCTs that have established the efficacy of trauma-focused cognitive behavioral therapy in PTSD. Overall, the RCTs show large effect sizes in treating PTSD. However, Ehlers and colleagues (2013) argue that despite large effect sizes, clinicians often are concerned good outcomes in RCTs may not generalize to the wide range of traumas and presentations seen in clinical practice. In addition, some RCTs exclude patients that are difficult to treat and that there has been concerns about possible risk of symptom exacerbation with trauma memories. Ehlers et al. (2013) therefore conducted a study on the correlation between common exclusion criteria and treatment outcome of CT-PTSD in an outpatient clinic in the UK ($n$= 330) and thus extended the research on PTSD treatment as implicated by Bradley et al. (2005). The study found little correlation between common exclusion criteria and treatment outcome. For multiple trauma and severe comorbidity, is was often sufficient to extend treatment duration. The study has several limitations, among them lack of an untreated control group and a reduced sample size at follow-up. However, the authors concluded that the results support the effectiveness of CT-PTSD in the treatment of patients in routine clinical care (Ehlers et al., 2013).

A limitation of Ehlers and colleagues (2013) study is that dissociation was not included as an exclusion criterion selected from the literature. Dissociation has long been thought to be a major risk factor for poor treatment outcome due to the development of dissociative reactions during exposure to traumatic memories or their reminders (Shalev, Bonne & Eth, 1996) and also because it is assumed to interfere with emotional engagement

during exposure therapy (Foa & Kozak, 1986). Several researchers point out that dissociation for several reasons frequently is used as a basis of exclusion from studies, with major treatment challenges being one of them (Bradley et al., 2005; Halvorsen et al., 2014; Resick et al., 2012). Becker and colleagues (2004) for example found that 51% of clinicians viewed imaginal exposure as a contraindication for patients with comorbid dissociation (cited in van Minnen, Harned, Zoellner & Mills, 2012, p. 2). According to van Minnen et al. (2012), the clinicians fear exacerbation of symptoms both of the PTSD symptoms and comorbid symptoms. However, as will be outlined in the next chapter, the existing research has conflicting findings.

# 2. DISSOCIATION

As mentioned in the previous chapter, dissociation may affect development and maintenance of PTSD. While dissociative experiences at the time of the traumatic event are considered to be a risk factor for the development of PTSD, persistent dissociation may impede an individual's recovery after the traumatic event. Besides initially being defined as a state of disconnection from oneself and the world around and the examples of dissociative symptoms seen in PTSD, dissociation has yet not been defined. The following chapter will explain dissociation, with a particular focus on the pathological dissociation seen in relationship with PTSD.

## 2.1 What is dissociation?

Dissociation is a complex phenomenon without a precise definition (Bryant, 2007). The DSM-5 broadly defines dissociation as characterized by "a disruption and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control and behaviour" (APA, 2013, p. 291). This definition indicates that dissociation is a phenomenon that consists of a multitude of symptoms, as for example alterations in memory and emotions (Hagenaars et al., 2010).

Kluft (unpublished, cited in Spiegel et al., 2011, p. 826) conducted a literature search on dissociation and found over 20 different uses of the term dissociation. Some have argued that the term dissociation is too broad and too vague (Nijenhuis, 2014). The term is, for example, used to describe both the process that generates and maintains disconnection and the outcome of the same processes (Brand & Frewen, 2017). Some have challenged the validity of dissociation and argue that dissociation not exist, while others argue that dissociation is an overlapping phenomenon of fantasy (Lynn et al., 2014; Paris, 2015). Despite disagreements in the understanding of dissociation, almost all theories conceptualize exposure to trauma as a casual factor for the development of dissociation (Bailey & Brand, 2017).

### 2.1.1. Normal and pathological dissociation

Dissociative experiences are seen in a considerable percentage of psychiatric patients as well as in healthy individuals (Candel & Merckelbach, 2004). There is, however, a clear distinction between normal dissociation and pathological dissociation. Cardeña and Weiner (2004) point out that dissociation is only considered dysfunctional when it's chronic, repetitive, uncontrollable and if is experienced as unpleasant and inhibits daily functioning.

According to the DSM-5, pathological dissociative experiences can potentially disrupt every area of an individual's psychological functioning (APA, 2013).

Bernstein and Putnam (1986) conceptualized dissociation as a continuum, with "normal" dissociation at one end and pathological dissociation at the other end of the continuum. This is in line with today's understanding of dissociation (Dalenberg et al., 2012). Putnam (1997) described normal dissociation as primarily expressed through absorption in internal (e.g., daydreaming) or external types of stimuli (e.g., watching TV or interesting reading). Absorption refers to situations where an individual is so caught up in their thoughts or inner experiences that there is a notable disconnection with the environment (Brand & Frewen, 2017). According to Giesbrecht and colleagues (2008), absorption is assumed to be a nonpathological phenomenon that may occur in the general population (cited in Brand & Frewen, 2017, p. 284). By nonpathological absorption the individual has the ability to go out of different states of consciousness and can choose to be absorbed, distant or aware. The individual has a narrowed focus of attention and focuses on one aspect of the experience. Other aspects are blocked out and may be difficult to recall in retrospect (Hilgard, 1977; Putnam, 1997).

Pathological dissociation refers to a disruption and fragmentation of the usually integrated functions of consciousness, memory, identity, body awareness, and perception of the self and the environment (APA, 2013). Pathological dissociation has been conceptualized as a response to antecedent traumatic stress and/or severe psychological adversity and is associated with mental disorders such as dissociative disorders and PTSD (APA, 2013; Dalenberg et al., 2012). In individuals with PTSD or complex PTSD, dissociation is typically manifested as mild or moderately severe forms. Such forms of dissociation are disruptive, but not as extreme or pervasive as in those with dissociative disorders (Carlson, Dalenberg & McDade-Montez, 2012, p. 480). The current study does not aim to examine the various dissociative disorders defined in the DSM-5, but will rather examine how dissociative reactions can be seen as symptoms following trauma exposure and in individuals with PTSD.

### 2.1.2 Dissociative symptoms

The DSM-5 notes that dissociative symptoms are experienced as a) unbidden intrusions into awareness and behaviour, with accompanying losses of continuity in subjective experiences and/or b) inability to access information or to control mental functions that normally are readily amenable to access or control (APA, 2013, p. 291). The dissociative reactions may be divided into negative and positive dissociative symptoms. Negative dissociative symptoms refer to some form of absence and loss of previous functions, such as

for example memory, control of movement or sensory attention (Nijenhuis, van der Hart, & Steele, 2006). These symptoms appear to be consistent with the degree of need to disconnect, opt out and protect one self from being overwhelmed and such behaviour can be linked a biological defense mechanism and as a protection against being killed (Holmes et al., 2005). Such a freeze-response can also be considered a way for the individual to preserve his or her own core or self (Benum, 2006). While there is no detailed description of positive dissociative symptoms, positive symptoms seem to refer to what an individual notices as painful or threatening, such as hearing voices, reliving the trauma and having overwhelming emotions and thoughts related to the traumatic event (Benum, 2006). Nijenhuis and colleagues (2006) argue that intrusive memories/flashbacks can be understood as positive. This indicates that the positive symptoms present unprocessed features from the trauma.

The description of dissociative symptoms usually only recognizes the psychoform dissociation, which refers to dissociation related to memory, awareness and identity (Nijenhuis et al., 2006). However, this is not consistent with the DSM-5, where bodily representations, motor skills and behaviours are included (APA, 2013). Dissociation can therefore be understood as symptoms that manifest as both psychoform and somatoform symptoms (Nijenhuis et al., 2006). Somatoform dissociation refers to physical symptoms and a disruption of bodily experiences, which cannot be explained by a medical condition of the direct effect of a substance (Brand & Frewen, 2017). Somatoform dissociation has been linked to trauma exposure and posttraumatic stress symptoms in both clinical and nonclinical samples (Nijenhuis, Hart, Kruger, & Steele, 2004, cited in Brand & Frewen, 2017, p. 284). The inclusion of the body in the understanding of dissociation is reflected in Nijenhuis and colleagues (2006) distinction between respectively negative and positive psychoform symptoms and negative and positive somatoform symptoms. Pain, sensory disturbances and bodily expressions of panic are examples of positive somatoform symptoms, while paralysis and numbness are examples of negative somatoform symptoms (Nijenhuis et al., 2006). This understanding of dissociative symptoms is also supported by the general and recognized assumption that no human emotion comes without a bodily expression.

### 2.2 Dissociation as a response to trauma exposure

The relationship between traumatic stress and dissociation has been debated and discussed in the fields of psychology and psychiatry since Pierre Janet's work in the early 1900s (Carlson et al., 2012; Dalenberg et al., 2012). Trauma exposure has been found to be the most consistent and robust casual factor of dissociation in a wide range of samples using diverse methodologies, including longitudinal, controlled studies as well as meta-analyses

(e.g., Dalenberg et al., 2012; Dalenberg et al., 2014). However, the relationship between antecedent trauma and dissociative symptoms has been explained in two conflicting ways. The thesis will next review some of the theories that hold trauma as a fundamental cause for dissociation. Thereafter, it will follow a review of the different dissociative reactions expressed as symptoms after trauma exposure. At last, the relation between dissociation and PTSD and the effect of dissociation on trauma treatment will be examined.

### 2.2.1 The trauma-dissociation relation

Dalenberg et al. (2012) argue that all forms of dissociation have been theoretically and empirically related to antecedent experiences of traumatic stress and/or severe psychological adversity. This assumption forms the basis for the trauma-model, where dissociation is considered an important aspect of the response to threat or danger, as it enables reactions to increase survival during, and after, traumatic experiences (Dalenberg et al., 2012). However, in recent years, several authors have suggested an alternative model that challenges the assumptions of a causal relationship between traumatic and/or stressful experiences and dissociation (e.g., Giesbrecht, Lynn, Lilienfeld, & Merckelbach, 2008; Lynn et al., 2014; Piper & Merskey, 2004). This model is called the fantasy model and argues that individuals who report experiencing dissociative symptoms are overly suggestible and prone to fantasy (Lynn et al., 2014).

Dalenberg et al. (2012) conducted a series of meta-analyses to determine whether there was more empirical support for the trauma model or the fantasy model of dissociation. The authors reviewed 1492 studies including traumatized and clinical and nonclinical samples as well as control groups and found a consistent moderate relationship between trauma and dissociation, e.g., CSA ($r$ = .31) and physical abuse ($r$ = .27). The effect sizes were even stronger among individuals with dissociative disorders, respectively $r$ = .54 for CSA and $r$ = .52 for physical abuse. Dissociation was also found to be highest just after trauma exposure with a decrease over time with trauma treatment. While Dalenberg and colleagues (2012) concluded that there is strong empirical support for the hypothesis that trauma cause dissociation, proponents of the fantasy model acknowledge that there may be a correlation between trauma and dissociation, but have criticized the trauma-model for representing a simplified model (Lynn et al., 2014). Lynn et al. (2014) argue that specifically, Dalenberg and colleagues leap too quickly from correlational data to causal conclusion and underestimate the relationship between dissociation and false memories. In their comment to Dalenberg and colleagues' (2012) review, Lynn et al. (2014) conclude that that field should embrace

multifactorial models that accommodate the diversity of causes of dissociation and dissociative disorders.

In their review, Dalenberg et al. (2012) used Cardeña and Carlsons (2011) definition of dissociation. This definition is similar to the definition in DSM-5, but there is specified an additional dissociative symptom: a sense of experiential disconnectedness that may include perceptual distortions about the self or the environment (Cardeña and Carlson, 2011, p. 251-252). As pointed out by Dalenberg et al. (2012), the relatively broad understanding of dissociation and its symptoms correspond to what Holmes and colleagues (2005) argue are the central forms of dissociation: compartmentalization and detachment. Compartmentalization can be understood as a psychological split, since it is about the lack of continuity and interaction between psychological processes, while detachment is about a disconnection from the self and/or the outside world (Holmes et al., 2005). All these phenomena are included in the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986), a measure of dissociation that has been used in most studies of dissociative phenomena in clinical and nonclinical samples (Dalenberg et al., 2012).

Despite disagreements in the field, the assumption that trauma is an important part of the etiology of dissociative disorders is the most prevalent today. A recent meta-analysis of over 15.000 cases in 19 different diagnostic categories found dissociation to be most prevalent in disorders linked to traumatic stress (Lyssenko et al., 2017). Theories have emphasized different aspects of the link between antecedent trauma and dissociation. Frewen and Lanius (2015) suggests that dissociation arises from trauma-related altered states of consciousness associated with the phenomenological experience (i.e., individual's subjective perception of reality) of the "4 Ds", that is the dimension of time, emotion, sense of embodiment and cognition. The model primarily focuses on individual's ability to alter aspects of consciousness to manage overwhelming emotions related to traumatic experiences during childhood. In a study of 2,478 community adults, those who demonstrated altered states of consciousness were more likely to have experienced adverse events during childhood, specifically physical abuse or neglect and sexual abuse (Frewen, Brown, & Lanius, 2016).

Other theories emphasize dissociation as a division within one's identity, ego or sense of self (Brand & Frewen, 2017). The structural theory of dissociation for example understands dissociation as a fragmentation of an individual's personality due to exposure to severe and prolonged threat (Nijenhuis & van der Hart, 2011). The theory postulates that the personality of traumatized individuals is unduly divided in at least two basic types of dissociative subsystem or parts, called action system: The Apparently Normal Part of the Personality

(ANP) and the Emotional Part of the Personality (EP). Following the work of Janet (1889), the theory assumes that when a traumatizing event starts early in life, is increasingly overwhelming, and/or prolonged or chronic, structural dissociation tends to be more complex and extensive (van der Hart, Nijenhuis & Solomon, 2010). It distinguishes between three different forms of the personality: primary, secondary and tertiary structural dissociation. Primary structural dissociation is associated with simple posttraumatic dissociative disorders, including PTSD. Secondary structural dissociation is associated with complex PTSD, while tertiary structural dissociation is associated with dissociative disorders (van der Hart et al., 2010).

The different action systems have their own thoughts, feelings and patterns of reaction and become available to us through development and require maturation and sufficient good experiences in order to function optimally (van der Hart, Nijenhuis, Steele, 2005). The ANP develops to maintain distance from traumatic memories and related emotions and goes on with daily life and coping, while the EP maintains access to traumatic memories and disconnects from the ANP. Switching between the parts is mediated by action systems primarily organized around defenses designed to keep the individual safe from threat. However, the division of personality implies the emergence of negative dissociative symptoms, such as depersonalization as well as positive dissociative symptoms such as recurrent intrusions of traumatic memories/flashbacks (van der Hart et al., 2010).

