



A study investigating the relationship between psychological distress and dissociative experiences

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### **Abstract**

Individuals suffering from dissociative disorders have been found to also have high levels of psychological distress in the form of depression, anxiety and stress. Non-clinical levels of dissociation have also been found to be related to depression, anxiety and stress yet to a lesser extent. There are a number of scales that have been deemed appropriate for testing psychological distress and dissociative experiences, therefore, the present study investigated the impact depression, anxiety and stress has on dissociative experiences using two of these scales, the Depression, Anxiety, Stress Scale (DASS) and the Dissociative Experiences Scale (DES). 135 students between the age of 18 and 26 from a University in North Yorkshire firstly provided demographic details such as their age, gender, university course and year of study and then went on to complete the DASS and the DES. The results showed that depression and anxiety significantly predicted the experiences of dissociation yet stress did not predict dissociative experiences. However, analysis of the participants according to whether they scored above or below the DES proposed cut-off point for risk of dissociative disorders, illustrated that those who scored above the cut-off value were significantly more depressed, anxious *and* stressed than those who scored below it. These findings support previous research that suggests depression, anxiety and stress are significantly related to high levels of dissociative experiences and supports research that suggests depression and anxiety is related to dissociative experiences in general however, the findings oppose research that suggests stress is significantly related to dissociative experiences at all levels. Suggestions for practical applications of these findings are stated and recommendations for future research are defined.

<b>Key Words</b>	<b>Depression</b>	<b>Anxiety</b>	<b>Stress</b>	<b>Dissociation</b>
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## Introduction

The topic of dissociation within Psychology has received a gradual increase in attention over the years both within clinical samples and the general population (Gleaves *et al.*, 1995). Dissociation has been linked with specific psychological disorders (Michelson & Ray, 1996) as well as types of psychological distress (Chiu *et al.*, 2009). Psychological distress in relation to dissociative experiences has been investigated both as non-clinical psychological states and as a manifest of psychological disorders.

A number of definitions for dissociation have been offered by researchers (Braude, as cited in Collins, 2004; Janet, as cited in Nemiah, 1991; Kihlstrom *et al.*, 1994; Michelson & Ray, 1996). While they might differ in the details, what is common to all definitions is their references to the lack of usually expected connections between mental content (Collins, 2004). Janet introduced his theory of dissociation more than a hundred years ago however it received little attention from researchers as Freud's rival theory of repression somewhat over shadowed it (as cited in Nemiah, 1991). Janet described mental processes as consisting of a large number of content-specific elementary structures called psychological automatisms which combine perception and action. A particular automatism during periods of stress in those predisposed to dissociative tendencies (due to a psychological weakness to bind their automatisms together), may be split off from the rest continuing to function but isolated from conscious awareness (as cited by Kihlstrom *et al.*, 1994). Kihlstrom and Hoyte (1990) stated that Janet considered repression as a special case of dissociation, referring to instances where consciousness disruption is motivated by defence mechanisms. However Erdelyi (1990) highlighted that Freud viewed dissociation as trivial and stated that repression is a motivated act to avoid an unbearably distressing memory or impulse. Spiegel (1990) suggested different defences (dissociation) are mobilised by trauma rather than by long-standing conflicts and warded off wishes (repression). Nevertheless Kihlstrom and Hoyte (1990) stated that both processes deny certain mental contents to phenomenal

awareness and voluntary control and assume the existence of a psychological unconscious that could exert a palpable impact on ongoing experiences and actions.

The *Diagnostic and Statistical Manual of Mental Disorders, Text Revision* (DSM-IV-TR) (American Psychiatric Association; APA, 2000) describes dissociation as a disruption in the usually integrated functions of consciousness, memory, identity or perception of the environment and the disturbance may be sudden or gradual, transient or chronic. Kihlstrom *et al.* (1994) explain dissociation as manifesting in specific tendencies such as short term or long term amnesia, absorption in tasks, depersonalisation and derealisation, an existence of sub-personalities and/or forms of trance experiences. Farrington *et al.* (2001) describe amnesia as referring to the inability to recall a significant segment of time, absorption refers to the ability to be lost in the task at hand, depersonalisation refers to a sense of detachment from the body or self, and derealisation refers to a sense that your surrounding are unreal. Waller *et al.* (1996) found evidence for two types of dissociation; extreme forms of amnesia, depersonalisation and derealisation indicated pathological dissociation whereas absorption identified non-pathological dissociation. Pathological dissociation may therefore be described as a more serious form of dissociation as opposed to non-pathological dissociation. According to Lynn and Rhue (1994) pathological dissociation is dysfunctional and may lead to psychiatric disorders however non-pathological dissociation such as absorption may act as an adaptive coping mechanism. Spitzer *et al.* (2006) stated that approaches to divide dissociation in terms of pathological and non-pathological dissociation have attempted to refine conceptual confusions regarding dissociation however the scientific and clinical value of these dissociation divisions remain to be proven.

Braude posits four basic assumptions that identify dissociation in its normal and pathological forms. Firstly dissociation is a state of being that all humans have the capacity to be in just as they have the capacity to be happy, anxious or confused. Second, dissociation may be expressed in different ways from one person to the next and dissociative expressions may be adaptive or maladaptive, mild or extreme. Thirdly, individuals in a state of dissociative experience perceive and register stimuli but the perception is not experienced consciously. Finally, dissociated perceptions, information, feelings and thought still exist but they are separated from conscious awareness therefore they may become accessible at a later date (as cited in Collins, 2004).

Michelson and Ray (1996) state that dissociative states can occur in everyone's lives in the form of forgetfulness, absentmindedness or absorption in a film or book. Other dissociative processes may be rare and found only in psychopathological states (Michelson & Ray, 1996), therefore dissociative processes manifest along a continuum of severity involving alterations in memory and identity that have important roles in normal and pathologic mental processes that in extreme cases give rise to dissociative disorders (Putnam, 1991). As a result, dissociative disorder is not characterised by specific symptoms but rather by the extent or intensity of dissociative symptoms displayed (Kihlstrom *et al.*, 1994). Furthermore definitions of dissociation also differ according to whether trait dissociation or state dissociation is being discussed. Collins (2004) describes trait dissociation as a common personality feature which is expressed in greater or lesser degrees in each individual. On the other hand, Collins describes state dissociation as an episodic phenomenon that is time limited and presumably situationally triggered.

However the extent to which an individual may dissociate is also dependent on demographical factors. Previous research has not found any gender differences in rates of dissociative experiences (Bauer & Power, 1995; Berstein & Putnam, 1986; Ross *et al.*, 1989) however there is a collection of evidence that suggests occurrence levels of dissociation declines with age (Bauer & Power, 1995; Gleaves *et al.*, 1995; Ross *et al.*, 1989; Vanderlinden *et al.*, 1995). However, Bauer and Power (1995) found that while older participants obtained lower dissociation scores, younger participants achieved a wide range of scores.

Carlson and Putnam (1993) explain that younger people may score higher in dissociative experience questionnaires because they are more prone or willing to report dissociative experiences or because they are more likely to interpret their experiences as matching those described in questions relating to dissociative experiences and this potentially inflates the rates of dissociation in young samples. Another suggestion for dissociative experience being less common with advancing age is found in the fact that hypnotisability also declines with age as hypnosis is closely related with dissociation (Ross *et al.*, 1989). Janet first proposed the concept that unconscious and dissociated thoughts were accessible through hypnosis (as cited in Price, 1987) and Spiegel (1990) explained that hypnosis is controlled dissociation elicited in a structured setting and composes in addition of dissociation, absorption and suggestibility. Furthermore according to Spiegel, dissociation can be conceptualised as a complementary aspect of absorption and individuals intensely involved in one thing, pay less attention to other events just as a hypnotised individual focuses on one perception at the expense of peripheral awareness. However, some question whether hypnosis is a real phenomenon therefore they may disregard a link between dissociation and hypnosis. For example, Bourgeois (1997) question whether hypnosis is an illusion as there is no physical parameter that provides proof or allows it to be objectified.

Additionally, the extent to which a person may dissociate is also dependent on personality factors and dissociative experiences have been found to relate to the Five Factor Model of personality traits which consists of Neuroticism, Openness to Experience, Extraversion, Agreeableness and Conscientiousness. Ruiz *et al.* (as cited in Kwapil *et al.*, 2002) found that the occurrence rate of dissociative experience was positively related to Neuroticism, Openness to Experience, and inversely related to Extraversion, Agreeableness and Conscientiousness. According to this and referring to Costa and McCrae (1992), those who dissociate frequently are likely to be associated with emotional maladjustment (high Neuroticism), imagination, curiosity and introspection (high Openness to Experience), anti-social behaviour and independence (low Extraverticism), scepticism, competitiveness and callousness (low Agreeableness) and irresponsibility, disorganisation and pleasure-seeking behaviours (low Conscientiousness). Furthermore, Simeon *et al.* (2002) has found that several personality factors are associated with dissociation such as harm-avoidant temperaments, immature defences, over-connection and disconnection of cognitive schemas.

### **Dissociation and Related Disorders**

Dissociation has received considerable theoretical and clinical attention in recent years due to research into what is formally known as multiple personality disorder (defined as dissociative identity disorder (DID) in the DSM-IV-TR (APA, 2000)) and

post-traumatic stress disorder (PTSD) (Michelson & Ray, 1996). Furthermore Michelson and Ray highlight that the scientific study of dissociation is also regaining importance for the role played by dissociation processes in psychopathology as well as its potential value in understanding normal states of cognitive emotional processing and underlying brain state relationships.