### 2.2.2 Dissociation; a dysfunctional defense mechanism

Dissociative reactions following a traumatic event have been referred to as the mind's way to escape when physical escape is not possible and is for example seen if an individual perceives a threat of severe bodily harm from another person and in some animals of pray unable to escape their predators (e.g., Putnam, 1985; Nijenhuis, Vanderlinden & Spinhoven, 1998; Schauer & Elbert, 2010). When fight or flight is not possible, alternate physiological reactions may occur and the individual or animal becomes immobile, appears to be dead and is thought to feel little or no pain (e.g., Porges, 2011; Schauer & Elbert, 2010). Nijenhuis et al. (2004) theorized that a bodily physiological reaction develops in humans as a response to cumulative trauma and described such defense systems as consisting primarily of "freezing" (i.e., difficulty in moving, speaking) and "total submission" (i.e., paralysis and lack of emotion and/or pain perception).

According to McNally (2004), individuals who experience peritraumatic dissociation do not experience intense fear, helplessness or horror during the actual event. Immediately, this may sound like an appropriate coping and defense mechanism where the individual is

able to protect himself by disconnecting from the event. However, the individual is nevertheless physically present and it reasonable to assume that such psychological disconnection could have a long-term damaging effect by interfering with cognitive and emotional processing. This is supported by that many authors have argued that the immediate effects of peritraumatic dissociation are adaptive, while the long-term consequences are pathogenic (see Candel & Merckelbach, 2004, p. 44). This is also supported by that peritraumatic dissociation has been found to be associated with disorganized narratives of the trauma and to predict subsequent symptomatology (see Halligan et al., 2003). According to Nijenhuis et al. (2006), it is a simplification to consider dissociation as just a defense mechanism. This is justified by the fact that symptoms such as flashbacks and trauma-related pain cannot be considered as protective factors. Dissociation can thus be described as a lack of integrative capacity (Nijenhuis et al., 2006).

Howell (2005) argue that dissociation can be a passive reaction to being overwhelmed as well as an active process. Passive and active aspects of dissociation are often present, either alternately or in parallel. The clinical example of Signe, the young woman who was sexually abused as a child can illustrate this. The abuse started when Signe was 7 years old and to protect herself she kept the traumatic events out of her consciousness. She distanced herself from what happened at home and did not assimilate the painful experiences. Consequently, she was able to deal with her daily life and for a long time she continued to do well at school and she enjoyed playing at the soccer team. However, the repeated traumatization could have significant negative long-term consequences for Signe. According to the structural theory of dissociation, repeated traumatization could lead to development of different parts of personality that persist into adult life. If Signe does not help to integrate the traumatic memories, the dissociative defense mechanism might follow her into adulthood and it is reasonable to assume that the unintegrated memories could have negative consequences for Signe's life. For example, Benum (2006) reported about a tendency that adults with severe childhood traumas develop a "pseudo-adult". The individuals have a public and adult face, while their emotions and self-perceptions still belong to their missed childhood.

### 2.3 Dissociative symptoms and PTSD

Both PTSD and dissociation seems to be possible consequences of exposure to traumatic events. Individuals with dissociative disorders, characterized by pervasive and severe dissociative symptoms, almost invariably also, suffer from PTSD, with comorbidity rates from 88% to 97% (e.g., Foote, Smolin, Neft, & Lipschitz, 2008; Rodewald, Wilhelm-Göling, Emrich, Reddemann, & Gast, 2011). Severe dissociative symptoms are thus assumed

to be outside the experiences of non-traumatized individuals and individuals with PTSD generally experience increased levels of dissociative symptoms compared to trauma-affected people without PTSD (Brand & Frewen, 2017; Carlson et al., 2012; Dorahy & van der Hart, 2015). Individuals with a PTSD diagnosis dissociate to varying degrees and some argue that this is due to differences in intensity and severity of the traumatic event (Harvey & Bryant, 2002). Dissociation has also been found to relate to the severity of PTSD (Douglas, 1993; Carlson, 2001).

The DSM-5 explicitly defines some dissociative symptoms that are noted to occur in trauma- and stressor related disorders, including PTSD: flashbacks, dissociative amnesia, derealization and depersonalization (APA, 2013). Flashbacks refer to an experience where an individual feels and/or acts as if a past traumatic event is happening in the present (Brand & Frewen, 2017). At their most intense, the present is fully dissociated and replaced by the individual's experience of the past. The traumatic "there and then" is replaced by a "here and now" experience and is often describes as feeling "just like" the actual traumatic event. Dissociative amnesia refers to an individual's inability to recall personal information (Brand & Frewen, 2017). The lack of ability should not be due to ordinary forgetfulness, substance use, or a medical condition such as dementia, a head trauma, or substance use. Absorption is related to dissociative amnesia and is found to be elevated within dissociative disorder populations (APA, 2013; Brand & Frewen, 2017, p. 284).

Derealization refers to an experience of perceiving the world, including familiar people and/or locations an "unreal"/"not real," "like a dream," surreal, foreign, or foggy" (Brand & Frewen, 2017, p. 284). Depersonalization refers to a sense of disconnection/detachment from one's own body or mind and a change in self-experience following trauma exposure. The individual may thus feel disconnected either from him- or herself and/or the outside world (Brand & Frewen, 2017; Holmes et al., 2005). The disconnection includes experiences such as the person feeling "unreal," feeling sensations or emotions in an altered way (e.g., feeling physically or emotionally numb, "fuzzy," "tingly," "spacey"), or feeling separate from or like an "outsider" in relation to one's own feelings, thoughts, body, and/or actions, including seeing oneself at a distance, as if in a movie (Brand & Frewen, 2017, p. 284).

The experience of disconnection may be explained by that a traumatic memory, e.g., CSA, is kept out of consciousness and consequently is not a part of the individual's personal story and experience of a holistic self. There is a disintegration of the traumatic event into memory. This assumption can be traced back to Janet's (1889) understanding as dissociation

as an inability to cognitively integrate experiences after traumatic experiences (cited in Spiegel et al., 2011). In the following quotation, depersonalization is seen as disintegration in that a survivor of early childhood trauma describes to have separated herself from her own body:

> *The body is not mine; parts of the body do not exist. I put it away. I look down at my legs; they are not there. I can see them, but I can't feel them. I woke up one morning, and my body (or is it mine?) had grown. I was 11 years old. My legs reached down to the end of the bed. Some parts of me had been gone for the last four years" (Benum, 2006, p. 24, my translation).*

### 2.3.1 Dissociation and PTSD

Some argue that PTSD and dissociative disorders are two overlapping disorders. This may be explained by the high comorbidity and symptomatic overlap (Bækkelund, Frewen, Lanius, Berg & Arnevik, 2018). Some have argued that PTSD psychopathology possesses sufficient dissociative symptoms that it can be called a dissociative disorder (Nijenhuis, 2014). For example, the PTSD symptom flashback is explicitly recognized as a dissociative phenomenon in the DSM-5 (APA, 2013). Trauma-related amnesia is also seen as dissociative phenomena (e.g., Dell, 2006; Frewen & Lanius, 2015). Dissociation is however not only associated with PTSD. Dissociation has been linked to a number of other pathologies, such as mood disorders, anxiety disorders and eating disorders (Brand & Frewen, 2017). This may argue that the dissociation and PTSD are distinct disorders. However, studies showing dissociative symptoms in a number of disorders, very often show that dissociation is related to some kind of a traumatic event, for example CSA (Bryant, 2007). This argues for a common etiology in PTSD and dissociation.

### 2.3.2 Peritraumatic dissociation and persistent dissociation in PTSD

Ozer and colleagues (2003) found peritraumatic dissociation to be a strong predictor of PTSD. However, individuals who experience peritraumatic dissociation tend to show a gradual reduction of the dissociative experiences over several months, as they resolve their fears and other trauma-induced emotions and cognitions with trauma treatment (Carlson et al., 2012; Dalenberg et al., 2012). Research has found persistent dissociation to be a maintaining factor for PTSD *(*e.g., Ehlers & Clark, 2000). Halligan and colleagues (2003) conducted two studies on PTSD following assault and the role of cognitive processing, trauma memory and appraisals. Their cross-sectional study ($n$ = 81) suggests that peritraumatic cognitive processing is related to the development of disorganized memories and PTSD. In addition, ongoing dissociation and negative appraisals served to maintain PTSD symptoms. The authors replicated their findings in a prospective longitudinally study ($n$ = 73). Persistent

dissociation was found to predict an additional 8% of the variance in PTSD severity beyond what was predicted by trauma severity and cognitive processing, including peritraumatic dissociation (Halligan et al., 2003). A prospective study by van der Velden and Wittmann (2008) did report similar findings. Peritraumatic dissociation only weakly predicts PTSD when preexisting psychiatric symptoms were controlled for, or if the level of peritraumatic dissociation was examined at one month after the trauma exposure. These findings indicate that persistent dissociation contributes to the maintenance of psychopathology, including PTSD.

### 2.3.3 Dissociation in PTSD treatment: Possible disruption in the slope of improvement

Foa and Cahill (2001) argue that successful treatment of PTSD involves similar processes that occur in natural recovery after trauma exposure. Recovery from trauma exposure is assumed to involve a reorganization and integration of the memory and perceptions of the event as well at the individual's sense of self and relationship to the environment. Viewed this way, recovery from psychological trauma also requires recovery from dissociative experiences (Cloitre et al., 2012). Dissociation has long been thought to be a risk factor for poor treatment outcome, as it is believed that it could interfere with both cognitive and emotional processing of a traumatic event (Cloitre et al., 2012; Foa & Kozak, 1986; Resick et al., 2012; Shalev et al., 1996). However, the existing research is not clear.

Hagenaars and colleagues (2010) investigated the impact of dissociative phenomena on the efficacy of prolonged exposure (PE) treatment. The sample consisted of 71 outpatients with PTSD, mostly resulting from sexual or physical assaults. 84,5% patients completed the treatment ($n$ = 60) and there were reported no difference in dissociative symptoms between dropout and completers. The study found that although PTSD symptom severity remained higher for those who experiences dissociative symptoms, both high and low dissociation changed at the same rate. The authors concluded with that dissociation did not predict the effectiveness of PE and argue that the results have important implications for clinical practice: patients with severe dissociation may profit similarly from exposure treatment, as do patients with minimal dissociative symptoms (Hagenaars et al., 2010). In their six-month follow-up, the rated of PTSD were seven times higher in those with high dissociation. It has been argued that those with high dissociation likely would require a longer treatment to achieve similar PTSD remission rates as patients with low dissociation (Bailey & Brand, 2017).

Halvorsen and colleagues (2014) reported similar findings as Hagenaars et al. (2010). Halvorsen et al. (2014) conducted a secondary analysis of data (RCT) comparing narrative exposure therapy to treatment as usual for a traumatized refugee population ($n$ = 81).

The main findings from their analyzes were that derealization and depersonalization did not moderate treatment outcomes of either narrative exposure therapy or treatment as usual. However, the PTSD scores for the highly dissociative groups were still in the severe PTSD range at follow up (Halvorsen et al., 2014). Resick and colleagues (2012) conducted a secondary analysis of data from a randomized controlled trial of cognitive processing therapy among 150 women with assault-related PTSD. Overall, the level of pretreatment dissociation did not impact change in PTSD symptoms. The findings however, noted differences across dissociation subscales. For example, the study indicated that women who endorsed higher levels of dissociation responded better to standard cognitive processing therapy rather than a modified version of cognitive therapy with no written trauma narratives (Resick et al., 2012).

Levels of baseline dissociative symptoms also failed to predict treatment outcome in a study by Cloitre and colleagues (2012). The study compared three treatment conditions among women with childhood abuse-related PTSD ($n$ = 104) and found that skill building preceding modified exposure provided greater benefits in PTSD reduction as compared to no skills building. The effect was more pronounced as the severity of baseline dissociation increased (Cloitre et al., 2012).

All four studies mentioned above except Hagenaars et al. (2010) investigated state dissociation. Hagenaars and colleagues (2010) measured dissociation as both trait and present state dissociation. Whereas present state dissociation was measured at pretreatment, posttreatment and at follow-up, trait dissociation was only measured at pretreatment. Hagenaars and colleagues (2010) point out that although trait dissociation measured with the Dissociative Experiences Scale (DES: Bernstein & Putnam, 1986) is considered stable, it would be interesting to measure DES following treatment as it is possible that part of the DES-score depends on the level of PTSD symptoms. The DES-score may therefore also decline after treatment (Hagenaars et al., 2010). This could provide valuable information about the relationship between dissociation and PTSD in treatment. Another limitation of the above-mentioned studies, again expect Hagenaars et al. (2010), are that they are based on secondary data of clinical trials. It has been argued that such data not necessary apply to actual patients with more severe psychopathology (Spinazzola, Blaustein & van der Kolk, 2005). A strength of the studies is that they however include patients with dissociation, as there previously has been a tendency to exclude individuals with dissociative symptoms from studies (Resick et al., 2012). Highly dissociative patients are for example often excluded from exposure treatment (Hagenaars et al., 2010; Halvorsen et al., 2014). It is nevertheless worth

mentioning that the majority of participants in the mentioned studies have low level of dissociation (Bae et al., 2016).

The studies have in common that dissociative symptoms do not have a significant impact on the outcome of PTSD treatment. Several other studies have however suggested that dissociation is related to nonresponsiveness and/or worse outcome in treatment and follow-up. Price and colleague (2014) found dissociation at the onset of early exposure intervention after trauma exposure to predict nonresponse ($n$ =137). According to their study, dissociation did account for 51% of the variance in PTSD 12 weeks after trauma exposure. Unfortunately, Price et al. (2014) did not assess dissociation at subsequent treatment sessions or at follow-up. One study of psychiatric inpatients with various clinical diagnoses found that nonresponders to brief psychodynamic psychotherapy had significantly higher baseline levels of dissociation (Spitzer, Barnow, Freyberger, & Grabe, 2007).

Bae and colleagues (2016) used clinical data from a specialized trauma clinic to investigate pretreatment clinical factors predicting response to EMDR treatment among adults with PTSD ($n$ = 69). According to Bae et al. (2016) their study is the first clinical study providing evidence that dissociation predicts treatment nonresponse in PTSD subjects. A limitation to their study is that they define dissociation as only depersonalization and derealization. While this is in accordance with the definition of the dissociative subtype of PTSD, dissociation is a much more complex phenomenon including several other symptoms. Bae and colleagues (2016) themselves point out that further studies need to investigate the diverse and different forms of dissociative symptoms and their effect on the outcome of PTSD treatment.