The nature of traumatic memories has been a controversial issue in Psychiatry for over a century (Van der Kolk & Fisler, 1995), and more recent times have witnessed an intense resurgence of interest in the study of trauma and dissociation (Marmar *et al.*, 1998). Spiegel (1990) describes trauma as the experience of being made into an object as the victim of someone else's rage or due to one's own physical or psychological limitations or natures indifferences. Spiegel states that the victim faces pain, fear and/or humiliation with a marginally bearable sense of helplessness that leaves the individual with a damaged or fragmented view of the self. Cases of repeated or chronic trauma where no potential for help or escape is perceived, high rates of pathological dissociative reactions often develop (Soukup *et al.*, 2010). Additionally, Herman (1992) states that people in captivity become adept practitioners of the arts of altered consciousness in the form of dissociation, thought suppression and denial and this occurs as defence mechanisms that attempts to alter unbearable realities. Also Herman highlights that survivors of prolonged childhood abuse develop dissociative capacities to the extreme. Soukup *et al.* (2010) found evidence to support this as they found that abused adolescents had almost double the dissociative scores of those with no reported abuse.

Van der Kolk and Fisler (1995) state that those who have learned to cope with trauma through dissociating frequently are vulnerable to continue to do so in response to minor stress which interferes with the capacity to fully attend to life's ongoing challenges. Van der Kolk and Fisler claim that while dissociation may temporarily serve an adaptive function as a defence mechanism, in the long run; avoiding traumatic memories seems to be a critical element that leads to PTSD.

According to the DSM-IV-TR (APA, 2000), PTSD involves a response to a trauma of intense fear, helplessness or horror which results in persistent re-experiencing of the traumatic event, persistent avoidance of stimuli associated with the trauma, a numbing of general responsiveness and persistent increased arousal. Spiegel (1990) describes PTSD as often comprising of a polarisation of consciousness, a loss of pleasure in usually enjoyable activities and intrusive recollections of the event.

Given the proposed connection between trauma and dissociation (Herman, 1992; Soukup *et al.*, 2010; Van der Kolk & Fisler, 1995), the most extreme form of pathologic dissociation; DID, can be understood as a chronic form of PTSD (Spiegel, 1990). DID (formally known as multiple personality disorder) re-emerged as a topic of interest within mental health in the early 1970s (Price, 1987) and recent empirical studies have supported a strong relationship among trauma (especially childhood trauma), dissociation and personality disturbances (Marmar *et al.*, 1998).

The DSM-IV-TR (APA, 2000) identifies DID as being characterised by the presence of two or more fragmented and distinct identities or personality states that recurrently take control of an individual's behaviour accompanied by an inability to recall important personal information that is too extensive to be explained by ordinary forgetfulness.

Kluft proposed a four-factor theory of multiple personalities that theorises that to develop DID an individual must have 1) a biological ability to dissociate, 2) face overwhelming life experiences in childhood that result in utilising dissociative abilities as a defence which, 3) becomes linked to the formation of a split-off self structure, that 4) becomes persistent due to a lack of healing nurturance from significant others before the dissociated part of the self becomes fixated (as cited by Price, 1987). Dissociative processes underlying DID continue to serve a defensive function for individuals who have neither the external nor internal resources to cope with traumatic experiences (Kluft, as cited in Marmar *et al.*, 1998). Spiegel (1990) may be seen to support these assumptions in emphasising the growing recognition that patients with DID have often been victims of severe physical child abuse in which instances their dissociative capacities were spontaneously activated to help them cope psychologically with the repeated assaults that they endured. Putnam *et al.* (as cited in Sandberg & Lynn, 1992) found that 97% of a sample of DID cases reported experiencing significant trauma in childhood. Lilienfeld *et al.* (1999) highlighted however, that the relationship between childhood trauma and psychopathology is only pronounced in magnitude when the trauma is severe, repeated or both. Lilienfeld *et al.* highlight an alternative explanation of DID, the social-cognitive model that refers to DID as a syndrome that consists of rule-governed and goal directed experiences and displays of multiple role enactments that have been created, legitimised and maintained by social reinforcement. In other words, DID has been created by therapists with the acceptance of their patients that are influenced by societal models of DID (McHugh, 2009). Although current evidence cannot be dismissed, further research is required to clarify the methodologically complex proposition of a relationship between DID and childhood trauma (Lilienfeld *et al.*, 1999). Furthermore, there are opposing views about the origins of DID and some dismiss that it lies in childhood trauma. For example, only a small percentage of psychiatrists believe there is strong evidence for the scientific validity of DID (Gharaibeh, 2009) and Piper and Merskey's literature review found no proof that DID results from childhood trauma (as cited in Gharaibeh, 2009). Research can only conclude that the majority of DID patients seem to have experienced childhood trauma and explanations for the small percentage of DID patients who have not experienced childhood trauma are largely ignored.

Numerous patients with DID respond in a distinctive way to a standard hypnotic induction procedure (Spiegel, 1990) and the connections between clinical dissociation and hypnosis have been observed for over a century (Putnam, 1991). As previously mentioned, hypnosis is strongly linked to dissociation (Ross *et al.*, 1989) and thus it is also linked to DID due to the manifestation of dissociation in DID. Hypnosis is often used to help treat patients with DID to provide access to hidden traumatic memories and to unify multiple personalities (MacGregor, 1996). It is also possible that chronic PTSD results in changes in level of hypnotisability (Marmar *et al.*, 1998) therefore suggesting a relationship between dissociation and hypnosis due to the manifestation of dissociation in PTSD.

### **Dissociation and Psychological Distress**

Although the relationships between dissociation and trauma, PTSD and DID have been heavily researched it is much less the case for non-clinical dissociation and other non-clinical forms of psychological distress. The relationship between dissociation and psychological conditions of depression, anxiety and stress may be

visible through looking at the symptoms of DID and PTSD however the relationship between dissociation and these psychological states in the absence of such pathological disorders have been researched to a much lesser extent.

Leonard *et al.* (1999) states that dissociation manages to surface not only through several pathological states, both psychological and physiological but also through normal experience. Chiu *et al.* (2009) claims that negative emotions can be a catalyst for the manifestation for the information processing style of those who are highly dissociative and the enhanced ability to disengage attention under negative emotion can be an advantage in coping with stressful events. Researchers have found correlational relationships between dissociation and depression in the general public (eg. Leonard *et al.*, 1999; Maaranen *et al.*, 2005).

Depression refers to a wide range of mental health problems characterised by the absence of positive affect (loss of interest and enjoyment in ordinary things and experiences), low mood and a range of associated emotional, cognitive, physical and behavioural symptoms (The National Institute for Health and Clinical Excellence; NICE; 2011). Bob *et al.* (2005) found a close relationship between depression and dissociative disorders in a sample of depressed individuals and the individuals who illustrated this relationship also had significantly higher traumatisation and subjectively experienced stress. Therefore this close relationship between dissociative behaviour, traumatic stress and depression suggests an important role of dissociative processes in depression. Katon *et al.* (1982) states that frequent dissociation points to a whole range of coping mechanisms in which affect is separated from consciousness, cognition or behaviour or the specific stimuli provoking it, therefore this explanation may help describe why high rates of dissociation are often present in depressive individuals as they attempt to avoid their negative emotions. Further explanations of the relationship between depression and dissociation may be found in neuropsychological functioning. As deficits in neuropsychological functioning have been found in depression (Rogers *et al.*, as cited in Giesbrecht *et al.*, 2008) and as symptoms of neurological conditions like temporal lobe epilepsy resemble dissociative symptoms (Sivec & Lynn, as cited in Giesbrecht *et al.*, 2008), it is tempting to speculate whether a chronic state of dissociation hampers stimulus processing and consequently neuropsychological functioning (Giesbrecht *et al.*, 2008).

Alternatively, investigative researchers such as Leonard *et al.* (1999) have identified a relationship between anxiety and dissociation. Anxiety is identified as involving subjective attributions of apprehension and feelings of uneasiness, dread and tension while including reactions of the autonomic nervous system (Zeidner & Matthew, 2011). Specific forms of anxiety have been investigated in relation to dissociation, such as social anxiety. Evren *et al.* (2009) found a highly dissociative subgroup had significantly higher social anxiety scores than a low dissociative subgroup. Alternatively Farber *et al.* (2007) linked abnormal development of signal anxiety (the ability to anticipate and attend to danger) with intrusions of consciousness which results in high levels of dissociation. Therefore as a result, individuals experiencing high levels of dissociation may be seen to engage in dangerous behaviours or simply fail to escape from dangerous situations.

More specifically, dissociation has been linked to both state anxiety (Wolfradt & Meyer, as cited in Merckelbach & Muris, 2001) and trait anxiety (Ferguson and



Dacey, 1997) with physically abused individuals having more dissociative episodes and being chronically anxious. Katoch *et al.* (1994) discovered results suggesting that anxiety may be a part of the clinical manifestation of various dissociative disorders as it is likely that dissociation serves the function of protecting patients from the anxiety arising due to unconscious conflict, however it may be unsuccessful in doing so.

On the other hand, there has also been a link identified between dissociation and anxiety disorders (Mulder *et al.*, 1998; Muris *et al.*, 2003; Nijenhuis, 2000). Mulder *et al.* (1998) stated that few studies have examined the effect of current psychiatric illness on dissociative symptoms but from their own research they found evidence that illustrated that those with anxiety disorders also showed higher rates of high dissociation scores. Furthermore, Muris *et al.* (2003) discovered correlations between dissociation scores and anxiety disorders such as generalised anxiety disorder, obsessive compulsive disorder and panic disorder. This brings about the question of whether dissociation is also a clinical manifestation of anxiety disorders. Additionally, childhood trauma has been found to predispose individuals to anxiety disorders (Heim & Nemeroff, 2001) just as it has been linked to dissociative experiences (Marmar *et al.*, 1998; Putnam *et al.*, as cited in Sandberg & Lynn, 1992; Spiegel, 1990) therefore perhaps both dissociative disorders and anxiety disorders are interlinked, however the relationship between anxiety and dissociation is not extensive and there is a demand for further research in this area.