In summary, the evidence shows that results across studies have been inconsistent. Although clinicians fear exacerbation of symptoms, there are mixed opinions about whether dissociation impacts treatment. Several findings indicate that dissociation do not significantly impact treatment outcome. Given the fact that PTSD has high rates of comorbidity with dissociative symptoms, the mentioned perceived contraindications could lead to the exclusion of the majority of PTSD-patients from receiving exposure-therapy (van Minnen et al., 2012). This is despite the fact that CT-PTSD and EMDR have received empirical support as treatment for PTSD. However, individuals high in dissociation often continue to have worse symptoms at termination and follow-up than do those with low dissociation. This may indicate that individuals with high dissociative symptoms require longer treatment to achieve similar PTSD remissions rates. This is in line with Ehlers et al. (2013) study, which concluded that by multiple trauma and severe comorbidity, it is often sufficient to extend the duration of

the treatment. The conflicting findings thus highlight that more knowledge about dissociations effect on PTSD treatment is needed. In order to expand the existing research, the current study will examine the effect of dissociative symptoms on treatment outcome in patients referred to two psychiatric outpatient clinics in Norway.

### 2.4 The current study

The question remains unsolved whether dissociation predicts or does not predict the outcome of PTSD treatment. To test the hypothesis that the presence of dissociative symptoms would have a detrimental effect on the outcome of trauma-focused treatments, the current study examined dissociation as a predictor of PTSD treatment outcome in a clinical sample at two outpatients' clinics in Norway ($n$ = 47). Despite disagreements in the field, it is hypothesized that pre-treatment dissociative symptoms would be associated with poorer treatment outcome. More specifically, it is hypothesized that higher levels of pathological dissociation measured pre-treatment would predict negative treatment outcomes.

# 3. METHOD

## 3.1 Setting

The data material used and analyzed in the current study has been collected as part of a pilot project in a larger ongoing research project, "Implementation of evidence-based trauma treatment for adults" (ITV), at the Norwegian Center for Violence and Traumatic Stress (NKVTS) in Oslo, Norway. The pilot project was completed during the period from May 2016 to May 2017 and a summary of the pilot project has been published (Bækkelund, Bergerud-Wichstrøm, Mørk, Endsjø & Aareskjoles, 2017).

As the title of the project indicates, the ITV project is about implementation processes. The main goal of the project is to implement specific evidence-based PTSD treatment in a way that ensures further uses of the methods. It has therefore been spent time to build up the infrastructure needed for such an implementation. This has for example involved training and supervision of therapists, follow up of clinic leaders and establishing electronic data collection. The main findings from the pilot project indicated that a national implementation was needed and feasible: Cognitive therapy for PTSD (CT-PTSD) and Eye Movement Desensitization and Reprocessing (EMDR) could be applied by therapists after training and were perceived as acceptable by both therapists and patients (Bækkelund et al., 2017). Results from the pilot project also suggest positive changes in treatment for patients with PTSD and a possible increased efficiency of the treatment process (Bækkelund et al., 2017). Based on the experiences and the findings from the pilot project, the project was expanded with implementation at further clinics in 2018. The ITV project is expected to be completed by the end of 2019 and has not yet been published. The further aim is a national implementation based on the experiences from the ITV project.

The current study aims to investigate whether dissociative symptoms seen in adults with a PTSD diagnosis predicts outcomes of evidence-based treatment for PTSD. The purpose of the study is not to evaluate the differences between CT-PTSD and EMDR, but rather to examine whether the methods overall are affected by dissociative symptoms. The data material in the current study is based on clinical trials conducted at two different psychiatric outpatient clinics (DPS) in the Mid-Norway health region as part of the mentioned pilot project. The procedure for the clinical trials will be further explained below. As the participants, the clinical measures, the procedure and the treatment methods are the same as in the pilot project, the following sections will be described in a way fairly close to the description in summary of the pilot project of Bækkelund and colleagues (2017).

### 3.2. Participants / Sample

The sample in the original pilot project ($n$ = 71) was recruited in connection with outpatient treatment at Lovisenberg DPS (LDPS) and Follo DPS (FDPS). All recruited patients got an informational letter about the pilot project and signed an informed consent. To participate in the pilot project, the participants had to meet the following criteria: (1) between 18 and 65 years of age; (2) satisfaction of the diagnostic criteria of the DSM-5 PTSD diagnosis; (3) satisfactory competence in Norwegian or willingness to use an interpreter. The exclusion criteria for participating in the pilot project were: (1) high suicidal risk, operationalized by ongoing high suicide risk or serious suicide attempts within the last six months; (2) ongoing trauma (violence/assault); (3) ongoing life crisis which interferes with treatment; (4) other mental problems that will interfere with treatment as for example serious ongoing substance abuse or dissociative identity disorder (DID). Due to the pilot project design, there is no overview of whether many were excluded, the reasons for possible exclusion, etc. Whether this is a limitation to the current study, will be discussed later. However, according to Bækkelund et al. (2017), the therapists were encouraged to recruit widely.

A total of 71 patients participated in the original pilot project. In the current study, the sample size has been reduced. As the aim of the current study is to examine the effect of dissociation on trauma treatment, only patients with sufficient data to investigate pre-post treatment were included in the sample. A total of 24 patients were excluded, resulting in a final sample of 47 patients for the current study. The reason for the exclusion was that the participants had not completed measures at both start-up and at least one month after start up. In the summary of the pilot project, Bækkelund and colleagues (2017) points out that it took longer than expected to recruit patients and that few treatments were completed in May 2017. The therapists reported a low proportion of dropouts and it can therefore reasonable to assume that the missing data may be related to the fact that it took time before the patients were recruited to the project. There were no significant group-differences in age, gender, education or pre-scores between the excluded and included patients in the current study.

### 3.3 Procedure

The leader of the pilot project contacted two different DPS in the Mid-Norway health region: LDPS and FDPS. LDPS is part of Lovisenberg Diakonale Hospital in Oslo, Norway and provides treatment within mental health care and substance abuse treatment for the adult population in three city districts in Oslo. FDPS is part of Akershus University Hospital in Akershus, Norway and offers treatment to residents of the municipalities of Ski, Oppegård,

Ås, Nesodden and Frogn. Both clinics wanted to participate and recruited therapists to the pilot project.

A total of 33 mental health professionals were recruited as therapists. This included psychologists ($n$ = 25) doctors/psychiatrists ($n$= 5) and nurses with clinical education ($n$ = 3). No therapists were forced to participate in the project, however the interest among the professionals was great and due to limited resources an upper limit of therapists was set. After being recruited to the pilot project, the group of mental health professionals received training in one of two treatment methods: CT-PTSD and EMDR. The therapist's thereafter recruited patients from either ongoing treatment or new referrals according to inclusion and exclusion criteria.

All participants completed a number of assessments instruments, interviews and other evaluation measures both before and after the course of treatment, including self-reports of PTSD, dissociation, depression and anxiety symptoms. The current study compares pre- and posttreatment and assumes that any changes in symptom level posttreatment may be due to the effect of the treatment. This will however be discussed further. Baseline dissociation was added as a covariate to examine whether dissociation predicts the treatment outcome.

## 3.3 Treatment

### 3.3.1 Training and supervision

The recruited therapists were trained in either CT-PTSD or EMDR. The therapists at LDPS chose which method they wanted to receive training in and the therapists at FDPS were randomly assigned to one of the two methods (Bækkelund et al., 2017). A total of 13 therapists received training in CT-PTSD and 20 in EMDR during one joint introduction seminar, one method-specific training seminar in one of the methods and then two separate 3-day seminars with comprehensive training in on of the methods. A total of 7 therapists did not recruit patients to the pilot project after the training, while 26 therapists completed training, supervision and the following treatment. Reported reasons for dropout was change in workplace, maternity leave as well as experienced lack of time and resources (Bækkelund et al., 2017).

The therapist in the CT-PTSD group were trained to: 1) be able to assess and diagnose PTSD; 2) understand the cognitive model of PTSD and how it is related to treatment; 3) understand when to use CT-PTSD and not; 4) the primary interventions used in CT-PTSD; 5) be able to motivate patients to work directly with the traumatic memories; 6) understand which memory techniques are useful in different contexts; 7) use the full spectrum of techniques in cognitive behavioral therapy to change trauma-related cognitions; 8) act in line

with the model's principles and approach while showing an appropriate flexibility in adaptation for individual needs (Bækkelund et al., 2017). The therapist of the EMDR group completed the first step of the two-step training module for EMDR Norway. The training was organized with a focus on practical exercises and the group reviewed the following themes: 1) background; 2) theoretical framework; 3) trauma understanding; 4) safe place and resource rhetoric; 5) anamnestic framework; 6) EMDR protocol; 7) processing; 8) precautions; 9) treatment aspects; 10) dissociation; 11) processing rules strong affect; 12) special client groups (Bækkelund et al., 2017). The therapists thereafter received method specific group supervision. The CT-PTSD supervision was given in small groups of three or four in the form of video guidance, every fourteen days. There was a total of 10 sessions of 60-90 minutes each. The EMDR supervision was held face-to-face in groups of up to 8 therapists and it was held two longer sessions for each group (Bækkelund et al., 2017).

### 3.3.2 Treatment methods

Both treatment methods were performed according to standard protocols. The therapist was not specifically instructed on treatment length, but encouraged to have 90-minute sessions at least at the beginning of the course of treatment. The treatment was conducted in Norwegian and in individual treatment sessions (Bækkelund et al., 2017).

#### *3.3.2.1 Cognitive therapy for PTSD*

In short, CT-PTSD treatment is about reprocessing and integrating the memory of the traumatic event into the context of the individual's pre-trauma and post-traumatic experiences. This often involves reconstructing the event since aspects of the event may be forgotten. This may help the individual to form a coherent narrative and may reduce the fragmented memory seen in PTSD in addition to prevent or reduce intrusive reliving of the traumatic event (Ehlers et al., 2005; Ehlers & Clark, 2010).

The overall structure of CT-PTSD treatment is: 1) diagnostic assessment, 2) cognitive assessment of the cognitive themes and maintaining factors, in addition to outline of event, normalize/psychoeducation, reclaim life and rationale for reliving, 3) reliving: to identify hotspots and meanings, 4) reliving with restructuring to update trauma memories, 5) if needed, continue to address cognitive themes, triggers and update memory, 6) in vivo exposure and discriminating triggers (then vs. now), 7) continue to work on cognitive themes, triggers and update memory as required, 8) visit the scene for the traumatic event, 9) prevent relapse by being work on blueprint (e.g., how did your problems develop, what did have you learned during the course of treatment?). The therapists can use the elements of CT-PTSD

flexible, rather than following a fixed plan or sequence of interventions. The technique used depends on what is best for the individual patient. It is important that the therapist and the patient agree on a treatment goal that is specific, concrete, achievable and measurable and that there is a safe environment that is both practical and empathically. The recommended length per treatment session is 90 minutes (Ehlers et al., 2005; Ehlers & Clark, 2010).

A CT-PTSD therapy session usually starts with an update on the patients' condition, for example with a brief review of current symptoms and a review of last session's homework (Ehlers et al., 2005; Ehlers & Clark, 2010). It is common to record each treatment session, so that the patient can listen to the record at home. If the patient has not listened to the recording, the therapist should explore the barriers with the patient. Thereafter, the agenda for the session is set and the therapist and patient then proceed to the current session's main theme, for example imaginary controlled reliving. At the end of the session, the therapist and patient agree on homework and the therapist then ask the patient for feedback (Ehlers et al., 2005; Ehlers & Clark, 2010).

It is particularly important for the patient to reduce reliving, change the negative assumptions associated with the event or the consequences of the event, and to change any maintaining behaviour and cognitive strategies. According to the method, the negative appraisals of the trauma are closely integrated with the trauma memory (Ehlers & Clark, 2008). An important part of CT-PTSD is therefore imaginary controlled reliving. Reliving is mainly used to identify and restructure key meanings associated with the trauma memory. If a patient is worried or in doubt about the reliving, the therapist shall use time to explore and talk about these concerns (Ehlers et al., 2005; Ehlers & Clark, 2010). Then, the reliving starts and the patients retell what happened using their own words. The therapist should notice how the patient tells about the traumatic event, as it may contain important information for further treatment. For example, if the patient shows emotional overinvolvement, it may be useful to work on stabilization techniques. In contrast, if the patient is emotionally disconnected, it may be useful to investigate why. The reliving is only useful when the trauma memory is sufficiently activated and when the patient is not overwhelmed by the memories or loses contact with the present. This can be investigated along the session, with scales from 0-100 that examines how vivid the memory is experienced and how much it is perceived as the event is happening here and now. During the reliving the therapist should identify the hot spots (i.e., the worst moments of the event) and then help the patient to see the connection between these and their current problems (Ehlers et al., 2005; Ehlers & Clark, 2010). Ehlers

and Clarks (2000) cognitive model assumes that this work will help the individual to update their trauma memory.

#### *3.3.2.2 Eye Movement Desensitization and Reprocessing*

The overall goal in EMDR is to reprocess traumatic memories, by simultaneously focusing on spontaneous associations with traumatic images, thoughts, emotions and bodily sensations, and bilateral stimulation. Bilateral stimulation is often done in the form of rapid eye movements, finger movements or auditory stimulation (Navarro et al., 2018; Shapiro, 2002). This could lead to changes in cognitions, affects, bodily sensations and subsequent decrease in discomfort (Shapiro, 2002).

The EMDR therapy standard protocol has been refined over time and now includes 8 phases (Navarro et al., 2018). Phase 1 is about history taking, building the therapeutic alliance and creating a case conceptualization based on the past, the present and future. In phase 2, the patient is stabilized and prepared before activation of the traumatic memory network begins in phase 3. The third phase is about accessing the traumatic memory and identifying the thoughts, emotions and bodily physical sensations associated with the memory (Navarro et al., 2018). The desensitization of the memory begins in phase 4, where the therapist asks the patient to bring the traumatic image and negative cognition to mind, in addition to the associated emotion and physical discomfort. Then the therapist starts with the bilateral stimulation. During the stimulation, the patient is instructed to be an observer of what happens without making any type of judgment. The stimulation is repeated and for each round the patients is given time to express what they have thought or felt. When the memory no longer causes discomfort for the individual, the next phase begins. In phase 5, the patient is asked to bring positive cognitions to mind and to associate it with the traumatic experience. This allows an increase of connections and generalization to positive cognitive networks. Phase 6 involves body scanning and subsequent processing of all remaining somatic reactivity (Shapiro, 2001). The seventh phase should ensure patient stability. If necessary, the therapist should help the patient to feel safe before the session ends. The eight and last phase is about reevaluation and the therapist should consider whether previous reprocessed memories have been adequately reprocessed. In clinical practice, EMDR treatment is not a linear process, where the therapist moves from phase to phase, but is a more fluid and dynamic process (Shapiro, 2001). For example, the reevaluation often takes place at the beginning of a treatment session and the therapist must examine whether there are more associations that must be addressed.

### 3.4 Ethical considerations

As already mentioned, all the participants in the study gave their informed consent to participate in the study. The participants were recruited from either ongoing treatment or new referrals, which means that the sample represents an actual selection in two Norwegian outpatient clinics. It is believed that this will reflect an actual sample that will normally be found in Norwegian outpatient clinics. The treatment methods are considered to be evidence-based and the burden for patients participating in the study should not be significantly greater than if they had not participated in the study.

NKVTS sent an application for approval to the Norwegian Regional Committees for Medical and Health Research Ethics (REK), which considered the project as quality improvement and therefore not covered by the law on medical and health research (ref 2016/868/). The application was therefor forwarded to the Norwegian Center for Research Data (NSD), which approved the project (ref 49411/3/STM). A data processing contract was also signed with NSD to ensure a professional and secure data processing. The data material used in the current study has been stored and analyzed in Services for Sensitive Data (TSD). TSD is a research platform that meets the strict requirements for the handling and storage of sensitive research data. In addition, all the data files contain no person-sensitive information.

### 3.5 Measures

All the participants in the pilot project completed a number of assessment instruments, interviews and other evaluation measures. All measures used approved Norwegian translations. The measures included in the current study are attached in the Appendix and will be briefly explained below. The internal consistency of the measures was calculated with Cronbach's alpha and the alpha coefficient will be reported for each measure.

#### 3.5.1 Background data

The participants filled in a number of demographic questions about age, education, occupational and relationship status and treatment history. The Structured Clinical Interview for DSM-5 PTSD (SCID-5; First, 2014) was used to assess current PTSD symptoms in addition to the patient’s history of traumatic events. The ICD-11 Trauma Questionnaire (ICD-TQ; Karatzias et al., 2016) was used to measure Complex-PTSD symptoms and the M.I.N.I International Neuropsychiatric interview (M.I.N.I; Sheehan et al., 1998) was used to receive information on comorbid disorders. These data will solely be used to describe the participants.

### 3.5.2 Depression and anxiety

The participants were assessed for depression and anxiety at pre- and posttreatment with The Patient Health Questionnaire Depression Scale (PHQ-9; Kroenke, Spitzer & Williams, 2001) and The Patient Health Questionnaire Generalized Anxiety Disorder Scale (GAD-7; Spitzer, Kroenke, Williams & Löwe, 2006). The participants' symptoms score on the PHQ-9 and GAD-7 will be used descriptively to show the patients condition before and after treatment. See Table 3 for pretreatment scores and Figure 1 for a presentation of the overall change in mean scores.

The PHQ-9 is a 9-item depression module from the full Patient Health Questionnaire (Kroenke et al., 2001). The PHQ-9 is used to make a criteria-based diagnosis of depressive disorders and is a reliable and valid measure of depression severity and therefore considered a useful clinical and research tool (Kroenke et al., 2001). According to Kroenke et al. (2001) a score of 10 or higher is the threshold for a depression disorder. In the current study, the internal consistency of the PHQ-9 was good, with Cronbach's alpha = .884.

The GAD-7 is a brief clinical measure for assessing one of the most common anxiety disorders seen in general medical practice and in the general population, respectively generalized anxiety disorder (Spitzer et al., 2006). GAD-7 is a self-reported questionnaire and the 7-item anxiety scale is an efficient tool for screening GAD and assessing its severity in clinical practice and research. In addition, it has good reliability and validity (Spitzer et al., 2006). According to Spitzer et al. (2006) a score of 10 and higher is the threshold for anxiety disorder. The internal consistency of the seven items in GAD-7 is good, with Cronbach's alpha = .812.

### 3.5.3 PTSD

To measure PTSD symptoms, the PTSD Checklist for DSM-5 (PCL-5; Blevins, Weathers, Davis, Witte & Domino, 2015) was used. The PCL-5 is the newest version of one of the most widely used self-report measures of PTSD and demonstrates excellent reliability and validity. It is therefore considered a psychometrically sound measure of the DSM-5 PTSD symptom criteria (Blevins et al., 2015). The internal consistency of the 5 items in PCL-5 is good, with Cronbach's alpha = .882.

The PCL-5 includes 20 items that correspond to the four symptom clusters in the DSM-5. The items are supplied with a 5-point scale, ranging from "0 = not at all" to "4 = extremely" and the total scores range from 0 to 80. The total score is used to assess the presence and severity of PTSD symptoms in the last month and preliminary findings have

reported different cut-off scores (Ashbaugh, Houle-Johnson, Herbert, El-Hage & Brunet, 2016). Ashbaugh et al. (2016) recommend a cut off-score of 31.

### 3.5.4 Dissociation

Pathological dissociation was operationalized through two measuring instruments: The Brief Dissociative Experience Scale (DES-B; Dalenberg & Carlson, 2010) and Somatoform Dissociation Questionnaire (SDQ-5; Nijenhuis, Spinhoven, van Dyck, van der Hart & Vanderlinden, 1997). It has been argued that the DES-B and SDQ-5 together gives a broad picture of the dissociative symptoms, by measuring both psychoform and somatoform dissociation (Rudstam, Elofsson, Søndergaard, Bonde & Beck, 2017). The inclusion of both measuring instruments is in line with that dissociative symptoms manifest in psychoform and somatoform symptoms (Nijenhuis et al., 2006).

#### *3.5.4.1 Brief Dissociative Experience Scale*

The DES-B is a modified version of the Dissociative Experience Scale, originally developed by Bernstein and Putnam (1986). DES is a well-recognized psychological self-assessment questionnaire that measures dissociative symptoms during the past 7 days, and is used as a screening instrument for dissociative disorders. The DES-B questionnaire consist of 8 items and each item on the measure is rated on a 5-point scale, ranging from “0= Not at all” to “4= More than once a day”. The total score can range from 0 to 32 and higher scores indicate a greater severity of dissociative experiences. The total raw score is divided by the total number of items in the measure, which reduces the overall score to a 5-point scale. This allows the clinician to think of the severity of the individual’s dissociative experiences in terms of none mild, moderate, severe or extreme.

According to APA (2013), the use of the average total score was found to be reliable, easy to use and clinically useful to the clinicians. The DES-B can be used before an individual is diagnosed with a dissociative disorder or clinically significant dissociative symptoms and thereafter, prior to follow-up visits with clinicians (APA, 2013). In the current study, Cronbach's alpha = .801, suggesting that the eight items have good internal consistency reliability variance.

#### *3.5.4.2 Somatoform Dissociation Questionnaire*

The 5-item Somatoform Dissociation Questionnaire (SDQ-5) is a screening instrument for dissociative disorders developed by Nijenhuis and colleagues (1997). The SDQ-5 is a short version of SDQ-20 with five items and includes the items 4, 8, 13, 15 and 18 from SDQ-20 (see appendix). The items are supplied with a 5-point scale, ranging from "1 = this applies

to me not at all" to "5 = this applies to me extremely". The total SDQ-5 score can range from 5 to 25 and the recommended cut-off point is 8 for somatoform dissociation, while a score over 12 indicates DID (Nijenhuis et al., 1997).

While the SDQ-20 is used to evaluate the severity of somatoform dissociation, Nijenhus et al. (1997) points out that the SDQ-5 has the additional advantage of being short and suitable for use as a screening instrument for dissociative disorders. Nijenhuis and colleagues (1997, 1998) found the 5-item as a group to discriminate with good to high sensitivity and specificity between dissociative and non-dissociative psychiatric outpatients. According to Nijenhuis et al. (1997), the reliability of the SDQ-5 is also satisfactory and when compared with the DES as a screening instrument for dissociative disorder, the SDQ-5 did at least equally well. In the current study, the internal consistency for the 5 items in SDQ-5 is .591, suggesting that the items have poor internal consistency reliability variance. Due to the theoretically proposed importance of somatoform dissociative symptoms, the SDQ-5 were retained in the main analyses although the low internal consistency. The findings should therefore be interpreted with caution and the inclusion of SDQ-5 will be further discussed.

### 3.6 Statistical analyses

All statistical analyses were performed in IBM SPSS Statistics version 25 for Windows and have been performed by the master thesis's author. For accommodating missing data, the participants who lacked pre- and posttreatment data where excluded ($n$ = 24). This approach is known as the complete case analysis and is a frequently used method in handling missing data (Field, 2013). As mentioned, there were no significant differences between the excluded and included participants on age, gender, education or pretreatment-scores. This may argue that the exclusion does not lead to a selection bias.

Descriptive statistics were calculated based on background data. Next, a Paired-Sample T-Test was performed to evaluate the overall effectiveness of the treatment. Then a one-way repeated measure ANOVA was conducted to examine whether there were any significant differences in treatment outcome between the two treatment methods. As the primary goal of the current study is to examine whether dissociation predicts treatment outcomes, a Pearson's $r$ correlation analysis was performed to assess the relationship between the pretreatment scores for PTSD and dissociation. Subsequently, a one-way repeated measure ANOVA with dissociation as a covariate was conducted. Finally, a correlation analysis was conducted to examine the interaction between the dissociation and treatment outcome.

The current study used a significance level of $p < 0.05$. This means that a 5% chance of type-1 error is accepted, that is how likely it is that the data is false positive or accidental (Field, 2013). The exact p-values will is reported if possible. Effect sizes were calculated using Cohen's *d* statistic and the eta squared, $\eta^2$. According to Cohen (1992), *d*-values of 0.2, 0.5 and 0.8 are respectively, small, moderate and large effect sizes. The eta squared, $\eta^2$ was calculated and converted to r by the square root of $\eta^2$ (Field, 2013). According to Cohen (1992), R-values of 0.1, 0.3 and 0.5 are respectively small, medium and large effect sizes. The strength of a correlation is evaluated by the correlation coefficient: the closer to 1 or −1, the stronger relationship between the variables (Field, 2013).

### 3.6.1 Assumptions of parametric tests

For a parametric test to valid, there are several assumptions that must be met (Field, 2013). The Paired-Sample T-test has several assumptions; there should be a continuous, dependent variable, the observations should be independent of one another and the depended variable should not contain any outliers and should be approximately normally distributed (Field, 2013). The two first assumptions are met in the current study: the PCL-5 score does produce continuous data and it is reasonable to assume that the there are independent observations. To test the assumption of normality, a compute variable was created to represent the difference between the pre- and posttreatment PCL-5 scores. Then the Shapiro-Wilk test was conducted, $p = .213$. The results suggest that these data are normally distributed, with skewness = .353 ($SE$ = .347) and kurtosis = -.630 ($SE$ = .681). The histogram also suggests a normal distribution, as it looks approximately symmetric and bell-shaped. Examination of the boxplot shows that there are no significant outliers in the distribution. The assumptions of the Paired-Sample T-Test are thus satisfied.

A one-way repeated measure ANOVA is an extension of the Paired Sample T-Test. For such an ANOVA to be valid, there are several assumptions that must be met (Field, 2013). There should be a dependent variable measured on the continuous level, the independent variable should consist of two or more categorical related groups, there should be no significant outliers and the distribution of the dependent variable should be approximately normally distributed at each level of the independent variable. At last, the variances of the differences between all combinations of related groups must be equal, also known as sphericity (Field, 2013).

The two first assumptions of the ANOVA are met in the current study: time is a continuous dependent variable and the same participants are measured on two occasions on the same PCL-5 measure. To test the assumption of normality, the pre- and posttreatment

PCL-5 scores were examined in an exploratory analysis. For the pretreatment data, the p-value for the Shapiro-Wilks test is .049, with skewness = -.799 (*SE* = .347) and kurtosis = .826 (*SE* = .347). These results suggest that the data is not normally distributed. However, the p-value is close to a significant effect ($p<0.05$) and the histogram looks approximately symmetric and bell-shaped. According to the central limit theorem, a sample will have a normal distribution if it is big enough (cited in Field, 2003, p. 170). As the current sample is larger than the widely accepted value of a sample size of 30, it can be assumed that the data is normally distributed. The histogram for the posttreatment PCL-5 score does not look normally distributed. This is supported by the Shapiro-Wilks test, where the p-value is .004, skewness = .041 (*SE* = .347) and kurtosis -1.414 (*SE* = 0.681). This suggests that the data is not normally distributed. The data set was analyzed with and without a log10 transformation in SPSS. The transformation did not significantly affect the results and the data set were therefore retained without transformation.

Examination of boxplot shows that there were three significant outliers in the PCL-5 pretreatment score, respectively scores on 23, 18 and 14. These scores are within 3 standard deviations below the mean. The outliers were examined for possible obvious data or measurement errors, which was not found. Thereafter, the analysis was performed with and without an exclusion of the outliers ($n = 3$). The exclusion of the outliers did not significantly affect the results and the data set was therefore retained without exclusion of the outliers. For posttreatment PCL-5 scores there are no significant outliers.

Finally, the concept of the sphericity does not apply when there are only two levels of the within-subjects factor. However, there needs to be homogeneity of variances. The Levene's test for homogeneity of variances indicated equal variance, $F(2,35) = .544$, $p = .466$. The results suggest that there is equal variance at both measurement times. In sum, the parametric assumptions are not violated and it was chosen to retain the original data set.

# 4. RESULTS

## 4.1 Sample characteristics

Table 2 presents demographics, occupational status and treatment history characteristics for all the participants in the current study ($N = 47$). Of note, the vast majority of the sample was female, a substantial majority of the participants reported multiple traumatic life experiences and over half of the participants reported having survived trauma exposure before the age of 18 years.

| **TABLE 2 Sample characteristics** | *(N* = 47) |
|---|---|
| Demographics | |
| Age | 32.6 (8.67) |
| Female gender | 81 % |
| Married or partner | 45 % |
| College-level education | 41.5 % |
| Norwegian ethnicity | 78.6 % |
| Occupational status | |
| Student, full or part time | 17 % |
| Employed, full- or part-time | 44.7 % |
| Benefits | 46.8 % |
| Trauma and treatment history | |
| Experience of trauma under 18 years of age | 67.6% |
| Experience of several traumas | 82.5% |
| Age for first contact with mental health services | 23.18 (8.8) |
| Previous PTSD diagnosis | 34% |
| Previous PTSD treatment | 10.6% |

*Note:* Data presented as means (SD) or percentages.