As previously discussed there is a wealth of research that has been conducted into the study of PTSD (therefore traumatic stress) and dissociation however there has been much less attention given to everyday life stressors and dissociative experiences, therefore much less is known about this topic area. As dissociation occurs in everyday life it is questioned whether everyday life stress has an effect on dissociation just as traumatic stress has an effect on dissociative disorder.

Stress is defined as the experience of major negative events or the perception of distress with an inability to cope with it (Stone *et al.*, 1999) and Janet is widely acknowledged to be the first scientist to link stress to dissociation (Hacking, as cited in Giesbrecht *et al.*, 2008). Consequently a collection of research has supported this over the years. Schauer and Elbert (2010) state that observations suggest that just as the mind has a way of turning off strong emotions in overwhelming situations, the body can also turn off some of its stress responses and this process of shutdown is incorporated by the term dissociation and causes a difficulty in constructing reality. Simeon *et al.* (as cited in Giesbrecht *et al.*, 2008) highlight that authors have supported the relationship between stress and dissociation in arguing that dissociation can also occur in response to stressful but not strictly traumatic life events. Furthermore, Morgan *et al.* (2001) state that research provides evidence that symptoms of dissociation are extremely common in healthy humans experiencing acute, highly intense stress.

However, it is not yet clear whether the relationship between stress and dissociation relates to state or trait dissociation (Soffer-Dudek and Shahar, 2011). Bremner *et al.* (1992) claim that some individuals may be more susceptible than others to develop dissociative symptoms in response to stress. Elsesser *et al.* (2008) describe dissociation as an adaptive arousal-reducing response to stress yet according to Morgan *et al.* (2001) the question remains to be seen whether the propensity to

dissociate is the result of exposure to stress or whether it represents a trait that predisposes an individual to dissociate intensely during stress.

Sachs-Ericsson *et al.* (2009) state that early life stress has been found to influence sensitivity to stress which may in turn contribute to increased health problems. Giesbrecht *et al.* (2008) declare that once an individual has learned to use dissociation to cope with a highly aversive event, dissociation can become automatised and used on a habitual basis in response to minor stressors.

Soffer-Dudek and Shahar (2011) found that the effects of stressful stimuli were only displayed in highly dissociative individuals in their study therefore suggesting a relationship between stress and trait dissociation. They explain a possibility that stress intensifies a high dissociated individual's ability to switch between different mental states as the mental state boundaries are less well defined when high dissociators experience stress. Hageaars and Krans (2011) have similar findings to Soffer-Dudek and Shahar as their results illustrate that high trait dissociation indicated a general vulnerability to stress. Griesbrecht *et al.* (2008) found that a higher level of trait dissociation was negatively related to the amount of time participants were able to hold their arm in ice water therefore suggesting a lower resistance to general stress or pain.

From looking at past research, it is evident that far more is known about the relationship between stress and trait dissociation as opposed to stress and state dissociation.

### **Methods of Measuring Dissociation and Psychological Distress**

Previous research in this area has used a large collection of different forms of questionnaires to investigate psychological distress such as depression, anxiety and stress as well as dissociative experiences.

Questionnaires such as the Beck Depression Inventory (BDI; Beck & Steer, 1987) have been used to investigate depression where as the Beck Anxiety Inventory (BAI; Beck & Steer, 1993) has been used to investigate anxiety. Furthermore, the Perceived Stress Scale (PSS; Cohen, 1994) has been used to investigate stress however; very few questionnaires have incorporated all of these forms of psychological stress into one questionnaire while maintaining clear boundaries between each one. This is where the Depression Anxiety stress Scale (DASS; Lovibond & Lovibond, 1995) fulfils a research demand. During testing of depression and anxiety scales a new scale labelled 'stress' was introduced to cover factors previously ignored thus the central aim was to generate measures of general negative affective syndromes (Lovibond & Lovibond, 1995). The DASS depression and anxiety scales have been found to be relatively highly correlated with the BDI and BAI respectively however the BDI is said to include factors that are not unique to depression which the DASS excludes (Lovibond & Lovibond, 1995). Furthermore, research has found that the DASS stress subscale and the PSS are highly correlated (Andreou *et al.*, 2011). The development of the DASS was carried out with non-clinical samples and is seen as a useful instrument for the measurement of depression, anxiety and stress of university students (Imam, 2008).

On the other hand, there are a number of different scales for measuring dissociative experience such as the Questionnaire on Experiences of Dissociation (Riley, 1988)

and the Dissociative Processes Scale (Harrison & Watson, 1992). However, the Dissociative Experiences Scale (DES), created by Bernstein and Putnam (1986) and developed further by Carlson & Putnam (DES-II; 1993) is noted by Gleaves *et al.* (1995) to be the most widely used instrument for investigating trait dissociative experiences. The DES and DES-II has been used in non-clinical populations to assess how levels of dissociation relate with other psychometric measures (Wright & Loftus, 1999) and has also effectively screened for dissociative disorders in a wide range of geographically different populations (Ellason *et al.*, 1991). A DES (or DES-II) score of thirty or more has been identified as the cut-off score for classifying high dissociators (Carlson & Putnam, 1993) and a DES (or DES-II) score above this cut-off point generally identifies individuals who have a dissociative disorder or who are at risk of developing a dissociative disorder if faced with a particular trigger or specific societal setting (Wright & Loftus, 1999).

In summary, although relationships have consistently emerged between psychological distress and dissociative experiences, these associations have often been identified among clinical samples of which possess dissociative disorders such as DID and PTSD. As a result a large majority of data has emphasised relationships between dissociative disorder's symptoms that incorporate psychological distress as opposed to general psychological stress in the general population without regard to psychological disorders. There has been much less attention given to psychological distress that is a normal part of everyday life in relation to dissociation and when this has occurred, often the authors have only focused on one type of psychological distress. More specifically research has found significant relationships between depression and dissociation, anxiety and dissociation, and stress and dissociation however this research has not been extensive and to date has not observed all three distress factors in relation to dissociation in the same study sample. As a result it has not been possible to suggest what specific types of normal psychological distress have the greatest significant relationship with dissociative experiences. Additionally, it seems that a great deal more research has investigated trait as opposed to state dissociation. Furthermore, a vast amount of research in this area has been conducted in the USA with significantly less studies being conducted in alternative countries and the UK is just one of these geographical areas that evade focus.

Therefore this study aimed to investigate the prevalence of dissociative experiences and psychological distress in a non-clinical, student sample in the North of England using the DES-II and the DASS. The time period focused on for responses on the DES-II was altered from a constant time frame to a period of the six preceding months prior to participation to investigate state as opposed to trait dissociation. Similarly the time period of focus was also altered to the last six preceding months on the DASS. From this, analysis was conducted to see if the depression, anxiety and/or stress subscales of the DASS predicted dissociative experiences on the DES. From this it possible to see how general psychological distress corresponds with dissociative experiences in a non-clinical sample. Furthermore, the DASS scores of those who were classed as being highly dissociated on the DES were compared to those who reported low levels of dissociation on the DES, according to Carlson and Putnam's (1993) thirty score cut off point.

## Methods

### Design

This study used a cross-sectional, survey design. A within subjects design was incorporated therefore all the participants completed the same questionnaires and the predictive capacity of depression, anxiety and stress on the outcome of dissociation was investigated using a simultaneous multiple regression. Furthermore, the depression, anxiety and stress scores of those who scored highly for dissociative experiences were analysed and compared to those who scored at a low level for dissociative experiences. This was done using Mann-Whitney U tests.

### Participants

With an attempt to collect a heterogeneous sample, an opportunistic sample from York St John University was invited to take part in this study. The participants from first, second and third year study were approached either during a Psychology class or in a non-academic location within the York St John University campus. Of the original 145 questionnaires handed out, ten were either not completed or not returned leaving a 93% response rate. Therefore the final investigative sample consisted of 135 participants, 36 (26.7%) of which were male and 99 (73.3%) of which were female. The participants ranged from the age of 18 to 26 ( $M = 19.87$ ,  $SD = 1.75$ ) and the sample consisted of 53 (39.3%) first year students, 45 (33.3%) second year students and 37 (27.4%) third year students.

### Measures

A self report survey was utilised for this study to investigate the predictive capacity of depression, stress and anxiety on the outcome of dissociative experiences and to investigate differences in psychological distress according to high and low levels of dissociative experiences. The initial questions related to the demographics of the participants therefore the questions investigated the participants' age, sex and university course subject. The participants' university year was also noted at the time of completion. The remaining part of the questionnaire incorporated the Depression, Anxiety, Stress Scale (DASS; Lovibond & Lovibond, 1995) and the Dissociative Experiences Scale- II (DES-II; Carlson & Putnam, 1993). All questions related to experiences over the past six months. From Farrington *et al.* (2001) and Butler (2006), an initial introductory definition of non-pathological dissociation was provided for a lay audience.

- Dissociation is a common state of consciousness which entails a detachment from one's emotions or surroundings and may be illustrated by becoming lost in thought or day-dreaming.

### Depression, Anxiety, Stress Scale (DASS)

To measure the participants' prevalence of depression, anxiety and stress, the DASS (Lovibond & Lovibond, 1995) was incorporated into the participant questionnaire. Research with clinical (Antony *et al.*, 1998; Brown *et al.*, 1997) and non-clinical samples (Lovibond & Lovibond, 1995) has illustrated the excellent psychometric properties of the three DASS scales, with Lovibond & Lovibond (1995) finding outstanding internal consistency (depression 0.91; anxiety 0.84; stress 0.90).