Table 3 presents the participants clinical characteristics at pre-treatment, including an overview of the mean scores for PTSD, anxiety, depression and dissociation. The pretreatment scores indicate that the participants in general had high symptoms of PTSD before treatment and the participants also reported complex trauma and dissociative symptoms. The converted overall score for the DES-B is 1.41 and rounded to the nearest whole number, the DES-B score indicates that the sample has a mean score of dissociative experiences equivalent to a mild severity. The SDQ-5 score is just above the clinical cut-off score. These results indicate that the sample has both psychoform and somatoform dissociative symptoms.

Several of the patients reported on comorbid disorder, including ongoing or previous major depression and suicidality. The vast majority of the patients who reported suicidality over the past month reported suicide risk specified as low, while 16% reported moderate suicide risk and one patient reported high suicide risk. It is also worth mentioning that the

exploratory analyses indicate that 9 patients have problems with substance abuse, 2 patients have ongoing or previous psychotic disorder and 2 patients have an ongoing eating disorder. High suicidal risk and serious ongoing substance abuse were exclusion criteria for original pilot project (Bækkelund et al., 2017). As the current study is no further risk for the patients, they were not excluded in the analyses.

**TABLE 3 Sample characteristic**

| Clinical characteristics of the sample at pre-treatment | (*N* = 47) |
|---|---|
| M.I.N.I | |
| Major depressive episode | 77.3% |
| Suicidality | 54.5% |
| Ongoing suicide risk - low | 80% |
| Generalized Anxiety Disorder | 13.6% |
| | |
| Complex PTSD (ICD-11 TQ) | 36.34 (11.85) |
| Pretreatment scores | |
| PTSD (PCL-5) | 49.23 (12.58) |
| Anxiety (GAD-7) | 12.1 (4.57) |
| Depression (PHQ-9) | 15.26 (5.86) |
| Dissociation (DES-B) | 11.3 (7.30) |
| Dissociation (SDQ-5) | 8.24 (3.41) |

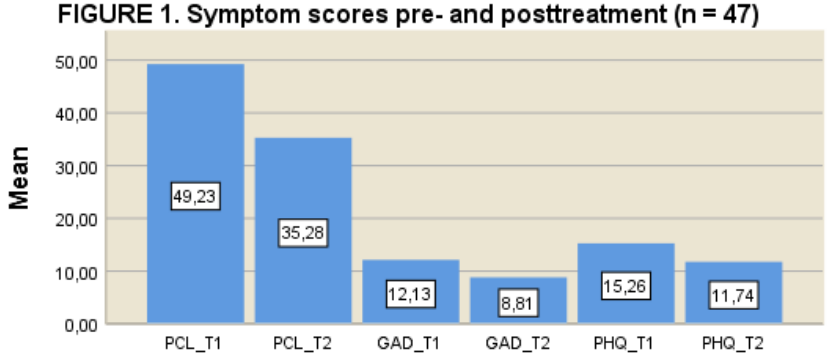
*Note:* Data presented as means (SD) or percentages.

## 4.2 Treatment effect

A Paired- Samples T-Test was conducted to compare the PCL, GAD and PHQ mean scores in the sample before and after receiving trauma-focused treatment. There was a significant difference in the scores for all measures (see Table 3 for mean pre-treatment scores and standard deviation). There was a significant differences in the scores for PCL-5 at posttreatment ($M$ = 35.28, $SD$ = 21.71), $t$(46)=5.77, $p$ = < .001, $d$ = 0.841. There was a significant differences in the scores for GAD-7 at posttreatment ($M$ = 8.81, $SD$ =6.27), $t$ (46)=4.03, $p$ = < .001, $d$ =0.588. There was significant difference in the scores for PHQ-9 at posttreatment ($M$ = 11.74, $SD$ = 7.20), $t$(46)= 3.96, $p$ = < .001, $d$ =0.578. Cohen's $d$ was estimated at 0.841 for the PCL-5 condition, which is found to exceed Cohen's (1992) guidelines for a large effect. The effect size for GAD-7 ($d$ = 0.588) and PHQ-9 ($d$ = 0.578) was found to be moderate.

These results suggest that the treatment methods do have an effect on symptom scores, as they decrease. Specifically, the results indicate that CT-PTSD and EMDR reduce PTSD, depression and anxiety symptoms. A graphical representation of the pre- and posttreatment symptom means is displayed in Figure 1.

FIGURE 1. Symptom scores pre- and posttreatment (n = 47)




*Note:* Data presented as means.

A one-way repeated measure ANOVA was conducted to investigate whether the mean PCL-5 symptom score does differ statistically significant between the two treatment methods, CT-PTSD and EMDR. As the assumption of sphericity is not met, a Greenhouse-Geisser correction was used. There was no statistically significant difference in mean PCL-5 score between the CT-PTSD and the EMDR groups, $F(1,35) = 1,112$, $p = .299$, $\eta^2 = .031$. The converted $\eta^2$, gives an estimated R-value on 0.17, which indicates a small effect. This result suggests that there would be no significant differences between CT-PTSD and EMDR on treatment outcome.

### 4.3 Dissociation as a predictor for treatment outcome

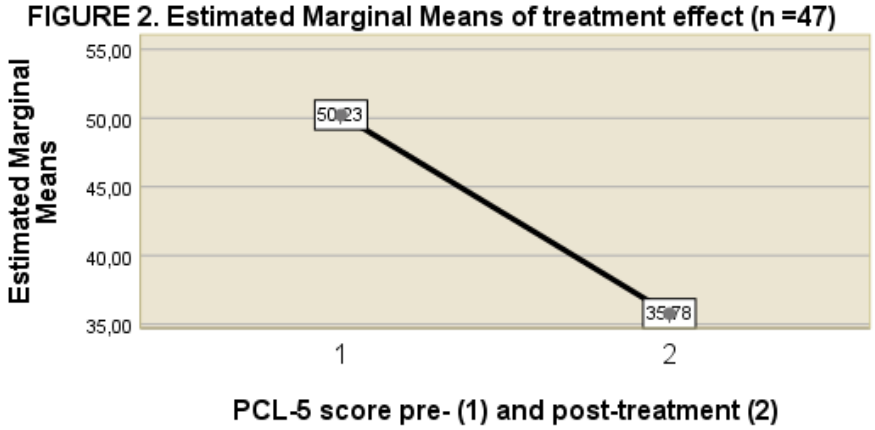
A Pearson's *r* correlation analysis was performed to assess the relationship between the pretreatment scores for PTSD and dissociation. There was a positive significant correlation between the PCL-5 score and DES-B score and a positive, non-significant correlation between PCL-5 score and SDQ-5 score (see Table 4). Overall, increases in PTSD symptoms were correlated with increases in dissociative symptoms measured by DES-B whereas increases in PTSD symptoms were not correlated with an increase in dissociative symptoms measured by SDQ-5.

**TABLE 4 Correlation between pretreatment PCL-5 score and dissociation (n = 47)**

| | | PCL_5.1 | DESB_SUM.1 | SDQ_SUM.1 |
|---|---|---|---|---|
| PCL_5.1 | Pearson Correlation* | 1 | .459** | .181 |
| | Sig. (2-tailed) | | .003 | .253 |

*Note:* **Correlation is significant at the 0.01 level (2-tailed)
Pearson Correlation = Pearson's r p-value

A one-way repeated measure ANOVA with baseline dissociation as covariates was conducted to examine the effect of dissociation on treatment outcome. The mean scores for DES-B and SDQ-5 pretreatment are presented in Table 3. There was non-significant effect on treatment outcome when controlled for DES-B, examined by the Greenhouse-Geisser correction, $F(1,40) = 1.385$, $p = .246$, $\eta^2 = .033$. The converted $\eta^2$, gives an estimated R-value on 0.18 which indicates a small effect. There was non-significant effect on treatment outcome when controlled for SDQ-5, examined by the Greenhouse-Geisser correction, $F(1,40) = .628$ $p = .433$ , $\eta^2 = .015$. The converted $\eta^2$, gives an estimated R-value on 0.12 which indicates a small effect. These results suggest that dissociation does not have a significant effect on treatment outcome. Specifically, the results suggest that dissociative symptoms reported by DES-B or SDQ-5 is not a predictor on treatment effect. A graphical representation of the estimated marginal means of treatment is displayed in Figure 2.




*Note:* Data presented as means.

Furthermore, a correlation analysis was conducted to examine whether dissociation and treatment outcome is interrelated. A Pearson's *r* correlation analysis suggests that there was a non-significant correlation of .175 ($p = .281$) between reported dissociative symptoms (DES-B) and change in mean PCL-5 score and a non-significant correlation of .124 ($p = .433$)

between reported dissociative symptoms (SDQ-5) and change in mean PCL-5 score. Overall, there was a low and non-significant correlation. Increases in dissociative symptoms were not significantly correlated with increases in mean PCL-5 change score. This result provides support for the results from the repeated measures ANOVA with dissociation as a covariate, concluding that dissociation is not a predictor of treatment outcome.

# 5. DISCUSSION

## 5.1 Dissociation as a predictor for treatment outcome

The present study examined the impact of dissociative symptoms on exposure treatment efficacy among traumatized individuals from two clinical samples in Mid-Norway health region. The main results indicate that baseline dissociative symptoms did not moderate CT-PTSD or EMDR treatment outcome. There was a positive and significant correlation between pre-treatment PTSD symptoms and dissociative symptoms, which means that an increase in PTSD symptoms is associated with an increase in dissociative symptoms. However, there was a low, non-significant correlation between dissociation and treatment effect. The findings are contrary to prevalent theoretical assumptions and long-standing clinical observations (Foa & Kozak, 1986; Lanius et al., 2012), but in line with the most empirical research to date (Cloitre et al., 2012; Hagenaars et al., 2010; Halvorsen et al., 2014; Resick et al., 2012).

In line with the findings of Cloitre et al. (2012), Hagenaars et al. (2010), Halvorsen et al. (2014) and Resick et al. (2012), the patients dissociative symptoms at pre-treatment did not predict the outcome of the trauma-focused treatment. The majority of the patients did report low dissociative symptoms, which is in line with the mentioned studies, although dissociation has been assessed with different measurements across the studies. Dissociative symptoms are present in a considerable percentage of psychiatric patients (Candel & Merckelbach, 2004) and typically manifest as mild or moderate forms in individuals with PTSD or complex PTSD (Carlson et al., 2012). The low mean level of dissociative symptoms in the sample was therefore not surprising. In conjunction with the previous research, the current study suggests that standard protocol trauma-focused treatments are effective for patients with trauma history and dissociative symptoms. Individuals with PTSD and dissociative symptoms appear to tolerate exposure to traumatic memories. It has previously been claimed that dissociation while recalling a traumatic event may impede cognitive and emotional processing (Foa & Hearst-Ikeda, 1996; van der Kolk & Fisler, 1995). As there is a decrease in symptoms, it can be argued that the participants are not emotionally or cognitively overwhelmed in a way that interferes with the treatment. However, as the present study did not assess dissociation at subsequent treatment sessions or at follow-up this interpretation should be viewed with caution. It is unclear whether variation in dissociation across treatment sessions influences treatment response or if the patients disconnect as a response to highly distressing memories during treatment. However, dissociation tends to decrease over time with trauma treatment

(Carlson et al., 2012; Dalenberg et al., 2012) and the large treatment effect is therefore not surprising.

The findings indicate that EMDR and CT-PTSD treatment among patients at outpatient clinics in which the majority have experienced multiple and/or early traumatization, are effective and tolerable. It is therefore reasonable to assume that both treatment methods do help the patients to reprocess and integrate the fragmented traumatic memories. Reprocessing and integration of the traumatic event could further lead to changes in cognition, affect and bodily sensations, which subsequently can lead to a decrease in symptoms (Shapiro, 2002). Due to the naturalistic conditions of the study, there were not established a control group. It is therefore a possibility that the improvement during the outpatient period was due to other factors than treatment. However, the patients generally had been ill for a longer period. As presented in Table 2, over half of the participants in the sample reported about trauma experiences before the age of 18 years. The sample's mean age for first contact with mental health services was 23 years while the mean age of the sample at the time of the pilot project was 32 years. A small minority of the sample (10.6%) had previously received trauma treatment despite the fact that one third of the sample already had a PTSD diagnosis before being recruited to the pilot project. This may indicate that during an average of 10 years of contact with mental health services, up to 90% of the sample has not received treatment or have received treatment prior to the start of the outpatient treatment, which was not sufficient to alleviate their difficulties. This should, however, be interpreted with caution. First, the study does not directly examine at what age the participants experienced the trauma that triggered the development of PTSD. While one individual may develop PTSD after a single trauma, others may develop PTSD as a consequence of the cumulative strain after experience of repeated traumatization (Bisson, 2007). Second, PTSD symptoms usually begin within 3 months of the traumatic event, but the diagnosis may have a delayed expression of at least 6 months (APA, 2013). Although most individuals experience some posttraumatic stress symptoms immediately after exposure to a traumatic event, only a small proportion develops chronic symptoms (Cusack et al., 2015). However, as several meta-analyses have shown that trauma-focused interventions are effective, including EMDR and CT-PTSD (e.g., Bisson et al., 2013; Bradley et al., 2005; Cusack et al., 2015; Lee et al., 2016), it is reasonable to assume that the effect is due to the treatment.