Antony *et al.* (1998) confirms that the DASS is a reliable and valid method of assessing features of depression, anxiety and tension-stress in clinical and non-clinical groups. The DASS includes 42 items in total which are divided into the three subscales, DASS-Depression, DASS-Anxiety and DASS-Stress, each of which have fourteen items each. The participants answered each question in terms of how much each statement applied to them over the past six months on a scale of 0 to 3. '0' referred to 'Did not apply to me at all'; '1' referred to 'Applied to me to some degree, or some of the time'; '2' referred to 'Applied to me to a considerable degree, or a good part of the time' and '3' referred to 'Applied to me very much, or most of the time'. The scores for each question were simply totalled for each subscale therefore the higher the score the participants gained on each of these subscales indicated a higher rate of depression, anxiety and stress respectively. The minimum possible score for each subscale is zero and the highest possible score is 42.

### **Dissociative Experience Scale-II (DES-II)**

To measure the participants' prevalence of dissociative experience, the participants were asked to complete the DES-II (Carlson & Putnam, 1993) as part of the questionnaire. Van Ijzendoorn & Schuengel's (1996) meta-analysis found a general consensus of the high test-retest reliability (0.84; 0.93; 0.93; 0.79; 0.90) of the DES. The DES-II makes an important improvement on the DES as the scoring scale requires participants to circle the desired percentage as opposed to marking their percentage on a line of 0 to 100 percent as the previous version of the DES does, therefore the DES-II has more accuracy and causes less confusion over what exact percentage was implied. The DES-II consists of 28 items that relate to experiences of dissociation. For the purpose of this study the original time period of focus for responses for these questions was altered from constant time throughout one's life to the previous six months only, to investigate state as opposed to trait dissociation. Therefore the participants were asked to indicate the percentage of time they had experienced each of the items in the last six months when they were not under the influence of alcohol or drugs by circling the corresponding percentage number. The scores for all the questions were totalled and then divided by 28 to provide the average score which is referred to as the DES-II score. The higher the participants scored on the DES-II, the higher the prevalence of experienced dissociation. The minimum possible score for the DES-II is zero and the highest possible score is 100 however scores above the cut-off point of 30 indicate strong dissociative features (Carlson & Putnam, 1993) and therefore suggest a likelihood and risk that the individual is suffering from a dissociative disorder.

### **Procedure**

The decision to investigate dissociative experiences using the DES-II (Carlson & Putnam, 1993) was relatively straightforward however the choice of which questionnaires to use to investigate depression, anxiety and stress was a little more difficult. The BDI (Beck & Steer, 1987), BAI (Beck & Steer, 1993) and the PSS (Cohen, 1994) were considered however it was decided that it would not be possible to investigate all three of the types of psychological distress in relation to dissociation using all of these questionnaires as it would simply take too long for the participants to complete the questionnaire. Not only would this create difficulties in collecting participants who would agree to partake in a lengthy questionnaire but also the validity of the results may be low as the participants may have lost interest in

answering the questions. As a result, the decision to use the DASS (Lovibond & Lovibond, 1995) was made as it would incorporate scores of depression, anxiety and stress that could be completed within five and ten minutes. Following this, the research proposal was presented to the York St John Psychology Ethics Committee and ethical approval was gained. Attempts were made at all times throughout the investigation to follow the guidance set out by the British Psychological Society's (BPS) Code of Ethics and Conduct (British Psychological Society; BPS, 2009).

The lecturers of a first, second and third year Psychology class were contacted and asked for permission to attend their lecture to ask their students to participate in the study by completing a short questionnaire that would take between ten and twenty minutes to complete. Once this permission was gained, the students from all three year groups were approached in their Psychology class and informed of a brief definition of dissociation and the researcher's aims and they were provided with an information sheet and consent form that included their participant number. The information sheet included information about the study and informed the participants of their right to withdraw up until the 1<sup>st</sup> of March 2012 and that their data would always remain confidential. It also included contact details to be used in conjunction with the participant number for inquiries and withdrawal requests and contact details to be used in the event of distress occurring from participation (The University Counselling and Wellbeing Services; The Samaritans). Once they had read the information sheet, they provided their informed consent for participation and completed the questionnaire investigating their demographic data, DASS scores and DES-II scores, at their own pace. Furthermore, students of York St John University were also approached and asked to participate in a non-academic location of the university and received the same introductory processes to allow them to provide their informed consent and then complete the same questionnaire. Once the participants had completed the questionnaire, they were thanked for participating and received a debrief sheet that provided further information on the background and reasoning for conducting the study and confirmed their right to request further information if they desired.

One-hundred and thirty-five of the one-hundred and forty-five questionnaires were returned to the researcher and this was deemed a satisfactory number of participants according to Field's (2009) appropriate sample size equations for regression analysis:

- $50 + 8 \times \text{the number of predictor variables} (50 + (8 \times 3) = 74)$
- $104 + k (104 + 3 = 107)$

The sample size was greater than the results of the equations therefore the data for the sample was inputted into PASW and the descriptive statistics were calculated. Following this, Mann-Whitney U tests were calculated to investigate the difference in depression, anxiety and stress scores according to whether the participants scored above or below Carlson and Putnam's (1993) cut-off point for risk of having a dissociative disorder. A simultaneous multiple regression analysis was then run to investigate the predictive capacity of the DASS-Depression, DASS-Anxiety and DASS-Stress scores on the occurrence of dissociative experience scores (DES-II).

## Results

### Descriptive Analysis

Descriptive statistics such as the mean and standard deviation scores were calculated for the DASS depression, anxiety and stress scores and the total DES scores (see Table 1). All statistics were reported to two decimal places.

**Table 1**

**Means and standard deviations for the depression, anxiety, stress and dissociation scores**

	No. items	Total (N = 135)	
		M	SD
<b>DASS-Depression scores</b>	14	8.66	9.72
<b>DASS-Anxiety scores</b>	14	8.20	7.85
<b>DASS-Stress scores</b>	14	12.67	8.81
<b>Total DES scores</b>	28	17.46	12.96

The mean scores for the DASS and DES are comparable to previous research. All three of the DASS subscale means are higher than those found in Lovibond and Lovibond's (1995) student sample (DASS-Depression; 7.19, DASS-Anxiety; 5.23, DASS-Stress; 10.54). However the current mean scores are lower than those calculated by Bhasin *et al.* (2010) from their student sample (DASS-Depression; 11.9, DASS-Anxiety; 9.0, DASS-Stress; 15.5). On the other hand, the current DES mean score is considerably more than the mean score of 14.27 found by Van IJzendoorn and Schuengel (1996) and 16.33 found by Gleaves *et al.* (1995) within student samples. Furthermore, the DES mean score from this study is much greater than the mean DES score of 8.0 discovered in the general population by Maaranen *et al.* (2005).

In terms of the DASS, stress scores had the highest mean scores followed by depression and closely followed by anxiety ranking the lowest (see Table 1). A similar pattern was found for male's and female's scores as for both genders, DASS stress had the highest mean score followed by depression and then anxiety had the lowest mean score. However, males and females both had a similar mean depression score but females' mean anxiety and stress scores were higher than males where as males had a lower dissociative experiences mean score than females (see Table 2). Carlson and Putnam (1993) state that it is not adequate to simply report the mean DES-II scores as the percentage of those scoring over the 30 score cut-off point for the suggestion of risk for dissociative disorders should also be reported. Following Carlson and Putnam's recommendation, of the 19 participants that scored over 30 on the DES-II, six (31.58%) were male and thirteen (68.42%) were female. Therefore overall in terms of the whole sample, 4.44% of the male and 9.63% of the female participants scored over the 30 score cut-off point.

Table 2

**Means and standard deviations for depression, anxiety, stress and dissociation scores according to gender**

	<b>Males (n = 36)</b>		<b>Females (n = 99)</b>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<b>DASS-Depression scores</b>	8.64	8.8	8.67	10.07
<b>DASS-Anxiety scores</b>	7.22	7.67	8.56	7.92
<b>DASS-Stress scores</b>	10.61	7.19	13.42	9.25
<b>Total DES scores</b>	19.91	16.36	16.58	11.44

Descriptive analysis of all three university year groups also illustrated a higher mean score for stress followed by depression and then anxiety for the second and third year groups. Alternatively, the first year group displayed a high mean score for DASS stress followed by anxiety, with depression having the lowest mean score (see Table 3).

In terms of depression scores, the third year group had the highest mean score followed by the second year group, with the first year group having the lowest mean score. In terms of the anxiety scores, the first year group had the highest mean score followed by the third year group, with the second year group having the lowest scores. Additionally, for the stress scores, the third year group had the highest mean score followed by the first year group, with the second year group having the lowest mean stress score (see Table 3). Finally, descriptive analysis illustrated that dissociative experience scores decreased through the university year groups with the first year group having the highest mean score and the third year group having the lowest mean score (see Table 3). Of the 19 participants that scored over 30, 8 (42.11%) of them were in the first year of study, 10 (52.63%) were in the second year of study and 1 (5.26%) was in the third year of study. In terms of the sample as a whole, 5.93% of first year students, 7.41% of second year students and 0.74% of third year students scored over the 30 value cut-off point.

Table 3

**Means and standard deviations for depression, anxiety, stress and dissociation scores according to university year of study**

	<b>Year 1 (n = 53)</b>		<b>Year 2 (n = 45)</b>		<b>Year 3 (n = 37)</b>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<b>DASS-Depression scores</b>	7.94	9.24	8.87	10.55	9.43	9.54
<b>DASS-Anxiety scores</b>	8.62	7.84	7.71	8.26	8.19	7.52
<b>DASS-Stress scores</b>	12.7	9.03	12.16	8.88	13.27	8.62
<b>Total DES scores</b>	19.21	13.74	17.52	13.56	14.89	10.77

The percentage of participants that had scores in each of Lovibond and Lovibond's (1995a) intensity categories (normal, mild, moderate, severe and extremely severe)



can be seen in Table 4. The majority of participants scored within the norm category for depression, anxiety and stress.

**Table 4**

**Lovibond & Lovibond's (1995a) intensity categories and the percentage of participants of this study who scored within these categories**

	Depression		Anxiety		Stress	
	Score	% of participants	Score	% of participants	Score	% of participants
<b>Norm</b>	0-9	68.90	0-7	58.50	0-14	65.20
<b>Mild</b>	10-13	7.50	8-9	11.10	15-18	11.80
<b>Moderate</b>	14-20	13.40	10-14	3.30	19-25	14.00
<b>Severe</b>	21-27	3.70	15-19	7.50	26-33	5.80
<b>Extremely Severe</b>	28+	6.50	20+	9.30	34+	2.90

Following Carlson and Putnam's (1993) recommendations to report the percentage of participants who score above the 30 value cut-off point for the indication of a risk of having or developing a dissociative disorder, the descriptive statistics were also calculated for the 116 (85.93%) participants who scored under the cut-off point and the 19 (14.07%) participants who scored over this cut-off point (see Table 5).

**Table 2**

**Means and standard deviations for depression, anxiety, stress and dissociation scores for the participants who scored over the 30 cut-off point**

	High dissociators ( <i>n</i> = 19)		Low dissociators ( <i>n</i> = 116)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<b>DASS-Depression scores</b>	17.89	12.23	7.15	8.38
<b>DASS-Anxiety scores</b>	14.16	8.97	7.22	7.24
<b>DASS-Stress scores</b>	19.47	10.00	11.56	8.12
<b>Total DES scores</b>	42.37	11.70	13.38	7.41

### **Mann-Whitney U Test Analysis**

As the high dissociators were found to be normally distributed but the low dissociators were not, the data was deemed nonparametric therefore Mann-Whitney U tests were calculated to investigate the differences between the depression, anxiety and stress scores for the high and low dissociators according to Carlson and Putnam's (1993) cut-off point. A Mann-Whitney U test was calculated for the depression scores which found a significant difference between the two dissociative experiences groups;  $U = 515.5$ ,  $n^1 = 116$ ,  $n^2 = 19$ ,  $p < 0.05$ ,  $r = -0.32$ , power = 0.99. The Mann-Whitney U test calculated for the anxiety scores found a significant difference between the two dissociative experiences groups;  $U = 553.5$ ,  $n^1 = 116$ ,  $n^2 = 19$ ,  $p < 0.05$ ,  $r = -0.32$ , power = 0.99.

= 19,  $p < 0.05$ ,  $r = -0.30$ , power = 0.99. Finally the Mann-Whitney U test for the stress scores found a significant difference between the two dissociative experiences groups;  $U = 581.5$ ,  $n^1 = 116$ ,  $n^2 = 19$ ,  $p < 0.05$ ,  $r = -0.28$ , power = 0.99. Therefore, the participants who scored above 30 for dissociative experiences scored significantly higher for depression, anxiety and stress than the participants who scored below 30 for dissociative experiences.

### Simultaneous Multiple Regression Analysis

It is difficult to see from looking at the mean scores for the DASS depression, anxiety and stress scores and the overall DES-II scores, whether or not there is a relationship between the two scales. As a result, a simultaneous multiple regression was calculated to examine whether dissociation scores could be predicted on the basis of depression, anxiety and stress scores. Results of the regression analysis found a significant model,  $F(3,131) = 26.83$ ,  $p < 0.05$ , which accounted for 38.1% of the variance  $r^2 = 0.381$ .

The individual contribution of each predictor variable is shown in table 6. It can be seen from the multiple regression analysis that dissociative experiences as measured by the DES-II, can be predicted by depression and anxiety as measured by the DASS. The stress scores from the DASS positively predicted dissociative experiences in the DES-II however this relationship was not found to be significant.

**Table 3**

#### Beta values for the constant, depression, anxiety and stress

	<b>b</b> Unstandardised beta	<b>SE B</b> Standard error beta	<b>β</b> Standardised beta	<b>t-test</b>
<b>Constant</b>	8.606	1.595		
<b>Depression</b>	0.394	0.143	0.296	2.756, $p < 0.05$
<b>Anxiety</b>	0.549	0.198	0.333	2.777, $p < 0.05$
<b>Stress</b>	0.074	0.206	0.051	0.362, $p = ns$

### Discussion

The results of the study suggested that students are more dissociated than the general population as they had a higher mean score than the mean score found by Maaranen *et al.* (2005). The participants also had a higher dissociative mean score than the student dissociative experiences mean found by Van IJzendoorn and Schuengel (1996) and Gleaves *et al.* (1995) in the Netherlands and the USA respectively. Therefore, it appears that UK students are more dissociated than students in the Netherlands and the USA. Furthermore, the students of this sample had a higher mean score for depression, anxiety and stress than the students questioned by Lovibond and Lovibond (1995) and a lower mean than the student sample collected by Bhasin *et al.* (2010) in Australia and India respectively. Therefore it appears that UK students are more depressed, anxious and stressed

than Australian students but less depressed, anxious and stressed than Indian students.

The Mann-Whitney U tests revealed that the participants who scored above Carlson and Putnam's (1993) cut-off point for dissociative disorders were significantly more depressed, anxious and stressed, than the participants who scored below the cut-off point. Therefore the findings suggest that high dissociators who are deemed at risk of having a dissociative disorder are also vulnerable to psychological distresses such as depression, anxiety and stress and this can be applied to clinical treatment. However, the regression analysis of this study's data revealed that dissociative experiences could be significantly predicted by the depression and anxiety scores but not by the stress scores.

The results of this study support the research conducted by Leonard *et al.* (1999) and Maaranen *et al.* (2005) as mentioned previously as similarly a correlational relationship between dissociation and depression in the general public was found. Furthermore, as the participants who scored above the DES-II 30 score cut-off point for risk of dissociative disorders were significantly more depressed than those who scored below the cut-off point, support is achieved towards Bob *et al.*'s (2005) findings that suggest there is a close relationship between depression and dissociative disorder. However, it must be noted that the DES-II is a screening tool, not a diagnostic instrument as it only suggests that clinical assessment is warranted and not that an individual has a dissociative disorder (Ross, 1997). The particular findings of this study that suggest depression predicts the experience of dissociation, may be explained by Katon *et al.* (1982) as previously referenced in the introduction. Katon *et al.* state that dissociation is a type of coping mechanism that affects consciousness, cognitions and behaviours that may be used by depressed individuals in an attempt to avoid negative emotions.

Furthermore, the results of this study further support the findings identified by Leonard *et al.* (1999) as a relationship was also found between anxiety and dissociative experience as anxiety predicted dissociation. As those who scored above the DES-II 30 score cut-off point were also significantly more anxious than those who scored below the cut-off point, support is achieved towards Katoch *et al.*'s (1994) findings that suggest anxiety may be part of the clinical manifestation of dissociative disorders as it is likely that dissociation serves to protect individuals from intense anxiety from unconscious conflict. Alternatively, as discussed previously, Mulder *et al.* (1998) and Nijenhuis (2000) identified a link between dissociation and anxiety disorder therefore the significantly higher scores of anxiety in the high dissociative experiences group may not have illustrated that anxiety is a manifestation of dissociative disorder but rather dissociation is a manifestation of anxiety disorder. All though this study helps to add to the relatively small amount of research conducted investigating the relationship between anxiety and dissociation, it is clear that further research is most definitely required to identify the relationships between the two psychological conditions in more detail.

Although the participants who scored above the cut-off value for being at risk of dissociative disorders, were significantly more stressed according to the Mann-Whitney U test than those who scored below the cut-off value, the simultaneous multiple regression analysis showed that dissociative experiences could not be

predicted by levels of stress in the participant sample as a whole. Therefore it appears that the fact that the high dissociators were significantly more stressed than the low dissociators yet the overall scores for the whole participant sample for dissociative experiences and stress do not significantly correlate according to the simultaneous multiple regression, contrasting results arise. Stress appears to be related to pathological levels of dissociative experiences but not non-pathological levels of dissociative experiences. Only the Mann-Whitney U test results support previous research that suggests there is a relationship between dissociation and stress (Haganaars & Krans, 2011; Morgan *et al.*, 2001; Simeon *et al.*, as cited in Giestbrecht *et al.*, 2008). However, it appears that the whole participant sample had a relatively high mean score for DASS-Stress regardless of their experience of dissociation and this may have affected the results of the simultaneous multiple regression that opposes this previous research.

University life has often been deemed as highly stressful due to moving away from home, financial difficulties and having to complete a large amount of work in a short space of time which may explain why the participant sample had a high mean stress score. Firth (1986) identified that high levels of stress and anxiety have been reported in students. Furthermore, Sax also found high levels of stress in students nationwide (as cited in Misra & McKean, 2000) and Matheny *et al.* (2002) explain that adjusting to college life proves to be stressful for many young adults.

Students have been found to be successful at dealing with stress when they are better at managing their time, when they perceive control over situations and when they engage in leisure activities (Misra & McKean, 2000) however this was not investigated in this study yet it may have influenced the different responses in the current sample. Alternatively, the difference in stress coping mechanisms may be explained in terms of early life experiences. As previously mentioned, Sachs-Ericsson *et al.* (2009) state that early life stress can influence sensitivity to stress in later life which may in turn contribute to health problems. In line with this, once an individual has learned dissociative coping mechanisms, they can become automatised and used on a habitual basis in response to minor stressors (Giestbrecht *et al.*, 2008). It may be the case in this study that it was only the stressed participants who had succumbed to previous stressful life events that displayed experiences of dissociation. Explanations for instances of this occurring can be found in research investigating PTSD and dissociation. For example, Van der Kolk and Fisler (1995) claim that individuals who have learned to cope with trauma through dissociation are vulnerable to continue to do so in response to minor stresses and avoidance of traumatic memories seems to be a critical element that leads to PTSD. However, care must be taken when considering this as an explanation for the results of this study as the participants were not asked questions relating to their life history or trauma or experiences previous to the last six months due to ethical reasons therefore perhaps more research in this area would be beneficial.