In addition to replicate what seems to be a rather consistent finding of a non-significant effect of dissociative symptoms in trauma-focused treatments, the current study has contradictory findings than the study by Price et al. (2014) and Bae et al. (2016). Price

and colleagues (2014) found that dissociation did predict poorer response in early exposure interventions and argue that dissociation does account for approximately half of the variance in PTSD 12 weeks after trauma exposure. Bae and colleagues (2016) found pre-treatment dissociative symptoms to predict nonresponse to EMDR treatment among adults with PTSD. It is of interest to note that Bae et al. (2016) did include patients with higher dissociative symptomatology than previous studies that have failed to identify dissociation as a poor outcome factor. While low and moderate dissociative symptoms are expected in individuals with PTSD and complex PTSD (Carlson et al., 2012), Bae et al. (2016) argue that patients with stronger dissociative symptoms likely have been excluded from previous studies, resulting in a selection bias. They further point out that a significant number of PTSD trials have excluded clinical conditions related to dissociation (e.g., suicidal ideation with intent and substance abuse) and argue that it is likely that some participants with dissociative symptoms therefore are ruled out altogether. After a review of the abovementioned studies' exclusion criteria, it does not appear that dissociation has been an explicit exclusion criterion. Of note, all four studies excluded patients with acute suicidality and substance dependence or current severe substance abuse. However, Cloitre et al. (2012), Hagenaars et al. (2014) and Halvorsen et al. (2012) did include patients with different levels of dissociation, ranging from low, moderate and severe or low and high dissociation. There is no overview of whether patients with higher dissociative symptoms were excluded in the original pilot project conducted by NKVTS. An exploratory analysis of the current sample ($n$ = 47) shows that patients with substance abuse and suicide risk were included. It is therefore reasonable to assume that patients with higher dissociative symptoms were not systematically excluded, as long as they did not meet the criteria for DID.

Furthermore, as none of the previously mentioned studies include a measure of somatoform dissociation, it can be argued that the inclusion of somatoform dissociation strengthens the replication of the non-significant effect. As mentioned, the description of dissociative symptoms usually only recognizes the psychoform dissociation but this is contrary of the presence of bodily dissociation included in the DSM-5 (APA, 2013). An inclusion of somatoform dissociation along with a version of the well-recognized DES could therefore give a more complex and broader understanding of dissociation.

### 5.1.1 Higher dissociative symptoms

An exploratory analysis of the sample shows that 14 participants had a total raw DES-B score over 15 points. This is equivalent to a moderate or higher severity of dissociation. Furthermore, 5 participants had a total raw score over 23 points, which is equivalent to severe

dissociative symptoms. In other words, approximately 30% of the sample did experience dissociative symptoms almost every day or about once a day during the last week before they were recruited to the pilot project. There were no significant differences between the sample in the original pilot project ($n$ = 71) and the reduced sample ($n$ = 47). As several of the patients in the current sample did report substance abuse and suicide risk, this indicates that the present study did not systematically exclude patients with higher dissociative symptoms. Considering that Bae et al. (2016) argue that there likely has been such a selection bias in previous studies, the higher dissociative scores in one third of the sample do strengthen the present study. However, the sample of patients with higher dissociative symptoms is small ($n$ = 14) and the findings should be interpreted with caution and no conclusion should be drawn.

As presented in Table 5, the smaller sample did report higher scores on all of the pre-treatment scores when compared to the whole sample of 47 participants (see Table 2 and 3 for a comparison). One of the 14 patients did report the whole sample's highest score on PCL-5, respectively a score of 72. A Paired Samples T-Test shows that there are significant changes in PCL-5 score before and after treatment, $t(13) = 2.386$ , $p = .033$, $d = 0.64$. According to Cohen's (1992) guidelines, this indicates a moderate effect. An one-way repeated measures ANOVA supports that there were a significant change in PCL-5 score before and after treatment, $F(1,13) = 5{,}693$, $p = .033$, $\eta^2 = .305$. The converted $\eta^2$, gives an estimated R-value of 0.55, which indicates a large effect. These results suggest that the treatment methods do have a moderate to large effect on PTSD symptoms, as the symptoms decrease. As seen in Table 5, the mean PCL-5 score at pretreatment is 44 and the sample report high posttreatment scores of anxiety and depression when compared to the whole sample. This indicates that the 14 patients had a poorer health condition both before and after treatment.

| **TABLE 5 Sample characteristic** | ($N$ = 14) | |
|---|---|---|
| Clinical characteristics of the sample at pre-treatment | | |
| Experience of trauma under 18 years of age | 57% | |
| Experience of several traumas | 78.5% | |
| | | |
| Pretreatment scores | | |
| PTSD (PCL-5) | 57.2 (9.00) | 44 (23.7)** |
| Anxiety (GAD-7) | 15.3 (2.8) | 11.3 (7.4)** |
| Depression (PHQ-9) | 19.1 (4.5) | 14.8 (8.1)** |
| Dissociation (DES-B) | 19.7 (3.9) | |
| Dissociation (SDQ-5) | 9.3 (4.00) | |

*Note:* Data presented as means (SD) or percentages. ** Posttreatment scores.

A Pearson's *r* correlation analysis was conducted to examine the relationship between the higher dissociative symptoms measured with DES-B and change in mean PCL-5 score. There was a non-significant correlation of .524 ($p$ = .054) between the DES-B score and PCL-5 change score. Despite the fact that the correlation is non-significant, the effect is strong. Finally, a one-way repeated ANOVA with baseline dissociation was conducted to examine the effect of dissociation on treatment outcome. The mean baseline scores for dissociation are presented in Table 5. There was a non-significant treatment outcome when controlled for DES-B, examined by the Greenhouse-Geisser correction, $F(1,12) = 4.548$, $p$ = .054, $\eta^2 = .275$. The converted $\eta^2$, gives an estimated R-value on 0.52, which indicates a large effect. Due to the strong effect it is reasonable to assume that a larger sample size would have given a statistically significant effect.

The findings indicate that higher dissociative symptoms pre-treatment does not significantly predict the outcome of EMDR or CT-PTSD, but there is a strong effect between dissociative symptoms and changes in PCL-5 score as well as dissociative symptoms and the treatment outcome. These findings should be interpreted with caution due to the small sample size, but as already mentioned; the strong effect size suggests that the results would be statistically significant in a bigger sample. No firm conclusion can be drawn and the findings should be replicated in a bigger sample size with higher dissociative symptoms. However, the results indicate that higher dissociative symptoms will affect treatment outcome. This has important clinical and theoretical implications and will be discussed further below.

### 5.2 Treatment effect

There was a significant change in the mean PCL-5 score, with a mean decrease on 13.95 ($SD$ =16.59) points at posttreatment. Although the patients in the present study did improve during treatment, the majority of the patients did report a relatively high level of symptoms after treatment ($M$ = 35.28, $SD$ = 21.71). The mean post-treatment PCL-5 score was above the recommended cut-off score by Asbhaugh et al. (2016). This indicates that although the patients did experience a decrease in PTSD symptoms, they still experience significant impairment in social, occupational or other important areas of functioning (APA, 2013). As presented in Table 2, almost half of the sample received some kind of benefit from the Norwegian government at pre-treatment. This includes sick leave and being occupationally disabled. As the patients still have high pre-treatment scores, it is reasonable to assume that they continued to receive benefits after treatment. Hagenaars et al. (2010) and Halvorsen et al. (2014) did report similar findings. These studies found that patients with dissociative symptoms do respond to trauma-focused treatments. However, the rates of PTSD

symptoms were still high at follow-up and it has therefore been argued that patients with high dissociative symptoms likely require longer treatment courses. Ehlers et al. (2013) argue that it often is sufficient to extend the duration of standard treatment when patients have experienced multiple traumas and/or severe comorbidity. As the majority of the patients in the current sample have experienced several traumas, have high PTSD symptoms and do experience dissociative symptoms, it may be argued that the sample needs a longer treatment for further symptoms improvement due their complex symptoms.

The analysis of patients with higher dissociative symptoms ($n$ = 14) supports the recommendation of longer treatment courses for patients with complex symptoms. A slightly lower percentage of the individuals in this group had experienced early and/or repeated traumatization when compared to the whole sample. However, the subgroup reports higher symptoms scores on all measures, which indicate that they have a complex clinical picture. The overall treatment effect was found to be greater for the whole sample than for the 14 participants with higher dissociative symptoms, respectively Cohen's $d$= 0.84 and 0.64. The results from the two one-way repeated measures ANOVA's, with dissociation as a covariate does indicate that dissociation does not have a significant effect on treatment outcome. However, when comparing the effect sizes, it seems that the dissociation has a greater effect on the outcome in the higher dissociative sample. This can further be compared to the findings of Price et al. (2014) who found baseline dissociation to predict poorer response in early exposure interventions. Despite that the results in the present study are not significant, the effect sizes suggest that dissociation has an effect on treatment outcome and the higher the dissociative symptoms, the even greater effect. One limitation of both Price et al. (2014) and the current study is that dissociation was not assessed at subsequent treatment sessions or at follow-up. It is therefore not known whether dissociation persists over time and continues to disrupt the individual's natural recovery or if the dissociation resolve, either naturally or along with the trauma treatment. Furthermore, it can be argued that the study of Bae et al. (2016) would have had different results if the patients had received more than an average of 4 treatment sessions. As previous research (Carlson et al., 2012; Dalenberg et al., 2012) have found peritraumatic dissociation to gradually resolve along with other trauma-induced symptoms during trauma treatment, it is reasonable to assume that this would also have been found in Bae et al. (2016), Price et al. (2014) and in the current study.

### 5.3 Limitations and strengths

Although the present results substantiate and extend previous findings, the study has several noteworthy limitations, so the findings should be viewed with caution. First, there was

no control group. Therefore, there is a possibility that the improvement during the outpatient period was due to other factors than the treatments. Nor was there a control group of non-dissociative PTSD individuals. Another limitation is that the study did not include a follow-up of the participants. It can be argued that a follow-up and dissociation being assessed during and after treatment would provide further insight into the relationship between dissociation and PTSD outcome over time. Furthermore, the sample of the patients with high dissociative symptoms was small, which reduced the power to find significant differences. However, the strength of the study is that it was conducted with patients with a wide range of dissociative symptoms, including low, moderate and severe dissociative symptoms. As the study consisted of adult patients with trauma histories and dissociative symptoms in need of outpatient treatment, the findings cannot be extended to general populations or other patient groups. There were no significant group differences between the excluded and included participants in the current study, which indicates that the sample does represent an actual sample that would be found at Norwegian outpatient clinics.

Another limitation was the use of self-report measures and screening instruments. To provide additional diagnosis, self-report measures should be followed up by structured clinical interviews. The SDQ-5 had low internal consistency. In line with the findings by Nilsson and colleagues (2015), it is therefore recommended that future research should use the SDQ-20. The SDQ-20 is a rather short questionnaire itself and the need for a shorter version with poorer psychometric properties could not be supported (Nilsson, Lejonclou, Svedin, Jonsson & Holmqvist, 2015). However, including somatoform dissociation as a measure may help therapists to get a complete clinical picture of the patients and their difficulties. This can further help normalize the patient's bodily symptoms, such as numbness or bodily expressions of panic, something that can help to reduce the symptoms. Furthermore, the vast majority of the sample was female. This is not surprising, as women tend to be more likely to develop PTSD in response to a traumatic event than men. Despite the limitations described above, the current study has important theoretical and clinical implications, which will be further discussed below.

## 5.4 Implications

### 5.4.1 Theoretical implications

The results also have some implications for current theories on trauma-focused treatment for PTSD. First, considering the positive correlation between the PCL-5 score and DES-B score, it is reasonable to assume that dissociation may indicate an increased need to escape from painful memories: the higher PTSD symptoms, the higher dissociative

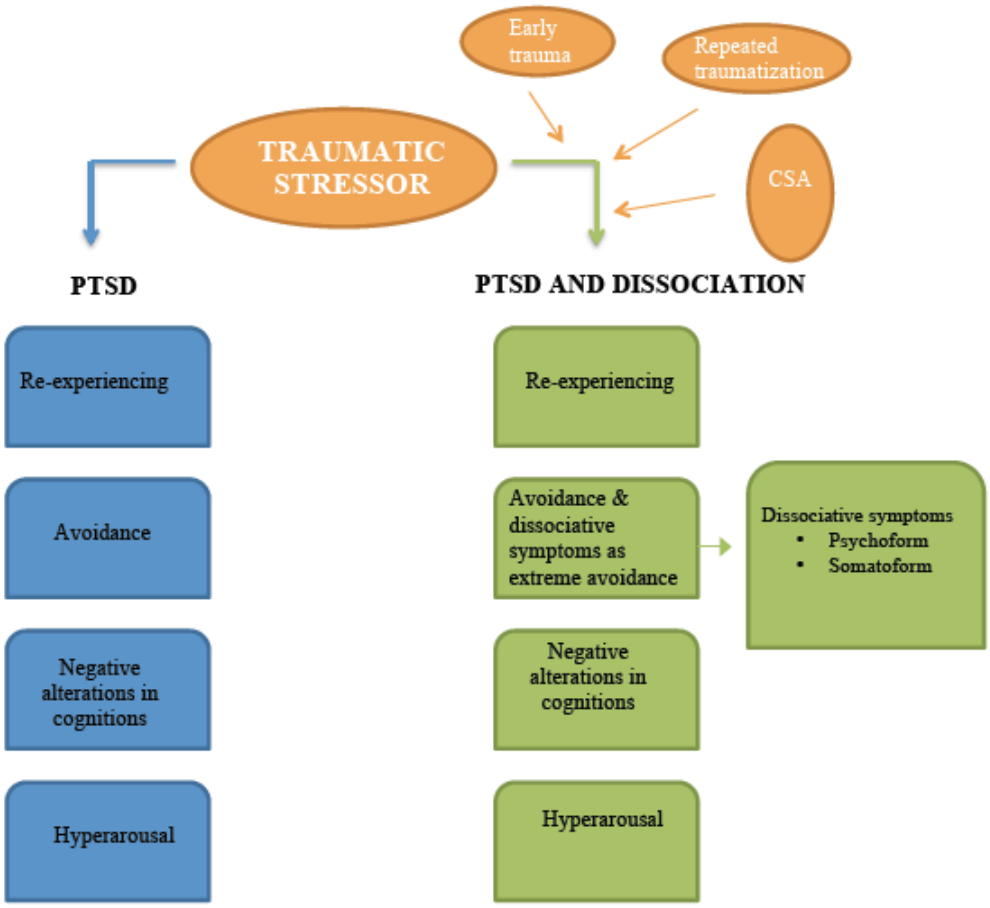
symptoms. This positive correlation supports the assumption of a trauma-dissociation relation, which is in line with the most prevalent understanding of dissociation to date (Dalenberg et al., 2012). Although dissociation is associated with exposure to traumatic events, every individual exposed to trauma does not subsequently develop dissociation. There are some forms of traumas that increase the risk for dissociation and pathological dissociation is often described as a response to overwhelming emotions related associated with traumatic experiences during childhood, including repeated, sexual abuse, neglect or physical abuse (Frewen & Lanius, 2015). According to the structural theory of dissociation, dissociation becomes more complex and extensive in line with the severity and the length of the traumatization (van der Hart et al., 2010). The majority of the sample in the present study reported about one or more traumatic events. As over half of the participants reported about trauma experiences before the age of 18, the high number of multiple, repeated victimization is not unexpected. In line with national studies (Mossige & Stefansen, 2007; Thoresen & Hjelmdal, 2004), it is reasonable to assume that parts of the sample have been exposed to violence or abuse at an early age, which has contributed to their development of psychopathology. This should be interpreted with caution, as the current study does not examine what types of trauma or how many traumas each participant has experienced. The findings of the descriptive analyzes do, however, indicate that the sample has been in risk for developing PTSD and dissociation due to their experiences with early, repeated traumas. Furthermore, the majority of women in the sample support previous research that has shown that women are more likely to develop PTSD than men (Kessler et al., 1995; Lassemo et al., 2017).