Furthermore, it was discovered that mean scores for dissociative experience decreased with the increasing year of university study just as depression therefore the first year students had a higher mean score for dissociative experiences and the third year students had the lowest mean score for dissociative experiences. It would be interesting to investigate this further to discover why this occurred. Perhaps

reasoning for this may also lie in the impact of students moving away from home and having to look after themselves at the onset of university life.

The current investigation is an addition to the relatively small amount of research that has been conducted into the topic of dissociation within the UK and especially within the UK student population. Furthermore, as far as is known, this study is the first research investigation to use both the DASS and the DES together to investigate the relationship between psychological distresses and dissociative experience and it seemingly works well. Additionally, as far as is known, this is the first study to investigate depression, anxiety *and* stress in relation to dissociative experiences all in *one* study, within *one* population, therefore it is possible to see which forms of psychological distress have the greatest influence. This study may be a useful investigation for researchers and clinicians to use as a student sample comparison for clinical and non-clinical samples. The results of this study may also be useful for interventions into treatment procedures for individuals suffering from dissociative disorders as it suggests that they may also be vulnerable to suffering from depression, anxiety and perhaps also stress therefore practitioners should be aware of this and take necessary precautions. It is possible that if individuals undergo cognitive behavioural therapy, they may be able to alter their thought processes and therefore keep depression and anxiety (and stress) to a minimum and therefore in turn, dissociative experiences may be also kept to a minimum. However this requires more research before such presumptions may be made.

A number of limitations may be noted on the basis of the study's methodological efforts in terms of the participant sample. Firstly, the sample consisted of undergraduate students collected from one university in the North of England therefore all though the students will have come from a collection of different UK regions, the sample is by no means representative of the normal population or of the UK student population as a whole. Additionally, there was a great gender inequality in the participant sample as the majority of participants were female, therefore although this may be representative of the university the study was conducted at (as the university has a 70:30 female to male gender ratio (Directgov Unistats (n.d)), the study sample is not representative of the wider student or non-student population. Furthermore, although the number of participants taken from each year group was more or less proportionally representative of the three year groups, the sample was not representative of different university study courses as the majority of the participants were taken from Psychology classes. It is possible that a sample consisting mainly of students from a different university course may have produced different scores for the questionnaires used in this investigation. For example, medical students are especially recognised as experiencing stressful educational environments that exert negative effect on the psychological well-being of the students and it has been found that 70% of a medical student sample suffered from anxiety and depression (Khan *et al.*, 2006). Alternatively, Andrew *et al.* stated that law school is a breeding ground for depression, anxiety and other stress-related illnesses more than other educational courses (as cited in McKinney, 2002). As a result it is possible that medical or law students may have reported higher scores for depression, anxiety and stress than the current sample as it is proposed that they face the most distressing university experiences. This in turn may have produced greater reports of high levels of dissociative experiences.

There were vastly different amounts of participants in each age category as there were a lot of eighteen, nineteen, twenty and twenty-one year old participants but only a select few participants in the older years running up to and including the age of twenty-six, therefore not only were the age groups not representative but there are also difficulties in assessing the descriptive statistics in terms of age. As a result it is not possible to see if a decline in dissociative experiences according to increasing age were present in this study as has been observed in previous studies (Bauer & Power, 1995; Gleaves *et al.*, 1995; Ross *et al.*, 1989; Vanderlinden *et al.*, 1995).

Additionally, it would have been useful to be able to calculate a simultaneous multiple regression for the participants who scored over the DES-II 30 score cut-off to see the predictive capacity of depression, anxiety and stress however due to the relatively small sample size, this was not possible.

In terms of the design of the study, further limitations may be noted. As a cross-sectional design was employed it was not possible to see changes in depression, anxiety and stress and the outcome of dissociative experiences over time or to see whether in actual fact it was dissociative experiences that lead to experiences of depression, anxiety and stress. A longitudinal study would provide a deeper insight into the relationship between depression, anxiety and stress and dissociative experiences as changes over time would be visible. It may actually then be discovered that dissociation preludes psychological distress as opposed to psychological distress leading to dissociation as investigated in this study. Additionally, due to the survey design procedure, self-report data was collected and this in itself may be criticised for lacking reliability and validity. Individuals may have exaggerated their answers or misunderstood the questions and Gleaves *et al.* (1995) state that it is possible that some undergraduate students may be careless in their response styles when completing the DES-II. Giesbrecht *et al.* (2008) state that a relationship between dissociation and fantasy proneness has been made and this causes difficulties in assessing dissociator's self-report responses as they may confuse imagined events with factual events, thus compromising the validity of self-report questionnaires and therefore, the validity of the responses provided by the highly dissociated participants in this study is questionable. Furthermore, the study is also criticised as a simultaneous multiple regression analysis was conducted therefore it is possible to make predictive presumptions but it is not possible to establish cause and effect relationships due to its correlational basis.

Also the study did not take in to account a number of extraneous variables that may contribute to psychological distress and/or dissociative experiences. There are certain aspects that have been found to have an effect on individuals' psychological well-being, in previous research. For example, social support has been found to be negatively correlated with depression (Klerman *et al.*, as cited in Allen *et al.*, 2006) and stress (Linder, as cited in Sarason *et al.*, 1987). Also a low-income has been found to relate to depression (Prince *et al.*, 1997) and anxiety (Lofors *et al.*, 2006). Additionally, ethnicity has been found to relate to depression (González *et al.*, 2010), anxiety (Comino *et al.*, 2001) and stress (Contrada *et al.*, 2000). Religion, relationship status, experiences of trauma or family histories may also be contributing factors. Similarly, the effects of social support on dissociative experiences have been observed by Kazak *et al.* (1997). Furthermore, research has found that individuals who receive a low-income (Campbell *et al.*, 2008) and those

who belong to certain ethnicity groups, such as African-Americans (Seedat *et al.*, as cited in Ford, 2012) are also at risk of experiencing dissociative experiences. Lower marital/relationship satisfaction has been linked to dissociative experience (Goff *et al.*, 2007) and previous traumatic experiences or family histories are also likely to influence dissociative experiences. As this collection of extraneous variables was not accounted for in this study, the results may not be entirely accurate therefore further research including other relevant variables would be beneficial.

It is also possible to find limitations regarding how the DES-II questionnaire was employed and analysed. According to Carlson and Putnam (1993) the DES-II is conceptualized as a trait measure that inquires about the frequency of dissociative experiences in individual's daily lives. However, in this study, the time frame of focus for the questions on the DES-II was altered from having no time frame (respondents were originally simply asked to refer to the percentage of time dissociative experiences occurred) to how often dissociative experiences have occurred in the last six months. Therefore the DES-II in this study was very much incorporated as a state measure as a relatively short, recent time frame was focused on for all questions. Although depression, anxiety and stress may have lead an already dissociative individual to have a stint of dissociative experiences as it may be presumed that those who have trait dissociation would be more sensitive to environmental factors and therefore display state dissociation more severely, using the DES-II as a state measure is not what the authors intended therefore the reliability of using the scale in this way is questionable. The State Scale of Dissociation (SSD; Kruger & Mace, 2002) would have been more appropriate for investigating state dissociation in relation to the DASS. Furthermore, although the DES-II has been used in non-clinical samples, Carlson and Putnam (1993) intended the purpose of the DES-II as a method of determining the contribution of dissociation to various psychiatric disorders and as a screening instrument for dissociative disorders therefore this must be taken into consideration when using the DES-II with participants who are not diagnosed as experiencing a dissociative disorder. Wright and Loftus (1999) state that the resulting distributions of using the DES in a non-clinical sample are highly skewed and liable to floor effects thereby limiting its usefulness. However the current study *and* previous research in non-clinical samples have illustrated skewed data (as the majority of participants were not deemed at risk of dissociative disorders) but they have not illustrated floor effects (Gleaves *et al.*, 1995; Van IJzendoorn & Schuengel, 1996; Vanderlinden *et al.*, 1995).

Additionally, this study only looked at the total DES-II score as a measure of dissociative experiences. Previous research has investigated dissociative experiences in more depth by looking at particular factors within the DES-II. Waller *et al.* (1996) and Farrington *et al.* (2001) identified a number of factors which are listed as; amnesia for dissociative experiences, absorption and imaginative involvement; and derealisation and depersonalisation. Waller *et al.* (1996) highlighted that extreme forms of amnesia, derealisation and depersonalisation are highly related to psychological problems, yet absorption and imaginative involvement are not significantly related to psychological problems. Therefore, had the DES-II been studied in more detail in this investigation, it may have been found that those who scored highly for depression, anxiety and stress also scored highly for amnesia, derealisation and depersonalisation but achieved a low score for absorption and imaginative involvement. A re-analysis of the current data would shed light on this

and therefore would produce a valuable insight into the specific forms of dissociative factors influencing psychological distress.

Additionally, although the number of participants who scored in each of Lovibond and Lovibond's (1995a) intensity categories was reported, this was not investigated further and statistical analysis was not calculated in relation to dissociative experiences. Therefore a further re-analysis may produce additional findings.

As result of the findings and limitations of this study, it is possible to make a number of recommendations for future research. To investigate the relationship between depression, anxiety and stress, and dissociation further as it is not well understood, it would be worthy to conduct a longitudinal study using a larger sample consisting of both clinical and non-clinical; student and non-student samples from a collection of different geographical locations. This would provide an insight into how a relationship may develop over time using a representative sample which could then be applied to the population as a whole. Comparisons may then be made between depression, anxiety, stress and dissociative experience scores of clinical, student and normal populations which would therefore display the differences in severity of these psychological states according to each subgroup. Furthermore, future research should investigate the affects of the extraneous variables not accounted for by this study to see the effects they have on the relationship between psychological distress and dissociative experiences. It would also be interesting to investigate whether a course of cognitive behavioural therapy could help control and minimise the occurrence of depression, anxiety and stress and therefore in turn minimise the outcome of dissociation (or vice-versa). Finally, because of the nature of the research area of this study and the fact that many questions remain unanswered, it is recommended that future research initially use the DASS and DES-II as screening tools to identify the participants who score highly for depression, anxiety, stress and dissociation. From this additional questions could then be asked to investigate factor relationships in more detail.

## References

- Allen, J. P., Porter, M. R., & Mcfarland, F. C. (2006). Leaders and followers in adolescent close friendships: Susceptibility to peer influence as a predictor of risky behavior, friendship instability, and depression. *Developmental Psychopathology*, 18, 155-72.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text review). Washington, DC: Author.
- Andreou, E., Alexopoulos, E. C., Lionis, C., Varvogli, L., Gnardellis, C., Chrousos, G. P. *et al* (2011). Perceived Stress Scale: Reliability and validity study in Greece. *International Journal of Environmental Research and Public Health*, 8, 3287-3298.
- Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression



anxiety stress scales in clinical groups and a community sample. *Psychological Assessment*, 10, 176-181.

Beck, A. T., & Steer, R. A. (1987). *Beck Depression Inventory manual*. San Antonio, TX: Psychological Corporation.

Beck, A. T., & Steer, R. A. (1993). *Beck Anxiety Inventory manual*. San Antonio, TX: Psychological Corporation.

Bauer, A. M., & Power, K. G. (1995). Dissociative experiences and psychopathological symptomatology in a Scottish sample. *Dissociation*, 8(4), 209-219.

Bernstein, E. M., & Putnam, F. W. (1986). Development, reliability, and validity of a dissociation scale. *Journal of Nervous & Mental Disease*, 174, 727-735.

Bhasin, S. K., Sharma, R. & Saini, N. K. (2010). Depression, anxiety and stress among adolescent students belonging to affluent families: A school-based study. *Indian Journal of Pediatrics*, 77, 161-165.

Bob, P., Šusta, M., Pavla, T. J., Hynek, K., & Raboch, J. (2005). Depression, traumatic dissociation and epileptic-like phenomena. *Neuroendocrinology Letters* 26, 321-325.

Bourgeois, P. (1997) Training in Hypnosis. In J. Guimon (Ed.) *The Body in Psychotherapy: International Congress, Geneva 1996*. (185-190). Switzerland: Library of Congress Cataloguing.

Bremner, J.D., Southwick, S.M., Brett, E., Fontana, A., Rosenheck, R., & Charney, D.S. (1992). Dissociation and posttraumatic stress disorder in Vietnam combat veterans. *American Journal of Psychiatry*, 149, 328-332.

British Psychological Society (2009). *Code of Ethics and Conduct*. Leicester: British Psychological Society.

Brown, T. A., Chorpita, B. F., Korotitsch, W, & Barlow, D. H. (1997). Psychometric properties of the Depression Anxiety Stress Scales (DASS) in clinical samples. *Behaviour Research and Therapy*, 35, 79-89.

Butler, L. D. (2006). Normative dissociation. *Psychiatric Clinics of North America*, 29, 45-62.

Campbell, R., Greeson, M. R., Bybee, D., & Raja, S. (2008). The co-occurrence of childhood sexual abuse, adult sexual assault, intimate partner violence, and sexual harassment: A meditational model of posttraumatic stress disorder and physical health outcomes. *Journal of Consulting and Clinical Psychology*, 76 (2), 194-207.

Carlson, E., & Putnam, F. W. (1993). An update on the Dissociative Experiences Scale. *Dissociation*, 6(1), 16-27.

Chiu, C., Yeh, Y., Huang, Y., Wu, Y., & Chiu, Y. (2009). The set switching function of nonclinical dissociators under negative emotion. *Journal of Abnormal Psychology, 118*, 214-222.

Cohen, S. (1994). *Perceived stress scale*. Palo Alto, CA: Mind Garden.

Collins, F. E. (2004). Dissociation, coping and control: A cognitive model of dissociation in non-clinical populations. Unpublished Bachelor's thesis, Monash University.

Comino, E. J., Silovec, D., Manicavasagar, V., Harris, E., & Harris, M. F. (2001). Agreement in symptoms of anxiety and depression between patients and GPs: The influence of ethnicity. *Family Practice, 18*(1), 71-77.

Contrada, R. J., Ashmore, R. D., Gary, M. L., Coups, E., Egeth, J. D. & Sewell, A., et al. (2000). Ethnicity-related sources of stress and their effects on well-being. *Current Directions in Psychological Science, 9*(4), 136-139.

Costa Jr., P. T. & McCrae, R. R. (1992). *The revised NEO personality inventory (NEO-PI-R) and NEO five-factor inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.

Directgov Unistats (n.d) York St John University details. Accessed on the 17/04/2012 from <http://unistats.direct.gov.uk/uniDetailsStats.do>.

Ellason, J. W., Ross, C. A., Mayran, L. W., & Sainton, K. (1994). Convergent validity of the new form of the DES. *Dissociation, 7*, 101-103.

Elsesser, K., Freyth, C., Lohrmann, T., & Sartory, G. (2008). Startle reactivity and peritraumatic dissociations in acute stress disorder. *Journal of Psychophysiology, 22*(4), 185-194.

Erdelyi, M. H. (1990). Repression, reconstruction, and defense: History and integration of the psychoanalytic and experimental frameworks. In J. J. Singer (Ed.), *Repression and dissociation* (1-32). Chicago: University of Chicago Press.

Evren, C., Sar, V., Dalbudak, E., Oncu, F., & Cakmak, D., (2009) Social anxiety and dissociation among male patients with alcohol dependency. *Psychiatry Research, 165*, 273-280.

Farber, S. K., Jackson, C., Tabin, J. K., & Bachar, E. (2007). Death and annihilation anxieties in anorexia nervosa, bulimia, and self-mutilation. *Psychoanalytic Psychology, 24*, 289-305.

Farrington, A., Waller, G., Smerden, J., & Faupel, A. W. (2001) The Adolescent Dissociative Experiences Scale: Psychometric properties and difference in scores across age groups. *Journal of Nervous & Mental Disease, 189*, 722-727.

Ferguson, K. S., & Dacey, C. M., (1997). Anxiety, depression, and dissociation in women health care providers reporting a history of childhood psychological abuse. *Child Abuse and Neglect, 21*, 941-952.

- Field, A. P. (2009) *Discovering statistics using SPSS*. 3rd ed. London (UK): Sage Publications.
- Firth J. (1986) Levels and sources of stress in medical students. *British Medical Journal*, 292, 1177-1180.
- Ford, J. D. (2012). Ethnoracial and educational differences in victimization history, trauma-related symptoms, and coping style. *Psychological Trauma: Theory, Research, Practice, and Policy*, 4(2), 177-185.
- Gharaibeh, N. (2009). Dissociative identity disorder. Time to remove it from DSM-V? *Current Psychiatry*, 8(9), 30-36.
- Giesbrecht, T., Lynn, S. J., Lilienfeld, S. O., & Merckelbach, H. (2008). Cognitive processes in dissociation: An analysis of core theoretical assumptions. *Psychological Bulletin*, 134, 617-647.
- Gleaves, D. H., Eberenz, K. P., Warner, M. S., & Fine, C. G. (1995) Measuring clinical and non-clinical dissociation: A comparison of the DES and QED. *Dissociation*, 8(1), 24-31.
- Goff, B. S., Crow, J. R., Reisbig, A. M. & Hamilton, S. (2007). The impact of individual trauma symptoms of deployed soldiers on relationship satisfaction. *Journal of Family Psychology*, 21(3), 344-353.
- González, H. M., Tarraf, W., Whitfield, K. E., & Vega, W. A. (2010). The epidemiology of major depression and ethnicity in the United States. *Journal of Psychiatric Research*, 44(15), 1043-1051.
- Hagenaars, M., & Krans, J. (2011). Trait and state dissociation in the prediction of intrusive images. *International Journal of Cognitive Therapy*, 4(2), 145-153.
- Harrison, J. A. & Watson, D. (1992). *The Dissociative Processes Scale*. Iowa City: University of Iowa; Unpublished manuscript.
- Heim, C. & Nemeroff, C. B. (2001). The role of childhood trauma in the neurobiology of mood and anxiety disorders: Preclinical and clinical studies. *Biological Psychiatry* 49, 1023-1039.
- Herman, J. L. (1992). Complex PTSD: A syndrome in survivors of prolonged and repeated trauma. *Journal of Traumatic Stress*, 5, 377-391.
- Imam, S. (2008). Depressiom, anxiety, stress scales (DASS) revisited. *International Journal Behavioral Science*, 3(1), 104-116.
- Katoch, V., Jhingan, H. P. & Saxena, S. (1994) Level of anxiety and dissociation in patients with conversion and dissociative disorders. *Indian Journal of Psychiatry*, 36, 67-69.
- Katon, W., Kleinman, A., & Rosen, G. (1982). Depression and somatization: a review. *American Journal of Medicine*, 72, 127-135.