Dissociation has been suggested by a number of researchers and trauma therapists as an important moderator of treatment outcomes for PTSD (Halvorsen et al., 2014). Recent research indicates that dissociation does not moderate or predict treatment outcomes for PTSD and that dissociation tends to decrease over time with trauma treatment. There is, however, a tendency that patients with higher dissociative symptoms have high PTSD symptoms before and after trauma treatment. The current study supported this assumption and as presented in Table 5, did the higher dissociative patients report higher symptoms than the lower dissociative patients. Researchers have argued that it is sufficient to extend the length of a regular treatment course for patients with complex symptoms (e.g., Ehlers et al., 2013). In other words, it is assumed that patients with high levels of dissociative symptoms do respond to regular trauma-focused treatments. As presented in the current study, individuals with high dissociative symptoms often have high pathological symptoms. It is therefore not

surprising that research has suggested that these individuals need longer treatment. Their wounds are deeper and take longer to heal. It is, however, promising that the current study in conjunction with previous studies indicates that trauma-focused treatments are effective and acceptable for this patient group as they experience a decrease in intrusive PTSD and comorbid symptoms. Furthermore, due to the present findings of a decrease in PTSD symptoms, it can be argued that the direct exposure to thoughts, feelings or memories of the traumatic event contribute to a reprocessing and integration of memories that the individual normally does not have access to. The individual is challenged to remember the event while the therapist helps the individual to remain in the present and to feel safe during the highly distressing exposure. Consequently, the individual may learn that the threat is over and that the memories themselves are not dangerous which will contribute to a decline in their pathological symptoms.

One possible explanation of why patients with PTSD and dissociative symptoms seem to respond to regular trauma-focused treatments may be that persistent dissociation is an extreme version of the systematic avoidance behavior seen in individuals with "normal" PTSD (see Figure 4). Pathological dissociation has been referred to as a psychological coping mechanism that increases survival both during and after the traumatic experience and is associated with traumatic experiences during childhood. However, if dissociation becomes persistent it may be pathogenic and contribute to the maintenance of PTSD. An assumption is that persistent dissociation would interfere with the necessary cognitive and emotional processing of the traumatic event (Foa & Kozak, 1986; Shalev et al., 1996). Individuals with PTSD often systematically avoid memories and places associated with the traumatic event, as the memories are extremely emotional and painful. In addition to such avoidance behavior, individuals who have dissociative symptoms tend to disconnect as a response to trauma-related memories because the memories are interpreted as extremely overwhelming. Hereby it is argued that persistent dissociation may be understood as an extreme version of avoidance. Dissociation can thus be understood as a consequence of severe trauma exposure.

**FIGURE 4 Dissociation as extreme avoidance behavior**




*Note:* An alternative explanation of dissociative symptoms seen in relation to PTSD.

There is a notable reason to assume that children are vulnerable to severe stressors and that repeated and brutal experiences of danger or death have the potential to exceed a child's cognitive, physical and emotional capacities. If children have their schemas violated repeatedly, there may be a risk that they miss sufficient good experiences for a healthy development. It can be argued that dissociation is a response to severe experiences that have disturbed an individual's normal development. These children will learn that other individuals are dangerous and that the world is a dangerous place. Furthermore, they must defend themselves for potential danger in the future, which could explain why dissociation tends to be more extensive in line with the severity and onset of the trauma.

CT-PTSD and EMDR are based on the assumption that the individual's narratives of the traumatic event are disorganized and unintegrated (e.g., Ehlers & Clark, 2000; Solomon & Shapiro, 2008). It appears that the treatment facilitate reprocessing of the traumatic event and that individuals are able to integrate the painful memories, which they previously have

experienced as overwhelming. As avoidance behavior is considered one of the maintaining factors of PTSD, it can be argued that the earlier the individuals receive trauma-focused treatment, the sooner they learn that they are safe and out of danger. Trauma-focused treatment will thus help the patients to confront their highly distressing memories, which contributes to the maintenance of their suffering. The understanding of dissociation as extreme avoidance behavior supports the critical analysis by De Jongh et al. (2016). The authors argued that the recommended stabilization phased treatment for individuals with complex symptoms is conservation and may cause patients to be prevented or delayed in receiving treatment. However, it should not be ignored that individuals with trauma history and dissociative symptoms often have experienced severe traumas. Their memories can therefore be very emotional and painful. Yet there is the distance between the individuals and the memories that assumed to be what maintain their suffering. The present findings have some implications for current theories on trauma-focused treatment for PTSD.

Due to the proposed explanation of dissociative symptoms, it is argued that Ehlers and Clark's (2000) cognitive model, the Adaptive Information Processing (AIP) model and the proposed version of Complex PTSD in ICD-11 should be extended to include a category of dissociative symptoms as extreme avoidance behavior. Although it is well known that dissociative symptoms are a response to trauma, many clinicians view exposure as a contraindication for patients with comorbid dissociation (van Minnen et al., 2012). A further normalization and focus on dissociative symptoms can therefore possibly increase the theoretically understanding of dissociation as it may contribute to fewer individuals being excluded from further research. This is however a preliminary assumption and further research is needed.

### 5.4.2 Clinical implications

In conjunction with previous findings, the present study has some important implications for clinical practice. Most importantly, PTSD patients with dissociative symptoms seem to improve as a result of CT-PTSD and EMDR treatment. Although dissociative symptoms were found to have a non-significant predictive effect on treatment outcome, higher dissociative symptoms did seem to have a moderate to large effect on treatment outcome. In line with the assumption by Lanius et al. (2012) that individuals with higher dissociative symptoms may respond differently to psychotherapy, it can be argued that the level of dissociative symptoms measured pre-treatment may serve as a clinically useful indicator. These patients may for example need a longer treatment course, as their symptoms tend to be higher when compared to patients with lower levels of pathological dissociation.

The results also highlight the clinical significance of using the DES-B score for identifying a subgroup of patients with a severe clinical profile, implicating more complex cases.

Furthermore, dissociation tends to be associated with severe traumas and especially complex and early traumatization. According to the ICD-11, complex trauma may lead to emotional dysregulation (Giourou et al., 2018). It is therefore reasonable to assume that patients with higher dissociative symptoms do have difficulties in regulating their emotions and that these patients may have strong emotional reactions during trauma-focused treatment. However, the findings support that the therapist can dare to confront the patient's traumatic memories. Therefore, it is proposed that the therapist should establish a therapeutic relationship at the beginning of the treatment course. This may create a safe environment, which facilitates the exploration of traumatic memories. When confronting the traumatic memories, the therapist can use simple grounding exercises to help the patient to remain in the present and hence facilitate integration of the highly distressing memories.

As already alluded to, Signe experienced symptoms of both PTSD and dissociation when she was referred to outpatient treatment. Although she did relatively well for a long time after the abuse, it seems as her defense mechanism became pathogenic and prevented integration of the traumatic experiences. This may have resulted in that the memories are not a part of her personal story and could explain why she experienced difficulty in recalling the events. As Signe continues to avoid the memories it is reasonable to assume that the memories will continue to create strong discomfort and that the unexpected panic attacks will continue. Furthermore, she will continue to be unable to be social, to work and she will experience difficulties in distinguishing between the past and the present.

As mentioned in the example in the introduction, Signe did not experience any changes in her symptoms during the stabilization phase. Due to the proposed understanding of dissociative symptoms as an extreme version of avoidance behavior it can be hypothesized that the stabilization phase may be conservative. Dissociation is understood as a severe consequence of severe traumatization and in line with the present findings, it is reasonable to assume that there is a positive correlation between Signe's symptoms of PTSD and dissociation. It could therefore be argued that a decrease in her PTSD symptoms would contribute to a decrease in her dissociative symptoms. Furthermore, it could be argued that trauma-focused treatment may help Signe to form a coherent narrative, which may reduce her fragmented memory and pathological symptoms. However, it is reasonable to assume that the exposure will be painful and that she would need a longer treatment course because of her history with repeated sexual abuse.

# 6. CONCLUSION AND IMPLICATIONS FOR FURTHER RESEARCH

The present study of a clinical sample of traumatized individuals in outpatient treatment showed that there were statistically significant reductions on several symptom measures following CT-PTSD and EMDR treatment. Although the patients improved during treatment, they were still on, average suffering at post-treatment. A minor subgroup of the patients reported high levels of dissociation and these patients were a more severely symptomatic group than the patients with lower dissociative symptoms. These patients did improve during the outpatient treatment, as did the other patients, but their dissociative symptoms tended to affect the treatment outcome with a moderate to large effect. Dissociation was not found to be a significant predictor of treatment outcome, but the findings indicate that the level of dissociative symptoms at pre-treatment is associated with treatment effect. Traumatized patients with pathological dissociation may need treatment that is in part different from standard protocol treatment. Although the findings indicate that both low and high levels of pathological dissociation may affect the treatment outcome, the higher levels of dissociative symptomatology indicate a greater predictive effect of treatment outcome. Furthermore, it has been proposed that dissociation may be understood as an extreme version of avoidance behavior seen in "normal" PTSD and it has been proposed that patients therefore tolerate exposure to traumatic memories.

The non-significant, but strong effect between dissociative symptoms and treatment outcome in the minor subgroup of patients with higher dissociative symptoms suggest that further research should investigate individuals with higher dissociative symptoms. Further studies should include measures of dissociation at pre-treatment, post-treatment and at a follow-up in addition to expanding the duration of standard protocol treatments. As some studies have found higher dissociative symptoms to predict nonresponse for trauma-focused treatments, it is argued that this group of individuals should be investigated in longitudinally studies. This may provide further insight in the development and change for these patients over time and could provide more information about what dissociation really is and how severely damaged early and traumatized individuals are.

It seems that CT-PTSD and EMDR are effective and acceptable for patients with complex trauma histories and associated dissociative symptoms. The decrease in all measures of pathological symptoms may indicate that the treatment is not an additional burden for the patients. Furthermore, there were no significant group differences between treatment outcomes of the two methods, which supports the inclusion of these two treatment methods in a further national implementation in Norway. Conclusively, the present findings indicate that

dissociation may be a clinical issue, which should not be overlooked and not feared. Emotions have a communicative function and may signal that the individual is in great need of help to find and organize the traumatic memories. The dissociative symptoms can block out stress experiences but persistent disconnection will continue to prevent the necessary integration of the memories.

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# APPENDIX: Measures

## Depression and anxiety: PHQ-9 and GAD-7

NORSK FORENING FOR KOGNITIV TERAPI

### PHQ-9

Navn: ..... Dato: .....

***Hvor ofte har du vært plaget av ett eller flere av de følgende problemene i løpet av de siste to ukene.***

**0** Ikke i det hele tatt | **1** Noen dager | **2** Mer enn halvparten av dagene | **3** Nesten hver dag

| | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| 1. Liten interesse for eller glede av å gjøre ting | | | | |
| 2. Følt deg nedfor, deprimert eller fylt av håpløshet | | | | |
| 3. Vansker med å sovne, sove uten avbrudd eller sovet for mye | | | | |
| 4. Følt deg trett eller energiløs | | | | |
| 5. Dårlig matlyst eller å spise for mye | | | | |
| 6. Vært misfornøyd med deg selv eller følt deg mislykket, eller følt at du har sviktet deg selv eller familien din | | | | |
| 7. Vansker med å konsentrere deg om ting, slik som å lese avisen eller se på tv | | | | |
| 8. Beveget deg eller snakket så langsomt at andre kan ha merket det? Eller motsatt – følt deg så urolig eller rastløs at du har beveget deg mye mer enn vanlig | | | | |
| 9. Tanker om at det ville vært bedre om du var død eller om å skade deg selv | | | | |

Hvis du har opplevd ett eller flere av de problemene som nevnes, i hvor stor grad har problemene gjort det vanskelig for deg å utføre arbeidet ditt, ordne med ting hjemme eller å komme overens med andre?

Ikke vanskelig i det hele tatt | Litt vanskelig | Svært vanskelig | Ekstremt vanskelig

SKRIV UT | NULLSTILL

Utviklet av Dr. Robert L Spitzer.
Oversatt til norsk av Sverre Urnes Johnson, Asle Hoffart, Pål Ulvenes, Harold Sexton & Bruce E. Wampold.

NORSK FORENING FOR KOGNITIV TERAPI

# GAD-7

Navn: ..... Dato: .....

***Hvor ofte har du vært plaget av de følgende problemene i løpet av de siste to ukene.***

| **0** | **1** | **2** | **3** |
|---|---|---|---|
| Ikke i det hele tatt | Noen dager | Mer enn halvparten av dagene | Nesten hver dag |

| | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| 1. Følt deg nervøs, engstelig eller på tuppa | | | | |
| 2. Ikke klart å stoppe eller kontrollere bekymringene dine | | | | |
| 3. Bekymret deg for mye om ulike ting | | | | |
| 4. Hatt vansker med å slappe av | | | | |
| 5. Vært så rastløs at det har vært vanskelig å sitte stille | | | | |
| 6. Blitt lett irritert eller ergret deg over ting | | | | |
| 7. Følt deg redd som om noe forferdelig kunne komme til å skje | | | | |

Hvis du har opplevd ett eller flere av de problemene som nevnes, i hvor stor grad har problemene gjort det vanskelig for deg å utføre arbeidet ditt, ordne med ting hjemme eller å komme overens med andre?

| Ikke vanskelig i det hele tatt | Litt vanskelig | Svært vanskelig | Ekstremt vanskelig |
|---|---|---|---|

SKRIV UT NULLSTILL

Kilde: Spitzer RL, Kroenke K, Williams JBW, Lowe B. A brief measure for assessing generalized anxiety disorder. Arch Inern Med. 2006; 166: 1092-1097.
Oversatt til norsk av Sverre Urnes Johnson, Asle Hoffart, Pål Ulvenes, Harold Sexton & Bruce E. Wampold.

# PTSD: PCL-5

## PCL-5

**Instruksjon: Nedenfor finner du en liste over problemer som personer noen ganger kan ha som reaksjon på en svært belastende opplevelse. Vær vennlig å les grundig gjennom hvert spørsmål og sett en sirkel rundt ett av tallene til høyre for å angi hvor mye du har vært plaget i løpet av den siste måneden.**

| *Hvor mye har du den siste måneden vært plaget av følgende:* | *Slett ikke* | *Ganske lite* | *Moderat* | *Ganske mye* | *Svært mye* |
|---|---|---|---|---|---|
| 1. Gjentatte, forstyrrende og uønskede minner om den belastende opplevelsen? | 0 | 1 | 2 | 3 | 4 |
| 2. Gjentatte og forstyrrende drømmer om den belastende opplevelsen? | 0 | 1 | 2 | 3 | 4 |
| 3. At du plutselig føler eller handler som om den belastende hendelsen faktisk skjedde igjen (*som om du faktisk var tilbake og gjenopplevde den*)? | 0 | 1 | 2 | 3 | 4 |
| 4. Føler deg veldig opprørt når noe minner deg om den belastende opplevelsen. | 0 | 1 | 2 | 3 | 4 |
| 5. Sterke fysiske reaksjoner når noe minner deg om den belastende opplevelsen *(f.eks. hjertebank, åndenød, svetting)*? | 0 | 1 | 2 | 3 | 4 |
| 6. Unngår minner, tanker eller følelser forbundet med den belastende opplevelsen? | 0 | 1 | 2 | 3 | 4 |
| 7. Unngår forhold som minner om den belastende opplevelsen *(f.eks. personer, steder, samtaler, aktiviteter, objekter eller situasjoner)*? | 0 | 1 | 2 | 3 | 4 |
| 8. Problemer med å huske viktige deler av den belastende opplevelsen? | 0 | 1 | 2 | 3 | 4 |
| 9. Sterke negative oppfatninger om deg selv, andre mennesker eller verden *(f.eks. tanker som: Jeg er et dårlig menneske, det er noe alvorlig galt med meg, ingen er til å stole på, verden er gjennomgående farlig)*? | 0 | 1 | 2 | 3 | 4 |
| 10. Klandrer deg selv eller noen andre for hendelsen eller det som skjedde etter hendelsen? | 0 | 1 | 2 | 3 | 4 |
| 11. Sterke negative følelser som frykt, skrekk, sinne, skyld eller skam? | 0 | 1 | 2 | 3 | 4 |
| 12. Tap av interesse for aktiviteter som du pleide å like? | 0 | 1 | 2 | 3 | 4 |
| 13. Føler deg fjern eller avskåret fra andre mennesker? | 0 | 1 | 2 | 3 | 4 |
| 14. Problemer med å ha positive følelser *(f.eks. ute av stand til å føle glede eller ha varme følelser for mennesker som står deg nær)*? | 0 | 1 | 2 | 3 | 4 |
| 15. Irritabel oppførsel, sinneutbrudd eller aggressivitet? | 0 | 1 | 2 | 3 | 4 |
| 16. Tar for mange sjanser eller gjør ting som kan skade deg? | 0 | 1 | 2 | 3 | 4 |
| 17. Er overdrevent oppmerksom, skjerpet eller på vakt? | 0 | 1 | 2 | 3 | 4 |
| 18. Følelsen av å være skvetten eller lettskremt? | 0 | 1 | 2 | 3 | 4 |
| 19. Vanskeligheter med å konsentrere deg? | 0 | 1 | 2 | 3 | 4 |
| 20. Vanskeligheter med å falle i søvn eller sove uavbrutt? | 0 | 1 | 2 | 3 | 4 |

PCL-5 (10/3/2013) Weathers, Litz, Keane, Palmieri, Marx, & Schnurr - National Center for PTSD
Norwegian version (9/4/2014) Heir - Norwegian Centre for Violence and Traumatic Stress Studies.
Approved by Weathers et al, April 2014.

# Dissociation: DES-B and SDQ-20

## Severity of Dissociative Symptoms—Adult*

***Brief Dissociative Experiences Scale (DES-B)—Modified**

**Name:**_____ **Age:** _____ **Sex: Male** ❑ **Female** ❑ **Date:**_____

**Instructions:** For each statement below, please check (✓) the box that best answers each question to show how much each thing has happened to you in the past SEVEN (7) DAYS.

| | | | | | | | **Clinician Use** |
|---|---|---|---|---|---|---|---|
| | | Not at all | Once or twice | Almost every day | About once a day | More than once a day | **Item score** |
| 1. | I find myself staring into space and thinking of nothing. | ❑ 0 | ❑ 1 | ❑ 2 | ❑ 3 | ❑ 4 | |
| 2. | People, objects, or the world around me seem strange or unreal. | ❑ 0 | ❑ 1 | ❑ 2 | ❑ 3 | ❑ 4 | |
| 3. | I find that I did things that I do not remember doing. | ❑ 0 | ❑ 1 | ❑ 2 | ❑ 3 | ❑ 4 | |
| 4. | When I am alone, I talk out loud to myself. | ❑ 0 | ❑ 1 | ❑ 2 | ❑ 3 | ❑ 4 | |
| 5. | I feel as though I were looking at the world through a fog so that people and things seem far away or unclear. | ❑ 0 | ❑ 1 | ❑ 2 | ❑ 3 | ❑ 4 | |
| 6. | I am able to ignore pain. | ❑ 0 | ❑ 1 | ❑ 2 | ❑ 3 | ❑ 4 | |
| 7. | I act so differently from one situation to another that it is almost as if I were two different people. | ❑ 0 | ❑ 1 | ❑ 2 | ❑ 3 | ❑ 4 | |
| 8. | I can do things very easily that would usually be hard for me. | ❑ 0 | ❑ 1 | ❑ 2 | ❑ 3 | ❑ 4 | |
| | | | | | | **Total/Partial Raw Score:** | |
| | | | | | | **Prorated Total Raw Score: (if 1-2 items left unanswered)** | |
| | | | | | | **Average Total Score:** | |

DES-B (Dalenberg C, Carlson E, 2010) modified for DSM-5 by C. Dalenberg and E. Carlson.

**Instructions to Clinicians**

The Brief Dissociative Experiences Scale (DES-B)—Modified is an 8-item measure that assesses the severity of dissociative experiences in individuals age 18 and older. The measure is to be completed by the individual upon receiving a diagnosis of a dissociative disorder (or clinically significant dissociative symptoms) and thereafter, prior to follow-up visits with the clinician. Each item asks the individual receiving care to rate the severity of his or her dissociative experiences **during the past 7 days**.

**Scoring and Interpretation**

Each item on the measure is rated on a 5-point scale (0=Not at all; 1=Once or twice; 2=Almost every day; 3=About once a day, and 4=More than once a day). The total score can range from 0 to 32, with higher scores indicating greater severity of dissociative experiences. The clinician is asked to review the score of each item on the measure during the clinical interview and confirm the individual's score for each item. The scores on the 8 items should be summed to obtain a total raw score. In addition, the clinician is asked to calculate and use the **average total score**. The average total score is calculated by dividing the raw total score by number of items in the measure (i.e., 8). It reduces the overall score to a 5-point scale, which allows the clinician to think of the severity of the individual's dissociative experiences in terms of none (0), mild (1), moderate (2), severe (3), or extreme (4). The use of the average total score was found to be reliable, easy to use, and clinically useful to the clinicians in the DSM-5 Field Trials.

**Note:** If 3 or more items are left unanswered, the total score on the measure should not be calculated. Therefore, the individual should be encouraged to complete all of the items on the measure. If 1 or 2 items are left unanswered, you are asked to calculate a prorated score. The prorated score is calculated by summing the scores of items that were answered to get a **partial raw score**. Multiply the partial raw score by the total number of items on the DES-B (i.e., 8) and divide the value by the number of items that were actually answered (i.e., either 6 or 7). The formula to prorate the partial raw score to Total Raw Score is:

$$\frac{\text{(Raw sum x 8)}}{\text{Number of items that were actually answered}}$$

If the result is a fraction, round to the nearest whole number.

**Frequency of Use**

To track changes in the severity of the individual's brief dissociative experiences over time, the measure may be completed at regular intervals as clinically indicated, depending on the stability of the individual's symptoms and treatment status. Consistently high scores on a particular domain may indicate significant and problematic areas for the individual that might warrant further assessment, treatment, and follow-up. Your clinical judgment should guide your decision.

# S.D.Q. – 20

Dette spørreskjemaet dreier seg om ulike fysiske symptomer eller kroppslige erfaringer som du kan ha hatt enten kortvarig eller over lengre tid.
Vær vennlig å markere i hvilken grad disse opplevelsene har vært relevante for deg **det siste året.**

For hver enkelt uttalelse vennligst sirkle inn det tallet som passer best for DEG.
De ulike svaralternativene er:

1 = Dette gjelder IKKE for meg I DET HELE TATT
2 = Dette gjelder for meg TIL EN VISS GRAD
3 = Dette gjelder for meg I MODERAT GRAD
4 = Dette gjelder for meg I STOR GRAD
5 = Dette gjelder for meg I SVÆRT STOR GRAD

Hvis et symptom eller erfaring gjelder for deg, vennligst markér om en **lege** har knyttet det til en **fysisk sykdom**.
Markér dette ved å sette en ring rundt ordet JA eller NEI i kolonnen "Er den fysiske årsaken kjent?" Hvis du skrev JA, vær vennlig å skrive ned den fysiske årsaken (hvis du kjenner til den) på linjen.

Eksempel:

| | I hvilken grad gjelder symptomet eller erfaringen for deg? | Er den fysiske årsaken kjent? | |
|---|---|---|---|
| Det hender at tennene mine klaprer | 1 2 3 4 5 | NEI | JA, hvilken…….. |
| Det hender jeg har kramper i leggene mine | 1 2 3 4 5 | NEI | JA, hvilken ……. |

Hvis du har sirklet inn 1 i første kolonne ("Dette gjelder IKKE for meg I DET HELE TATT"), trenger du IKKE svare på spørsmålet om den fysiske årsaken er kjent.

Dersom du derimot har sirklet inn 2, 3, 4 eller 5 MÅ du sirkle inn NEI eller JA i kolonnen for " Er den fysiske årsaken kjent?"

Vær vennlig å svare på alle de 20 spørsmålene.
Takk for samarbeidet.



1

Her er spørsmålene:

1 = Dette gjelder IKKE for meg I DET HELE TATT
2 = Dette gjelder for meg TIL EN VISS GRAD
3 = Dette gjelder for meg I MODERAT GRAD
4 = Dette gjelder for meg I STOR GRAD
5 = Dette gjelder for meg I SVÆRT STOR GRAD

| | I hvilken grad gjelder symptomet eller erfaringen for deg? | Er den fysiske årsaken kjent? | |
|---|---|---|---|
| Det hender at: | | | |
| 1. Jeg har problemer med å late vannet | 1 2 3 4 5 | Nei | Ja, hvilken …….. |
| 2. Jeg misliker smaker som jeg vanligvis liker (for kvinner: UTENOM graviditet eller menstruasjonsperioder) | 1 2 3 4 5 | Nei | Ja, hvilken …….. |
| 3. Jeg hører lyder i nærheten av meg som om de kommer langt borte fra | 1 2 3 4 5 | Nei | Ja, hvilken ……. |
| 4. Jeg har smerter når jeg later vannet | 1 2 3 4 5 | Nei | Ja, hvilken ……. |
| 5. Kroppen min, eller deler av den, føles nummen | 1 2 3 4 5 | Nei | Ja, hvilken ……. |
| 6. Mennesker og ting ser større ut enn vanlig | 1 2 3 4 5 | Nei | Ja, hvilken ……. |
| 7. Jeg har et anfall som ligner et epileptisk anfall | 1 2 3 4 5 | Nei | Ja, hvilken ……. |
| 8. Kroppen min, eller en del av den, kjenner ikke smerte | 1 2 3 4 5 | Nei | Ja, hvilken ……. |
| 9. Jeg misliker lukter som jeg vanligvis liker | 1 2 3 4 5 | Nei | Ja, hvilken ……. |
| 10. Jeg har smerter i underlivet (på tidspunkter UTENOM samleie) | 1 2 3 4 5 | Nei | Ja, hvilken ……. |

| | I hvilken grad gjelder symptomet eller erfaringen for deg? | Er den fysiske årsaken kjent? | |
|---|---|---|---|
| Det hender at: | | | |
| 11. Jeg kan ikke høre i perioder (som om jeg er døv) | 1 2 3 4 5 | Nei | Ja, hvilken …… |
| 12. Jeg kan ikke se i perioder (som om jeg er blind) | 1 2 3 4 5 | Nei | Ja, hvilken …… |
| 13. Jeg ser ting rundt meg på en annen måte enn vanlig (for eksempel som om jeg ser gjennom en tunnel eller at jeg bare ser en del av en ting) | 1 2 3 4 5 | Nei | Ja, hvilken …… |
| 14. Luktesansen min er mye BEDRE eller VERRE enn vanlig (selv om jeg ikke er forkjølet) | 1 2 3 4 5 | Nei | Ja, hvilken …… |
| 15. Det er som om kroppen min, eller en del av den, er forsvunnet | 1 2 3 4 5 | Nei | Ja, hvilken …… |
| 16. Jeg klarer ikke svelge, eller klarer bare svelge med stor anstrengelse | 1 2 3 4 5 | Nei | Ja, hvilken …… |
| 17. Jeg klarer ikke å sove på flere netter, men er fortsatt svært aktiv på dagtid | 1 2 3 4 5 | Nei | Ja, hvilken …… |
| 18. Jeg klarer ikke å snakke (eller bare med stor anstrengelse), eller jeg kan bare hviske | 1 2 3 4 5 | Nei | Ja, hvilken …… |
| 19. Jeg er lammet i perioder | 1 2 3 4 5 | Nei | Ja, hvilken …… |
| 20. Jeg stivner til i perioder | 1 2 3 4 5 | Nei | Ja, hvilken …… |

**Før du fortsetter, vennligst kontroller at du har svart på alle 20 spørsmålene.**

Fyll ut og kryss av nedenfor, der det passer for deg:

21. Alder: ……. år

22. Kjønn: ……. kvinne

……. mann

23. Sivilstand: ……. enslig

……. gift

……. samboer

……. skilt

……. enkemann/enke

24. Utdannelse: ……. antall år

25. Dato: …….

26. Underskrift: ……