- Kazak, A., Barakat, L., Meeske, K., Christakis, D., Meadows, A. & Casey, R., et al. (1997). Posttraumatic stress, family functioning, and social support in survivors of childhood leukemia and their mothers and fathers. *Journal of Consulting and Clinical Psychology, 65*, 120-129.
- Khan, M. S., Mahmoud, S. F., Badshah, A., Ali, S. U. & Jamal, Y. (2006). Prevalence of depression, anxiety and their associated factors among medical students in Karachi, Pakistan. *Journal of Pakistan Medical Association, 56*(12), 583-586.
- Kihlstrom, J. F., Glisky, M. L. & Angiulo, M. J. (1994). Dissociative tendencies and dissociative disorders. *Journal of Abnormal Psychology, 103*, 117-124.
- Kihlstrom, J. F., & Hoyt, I. P. (1990). Repression, dissociation, and hypnosis. In J. J. Singer (Ed.), *Repression and Dissociation* (181-208). Chicago: University of Chicago Press.
- Kruger, C., & Mace, C. J. (2002). Psychometric validation of the State Scale of Dissociation (SSD). *Psychology & Psychotherapy, 75*(1), 33-51.
- Kwapil, T. R., Wrobel, M. J. & Pope, C. A. (2002). The five-factor personality structure of dissociative experiences. *Personality and Individual Differences, 32*, 431-443.
- Leonard, K. N., Telch, M. J., & Harrington, P. J. (1999). Dissociation in the laboratory: A comparison of strategies. *Behaviour Research and Therapy, 37*, 49-61.
- Lilienfeld, S. O., Lynn, S. J., Kirsch, I., Chaves, J. F., Sarbin, T. R. & Ganaway, G. K. et al. (1999). Dissociative identity disorder and the sociocognitive model: Recalling the lessons of the past. *Psychological Bulletin, 125*, 507-523.
- Lofors, J., Ramirez-Leon, V., & Sundquist, K. (2006). Neighbourhood income and anxiety: A study based on random samples of the Swedish population. *European Journal of Public Health, 16*(6), 633-639.
- Lovibond, P. P., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the fleck Depression and Anxiety Inventories. *Behaviour Research and Therapy, 33*, 335-342.
- Lovibond, S. H., & Lovibond, P. F. (1995a). *Manual for the Depression Anxiety Stress Scales*. Sydney: Psychology Foundation.
- Lynn, S. J. & Rhue, J. W. (1994). *Dissociation: Clinical and Theoretical Perspectives*. New York: Guilford Press
- Maaranen, P., Tanskanen, A., Honkalampi, K., Haatainen, K., Hintikka, J., & Viinamaki, H. (2005). Factors associated with pathological dissociation in the general population. *Australian and New Zealand Journal of Psychiatry, 39*(5), 387-394.

MacGregor, M. (1996). Multiple personality disorder: etiology, treatment, and treatment techniques from a psychodynamic perspective. *Psychoanalytic Psychology*, 13(3), 389-402.

Marmar, C. R., Weiss, D. S., & Metzler, T. (1998). Peritraumatic dissociation and posttraumatic stress disorder. In J. D. Bremner & C. R. Marmar (Eds.), *Trauma, memory, and dissociation. Progress in psychiatry* (229-247). Washington, DC American Psychiatric Press.

Matheny, K.B, Curlette, W.L., Aysan, F., Harrington, A., Gfroerer, C.A., & Thompson, D., et al. (2002). Coping resources, perceived stress, and life satisfaction among Turkish and American University Students. *International Journal of Stress Management*, 9, 81-97.

McHugh, P. R. (2009). Multiple Personality Disorder: Dissociative Identity Disorder. Accessed on 16/04/2012 from <http://www.psycom.net/mchugh.html>.

McKinney, R. A. (2002). Depression and anxiety in law students: Are we part of the problem and can we be part of the solution? *Journal of the Legal Writing Institute*, 8, 229-255.

Merckelbach, H., & Muris, P. (2001). The causal link between self-reported trauma and dissociation: A critical review. *Behaviour Research and Therapy*, 39, 245-254.

Michelson, L. K., & Ray, W. J. (1996). *Handbook of dissociation: Theoretical, empirical and clinical perspectives*. New York: Plenum Press.

Misra R, & McKean M. (2000). College students' academic stress and its relation to their anxiety, time management, and leisure satisfaction. *American Journal of Health Studies*, 16, 41-51.

Morgan III, C. A., Hazlett, G., Wang, S., Richardson, G., Schnurr, P., & Southwick, S. M. (2001). Symptoms of dissociation in humans experiencing acute uncontrollable stress: A prospective investigation. *American Journal of Psychiatry*, 158(8),1239-1247.

Mulder, R. T., Beautrais, A. L., Joyce, P. R., & Fergusson, D. M. (1998) Relationship between dissociation childhood sexual abuse childhood physical abuse and mental illness in a general population sample. *American Journal of Psychiatry*, 155, 806-811.

Muris, P., Merckelbach, H., & Peeters, E. (2003) The Links between the Adolescent Dissociative Experiences Scale (A-DES), Fantasy Proneness, and Anxiety Symptoms. *The Journal of Nervous and Mental Disease*, 191(1), 18-24.

Nemiah, J. C. (1991) Dissociation, conversion and somatization. In A Tusman & S M Goldfinger (Eds), *American Psychiatric Press Review of Psychiatry* (10, 248-260). Washington, DC American Psychiatry Press.

NICE (2011) *Common mental health disorders: the nice guidelines on identification and pathways to care*. UK: The British Psychological Society & The Royal College of Psychiatrists.

Nijenhuis, E. R. S. (2000) Somatoform dissociation: major symptoms of dissociative disorders. *Journal of Trauma and Dissociation*, 1, 7-32.

Price, R. (1987). Dissociative disorders of the self: A continuum extending into Multiple Personality. *Psychotherapy*, 24(3), 387-391.

Prince, M. J., Harwood, R. H., Blizard, R. A., Thomas, A. & Mann, A. H. (1997) Social support deficits, loneliness and life events as risk factors for depression in old age. The Gospel Oak Project VI. *Psychological Medicine*, 27, 323-332.

Putnam, F. W. (1991). Dissociative phenomena. In A Tasman & S M Goldfinger (Eds), *American Psychiatric Press Review of Psychiatry* (10, 145-160) Washington, DC American Psychiatric Press.

Riley, K. C. (1988). Measurement of dissociation. *Journal of Nervous & Mental Disease*, 176, 449-450.

Ross, C. A. (1997). *Dissociative identity disorder*. New York: Wiley

Ross, C. A., Ryan, L., Anderson, G., Ross, D. & Hardy L (1989). Dissociative experiences in adolescents and college students. *Dissociation*, 2(4), 239-242.

Sachs-Ericsson, N., Cromer, K., Hernandez, A., & Kendall-Tackett, K. (2009). A review of childhood abuse, health, and pain-related problems: The role of psychiatric-disorders and current life stress. *Journal of Trauma and Dissociation*, 10(2), 170-188.

Sandberg, D. A. & Lynn, S. J. (1992). Dissociative experiences, psychopathology and adjustment, and child and adolescent maltreatment in female college students. *Journal of Abnormal Psychology*, 101, 717-723.

Sarason, I. G., Sarason, B. R., Shearlin, E. N., & Pierce, G. R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships*, 4, 497-510.

Schauer, M., & Elbert, T. (2010). Dissociation following traumatic stress: etiology and treatment. *Journal of Psychology*, 218(2), 109-127.

Simeon, D., Guralnik, O., Knutelska, M., & Schmeidler, J. (2002). Personality factors associated with dissociation: Temperament, defenses, and cognitive schemata. *American Journal of Psychiatry*, 159, 489-491.

Snaith, R. P., Baugh, S. J., Clayden, A. D., Husain, A., & Sipple, M. A., (1982). The Clinical Anxiety Scale: an instrument derived from the Hamilton Anxiety Scale. *British Journal of Psychiatry*, 141, 518-523

Soffer-Dudek, N., & Shahar, G. (2011). Daily stress interacts with trait dissociation to predict sleep-related experiences in young adults. *Journal of Abnormal Psychology*, 120(3), 719-729.

Soukup, J., Papezova, H., Kubena, A. A., & Mikolajova, V. (2010) Dissociation in nonclinical and clinical sample of Czech adolescents. Reliability and validity of the Czech version of the Adolescent Dissociative Experiences Scale. *European Psychiatry, 25*, 390-395.

Spiegel, D. (1990). Trauma, dissociation, and hypnosis. In R.P. Kluff (Eds.), *Incest-related syndromes of adult psychopathology* (1, 247-261). Washington: American Psychiatric Press.

Spitzer, C., Barnow, S., Freyberger, H. J., & Grabe, H. J. (2006). Recent developments in the theory of dissociation. *World Psychiatry, 5*, 82-86.

Stone, A. A., Mezzacappa, E. S., Donatone, B. A., & Gonder, M. (1999). Psychosocial stress and social support are associated with prostatespecific antigen levels in men: Results from a community screening program. *Health Psychology, 18*, 482-486.

Van der Kolk, B. A., & Fisler, R. (1995). Dissociation and the fragmentary nature of traumatic memories: Overview and exploratory study. *Journal of Traumatic Stress, 8*, 505-525.

Van Ijzendoorn, M. H. & Schuengel, C. (1996). The measurement of dissociation in normal and clinical populations: Meta-analytic validation of the Dissociative Experiences Scale (DES). *Clinical Psychology Review, 16*, 365-382.

Vanderlinden, J., Varga, K., Peuskens, J., & Pieters G (1995). Dissociative symptoms in a population of Hungary. *Dissociation, 8*(4), 205-208.

Waller, N. G., Putnam, F. W., & Carlson, E. B. (1996). Types of dissociation and dissociative types: A taxometric analysis of dissociative experiences. *Psychological Methods, 1*, 300-321.

Wright, D. B., & Loftus, E. F. (1999). Measuring dissociation: Comparison of alternative forms of the Dissociative Experiences Scale. *American Journal of Psychology, 112*, 497-519.

Zeidner, M. & Matthew, G. (2011). *Anxiety 101*. New York: Springer.